



Investing in rural people

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Main report and annexes

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Abbreviations and Acronyms

AEZ	Agro Ecological Zone
ASA	Agricultural Seed Agency
ADC	Aquaculture Development Centre
AFDP	Agriculture and Fisheries Development Programme
ASDP-II	Second Agriculture Sector Development Programme
COVID-19	Coronavirus Disease 2019
CRA	Climate Risk Analysis
CSA	Climate Smart Agriculture
DAO	District Agriculture Officer
DCDO	District Community Development Officer
DEMO	District Environment Management Officer
DFO	District Fisheries Officer
DFT	District Facilitation Team
DSFA	Deep Sea Fishing Authority
EEZ	Exclusive Economic Zone
EGS	Early generation seed
EIS	Environmental Impact Statement
EMA	Environmental Management Act of 2004
ENRM	Environment and Natural Resources Management
ESC	Environmental, Social and Climate
ESCMP	Environmental, Climate and Social Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAD	Fish aggregating device
FAO	Food and Agriculture Organisation of the United Nations
FPIC	Free Prior and Informed Consent
ha	Hectare
HH	Household
GALS	Gender Action Learning System
GBV/SEA	Gender Based Violence / Sexual Exploitation and Abuse
GDP	Gross Domestic Product
GoT	Government of Tanzania
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
ICT	Information and communications technology
IFAD	International Fund for Agricultural Development
IOTC	Indian Ocean Tuna Commission
IPMP	Integrated Pest Management Plan
ISTA	International Seed Testing Association
km	Kilometre

km²	Square kilometres
l/s	Litres per second
m³	Cubic metre
masl	Metres above sea level
MCM	Million cubic metres
MoA	Ministry of Agriculture
MANRLF	Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar
ME&KM	Monitoring & Evaluation and Knowledge Management
MLF	Ministry of Livestock and Fisheries
mm	Millimetre
MNRT	Ministry of Natural Resources and Tourism
MRALG	Ministry of Regional Administration and Local Government
MRALGSD-ZNZ	Ministry of Regional Administration, Local Government and Special Departments
MOFP-TZ	Ministry of Finance and Planning Tanzania Mainland
MOFP-ZNZ	Ministry of Finance and Planning Zanzibar
MOW	Ministry of Water
MSP	Marine Spatial Plan
MT	Metric tonnes
NBS	National Bureau of Statistics
NEMC	National Environment Management Council
PB	Project Brief
PCU	Programme Coordination Unit
PDR	Programme Design Report
PHS	Plant Health Service, Ministry of Agriculture, Tanzania Mainland
PIM	Programme Implementation Manual
PMO	Prime Minister's Office
PSC	Programme Steering Committee
PTAC	Ministerial Programme Technical Advisory Committee
SEA	Strategic Environmental Assessment
SECAP	[IFAD's] Social Environmental and Climate Assessment Procedures
SEP	Stakeholder Engagement Plan
SME	Small and Medium Enterprises
SUGECO	Sokoine University Graduate Entrepreneurs Cooperative
SWIOFC	South West Indian Ocean Fisheries Commission
SWIOFISH	World Bank's South West Indian Ocean Fisheries Project
TADB	Tanzania Agricultural Development Bank
TARI	Tanzania Agricultural Research Institute
TAFICO	Tanzania Fisheries Cooperative
TAFIRI	Tanzania Fisheries Research Institute
TASTA	Tanzania Seed Trade Association

TMA	Tanzania Meteorological Agency
TOSCI	Tanzania Official Seed Certification Institute
URT	United Republic of Tanzania
USD	United States Dollar
WIO	Western Indian Ocean
ZAFICO	Zanzibar Fisheries Cooperative
ZEMA	Zanzibar Environmental Management Authority
ZNZ	Zanzibar

In line with IFAD11 mainstreaming commitments, the project has been validated as:

Gender transformational Youth sensitive Nutrition sensitive Climate finance

IFAD Adaptation Finance	\$13,844,000
IFAD Mitigation Finance	\$0
Total IFAD Climate-focused Finance	\$13,844,000

Executive Summary

Country context. The United Republic of Tanzania (henceforth referred to as ‘Tanzania’) is one of the stronger economic performers in Sub-Saharan Africa, and one of the top three growth performers in East Africa. Between 2013 and 2018, its average gross domestic product (GDP) growth at 6.5 percent was behind only Ethiopia (9.5 percent) and Rwanda (6.7 percent). This growth is projected to slow to 2.5 percent in 2020, but with a projected rebound at 5.5 percent in 2021, in the scenario in which the COVID-19 crisis persists to the end of 2020. Public debt is currently sustainable, with all debt burden indicators being below the required thresholds.

Coping with COVID-19 pandemic. The COVID-19 shock is expected to result in negative macro-economic effects for the Tanzanian economy. These are primarily reflected through: (i) a decline in travel and tourist flow; (ii) significant volatility in commodity prices; decline in exports and imports; (iii) lockdown in neighbouring countries that has caused disruptions in supply chain, notably food supply chains. It is expected that the increasing strain on the national budget could potentially reduce planned investments in the agricultural sector, resulting in threats to crop production, food security and rural agribusiness linkages.

Poverty, human development, and demography. Tanzania was ranked 159th out of 189 countries, according to the United Nations’ Development Programme Human Development Index with an index score of 0.528 for 2018. The percentage of people living in poverty declined from 34.4 percent in 2007 to 26.4 percent in 2018. In 2018, about 14 million people lived below the national poverty line. Poverty is significantly higher in rural than urban areas with 31.3 percent of the rural population (66 percent of the 59.73 million total population) living below the poverty line, compared to 15.8 percent for the urban areas. Poverty is highest among those living in arid and semi-arid regions, who are dependent on livestock and food crop production for their livelihoods. Poverty is also prevalent near the coast where households depend on fisheries for their livelihoods.

Agriculture and food security context. Agricultural production contributed to about 29.1 percent of GDP, 47 percent of exports and provided employment to about 3 percent of Tanzanian households in 2018, while meeting 95 percent of the country’s food requirements. Tanzania has 95.5 million hectares (ha) of land, of which 44 million ha are classified as arable, with only 23 percent under cultivation. About 80 percent of agricultural production comes from rainfed, low-input smallholder farms highly vulnerable to climate variability and change. Despite some advances over the last ten years, especially for cereals in high potential areas, a sustainable and reliable supply chain for quality seed has not emerged. Multiplication and use of improved varieties remains low (lack of Early Generation Seeds and private sector bulking up certified seeds) and volumes tend to be low and supply dwindles in the absence of project funding.

The country’s Exclusive Economic Zone in the Indian Ocean, covering an area of 223,000 km² remains unreachable by local fishers due to, among other things, limited capacity, experience and lack of appropriate fishing vessels suitable for deep sea fishing. On the other side, the national demand for fish seeds is estimated at over 86 million fingerlings, against current production of about 21 million fingerlings. More than 30 percent of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids, minerals and essential and amino and fatty acids.

Nutrition. The number of undernourished people in Tanzania increased from 12.2 million from 2004 to 2006 to 14.1 million from 2017 to 2019, although the total population’s prevalence of undernourishment decreased from 31.7 percent to 25.0 percent during the same period. About 32 percent of children under the age of five years are stunted or short for their age, which is a condition reflecting a cumulative effect of chronic malnutrition. This is linked to an inadequate diet, which is high in calories and very low in protein and essential nutrients. It is estimated that 85 percent of Tanzanians cannot afford a healthy diet, for which the cost represents 104.1 percent of food expenditure.

Policies and Programmes. The second phase of the Agricultural Sector Development Programme (ASDP II 2017/2018–2027-/20287) aims at transforming the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition. ASDP highlights several constraints to achieving agricultural transformation targets, including (i) underinvestment in productivity enhancing technologies; (ii) limited access to technology demand and delivery channels; (iii) limited access to market financing for the uptake of technologies; and (iv) inadequate facilities to sustain supply of crop and fish seeds and innovations.

Rationale for IFAD involvement

In order to accelerate ASDP II’s implementation and delivery of scalable results, the Government of Tanzania (GoT) has requested support to implement two priority areas of the ASDP II. In doing so, this will address key challenges in the seeds, fisheries and aquaculture value chains, while strengthening institutional capacities of key public institutions and private sector stakeholders. Past IFAD investments in Tanzania adopted a production-focused approach or a value chain development approach often focusing on marketing of particular commodities but have overlooked the nutritional values of commodities and their environmental impacts. The innovation in AFDP is grounded in the use of an inclusive food systems approach, which looks beyond increasing productivity to contribute to four core sustainable food system objectives: (i) ensuring food

security and provide healthy, balanced and nutritious diets that contribute to health for all; (ii) providing decent livelihoods and jobs for all food system actors, notably smallholders, women and youth; (iii) contributing to inclusive governance and reducing inequality between stakeholders and between territories; and (iv) improving environmental integrity limiting effects on climate change.

Programme description

The overall objective of the Agriculture and Fisheries Development Programme (AFDP-2021-2026) is to contribute to inclusive food systems for improved livelihoods, food security, nutrition and resilience. Its development objective is to “enhance sustainable productivity, climate resilience and commercialization of selected crop seeds, fisheries and aquaculture”, while devoting particular attention to women empowerment and youth participation. This will be measured by four core indicators, namely: (i) percentage of target households reporting increased average annual net income by 30 percent; (ii) percentage of households reporting an average 25 percent increase in production of maize, beans, sunflower, seaweed and fish (iii) at least 60 percent of women 15-49 years of age who consume at least 5 out of 10 food groups; and (iv) percentage of households reporting adoption of environmentally sustainable and climate-resilient technologies and practices.

Programme area. The programme targets a total of 41 districts (out of 169 districts) in 11 regions (out of 31 regions) of the central Tanzania Mainland corridor as well as four marine conservation areas in Unguja and Pemba, AFDP will focus on drier agro-ecological zones with unimodal rainfall, targeting sustainable intensification and diversification of more vulnerable farming systems (crops and aquaculture), highly susceptible to climate variability and change. The programme will also promote sustainable utilization of fisheries resources for improved livelihoods of coastal fishing communities in Zanzibar and Mainland Tanzania.

Target groups. The total number of direct beneficiary households is 260,000 corresponding to approximately 1,300,000 persons. These include: (i) 200,000 smallholder farming households accessing, using and maintaining improved seeds for preferred varieties of maize, sunflower and beans/pulses; (ii) 1,000 small and medium scale seed producers and agro-dealers participating in seed distribution and marketing; (iii) 48,000 artisanal fishers, fish processors and traders along the Indian ocean coast of Mainland and Zanzibar; 6,000 small holder aquafarmers; 15,000 smallholder seaweed producers and processors (80 percent women), and 1,000 unemployed young women and men who will find employment opportunities in the seed and fish value chains.

Targeting mechanisms. The targeting mechanisms envisaged will ensure equitable participation in, and benefits from, Programme activities and opportunities for women, men, youth and other vulnerable groups. Direct targeting mechanisms will ensure the identification of key beneficiaries, based on set criteria and validation, participation of vulnerable groups in planning, implementation and evaluation, including female-headed and youth led households. AFDP targets to reach 50 percent women and 30 percent youth through its interventions.

Targeting strategy comprise of: (i) geographic targeting, based on the identification of priority districts; (ii) self-targeting, with activities geared towards the needs of poor producer households that are engaged in crop and fisheries activities; (iii) direct targeting of very poor and/or marginalised households, including youth; (iv) empowerment and capacity building measures to ensure the target group is able to access the proposed activities; and (v) enabling environment and policy dimensions so as to ensure a conducive environment for the project to be implemented and sustainability of its results.

Alignment with IFAD corporate priorities. The Programme is in line with the three strategic objectives of IFAD Strategic Framework 2016-2025, namely: (i) increase poor rural people’s productive capacities; (ii) increase poor rural people’s benefits from market participation; and (iii) strengthen the environmental sustainability and climate resilience of poor rural people’s economic activities. It is aligned with the Country Opportunity Strategic Programme (2016-2021) for Tanzania and relevant IFAD strategies and guidelines especially those pertaining to gender, youth, climate/environment, private sector, rural finance, nutrition, and scaling up.

Gender equality and women empowerment: AFDP will create equal opportunities for women and men to benefit from: (i) enhanced access to quality crop and fish seeds, technologies and best management practices for production, processing and value addition systems; (ii) access to nutritious food, especially from legumes (beans and pulses) and fish; (iii) reduced workloads due to increased resilient crop productions and greater efficiency of fisheries production and post-harvest technologies; (iv) better access to productive resources and services; (v) access to more profitable markets and increased income; and (vi) participation in community organisations, business networks, smallholder farmers and fishers cooperative societies with improved decision making.

Nutrition. AFDP is designed within the framework of nutrition-sensitive investments and will influence nutrition through the following pathways: (i) production of diverse and nutritious foods, including quality maize, protein and iron rich beans and other pulses: sunflower, seaweed and fisheries of high nutritive value (e.g. “dagaa”); (ii) promoting household consumption of safe and nutritious food; (iii) supporting processing and marketing of fish and sunflower with labour saving technologies to prevent post-harvest losses; and (iv) providing opportunities for income diversification.

Climate change and environment. In order to mitigate and adapt to uncertainties associated with climate variability and change (drought and floods), the programme will contribute to the development of appropriate locally-adapted seeds, which are more productive and resilient to climate change, pests and diseases. In order to recover and protect coastal and marine resources, the programme will promote environmentally friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers tents) and storage to reduce post-harvest losses. In particular, the programme will support investments in stock assessments, selective fishing gears and methods to avoid catching non-targeted species and participatory management of natural resources to address destructive fishing practices and protect mangroves.

Youth empowerment through entrepreneurship and jobs. AFDP will encourage participation of young people as seed producers, fish farmers, technicians, agri-input specialists, lead farmers, market information specialists to provide information to agro-traders, processors and other stakeholders in the targeted value chains. AFDP’s investments in the postharvest infrastructures (i.e. fish processing plants, ice making, solar drying, etc.) offer direct decent employment opportunities for the youth. Similarly, investments in seed production, agro-dealer networks, fingerlings production present entrepreneurship

opportunities for the youth in several ways. The Programme will reach 30 percent of young men and women.

Access to finance: The Programme will partner with the Tanzanian Agricultural Development Bank (TADB) to facilitate access to adapted and affordable finance by the various actors in the crop and fish value chains. The partnership will leverage the Smallholder Credit Guarantee Scheme, initially funded by IFAD, through MIVARF, and concessional credit lines, to be funded by other TADB partners. The Programme will also enhance financial literacy of small-scale producers and small agri-enterprises to stimulate uptake of the financial services. It will leverage on TADB and the private sector to pilot and scale-up digital solutions that will positively impact rural young women and men.

Programme components and activities.

AFDP is structured in two technical components: Component 1: Enhanced agricultural productivity of crop seeds and fisheries; and Component 2: Improved market access, value addition and private sector development. A third component focuses on Programme Management and Coordination.

Component 1. Enhanced productivity of crop seeds, fisheries and aquaculture. The expected outcome of this component is increased climate-resilient productivity and production from crop seed and fish value chains. It will be achieved by focusing investments in two sub-components, namely (i) crop seed systems development and (ii) fisheries and aquaculture development.

Subcomponent 1.1 Crop seed systems development. This sub-component's objective is to ensure suitable supply and access to quality seeds of adapted higher quality varieties of maize, sunflower and beans/pulses in the target areas. The Programme will support key public institutions to strengthen formal seed systems to ensure production and availability of 13,000 MT of quality certified seeds (7,500 MT maize, 3,000 MT sunflower, 2,500 MT beans and pulses) for the target area. To this end, the Programme will finance: (i) national seed demand and supply coordination; (ii) breeding and supply of early generation productive and climate-risk resilient varieties; (iii) basic seed multiplication for preferred maize, sunflower and beans/pulses varieties.; (iii) private sector and community-led bulking up of certified seed; and (v) seed quality control and certification.

Subcomponent 1.2. Sustainable fisheries and aquaculture development. The programme will: (i) promote sustainable fishing practices in the marine inshore waters, supporting the livelihoods of 18,000 small-scale fishers; (ii) finance a public-private-producer partnership (4P) joint venture for the acquisition and operation of eight long line fishing vessels and two fish processing plants.; (iii) develop the capacity of Aquaculture Development Centers to supply high quality Tilapia and catfish seeds and deliver effective extension services to 6,000 aquafarmers; and (iv) increasing the quality of seaweed seeds and promoting labour-saving seaweed production methods to 15,000 seaweed producers.

The programme will finance technical assistance to prepare prefeasibility studies for the 4P joint ventures partnerships and negotiate partnership modalities including the allocation of financial, technical and operating risks and responsibilities between the government institutions, public investors and smallholder farmers and fishers and their associations. The 4P model will ensure that programme investments in fishing vessels and fish processing facilities follow business logic, bring benefits to all involved parties, especially smallholder fishers, and are sustained beyond the programme lifetime.

Component 2. Improved market access, value addition and private sector development. This component's expected outcome is improved marketing and value addition of crop seeds and fish products. It will be achieved by combining investments in (i) quality crop seed use and business development and (ii) fish market development and value addition.

Subcomponent 2.1. Quality seed use and business development Further to broad-based improved seed availability and access in the target AEZ, AFDP will directly benefit 200,000 poor smallholder households who will access, use and maintain improved seeds of preferred varieties for maize, sunflower and beans/pulses production. AFDP will finance: (i) regional multi-stakeholder innovation platforms; (ii) strengthening agro-dealer networks targeting young and women entrepreneurs to promote supply and facilitate access to improved seeds; (iii) local extension services (including the use of digital technologies) to promote broad-based smallholder farmers awareness and demand for improved seeds; and (iv) facilitating synergies for effective market linkages with grain buyers and processors.

Sub-component 2.2. Fish market development and value addition. The Programme will finance: (i) investments in infrastructure and technologies for reducing postharvest losses; and (ii) market linkages for increasing value/income from aquaculture and seaweed production. The Programme will subsidize ice-making plants, cold-supply chain facilities, solar dryers/tents and drying racks for small-pelagic "dagaa" and seaweed. The Programme will also finance the rehabilitation of two multipurpose modern fish markets in Pangani and Bagamoyo fish landing areas. These investments will provide services and market to over 30,000 artisanal fishers, fish processors and traders and generate employment directly and indirectly for about 1,000 young women and men along the fish value chain.

Component 3. Programme Management and Coordination. This component will support programme management and coordination; monitoring and evaluation and knowledge management. AFDP will generate and use evidence for policy engagement in four key areas: (i) strengthening national seed systems by promoting private sector participation and developing regulations and innovations to fight fake seeds; (ii) review and implementation of the 2020 Private Public Partnerships Regulations to include active role of producers and their organisations; (iii) review and implementation of the National Fisheries and Aquaculture policy of 2015 with a view to promote the 'aquaculture cluster' growth models; and (iv) review and implementation of the Tuna Fisheries Management plan, with specific interventions to ensure sustainability of fisheries in the EEZ. The programme also makes provision for emergency recovery and resilience designed to provide swift response in the event of an eligible crisis or emergency event, such as the global COVID-19 pandemic, climate extremes, and desert locust pest invasion.

Environmental, Social and Climate Risk classifications: The Programme is confirmed as SECAP **Category A**. Most of AFDP's proposed interventions will have some significant impacts, but which can be readily mitigated or remedied and therefore fall into Category B. The deep sea fisheries interventions and associated processing activities will trigger an overall Category A status of the Programme, which requires the preparation of an Environmental and Social Assessment) and an Environmental and Social Management Plan (ESMP), the purpose of which will be to facilitate the implementation of sustainable fishing operations. The programme is expected to be moderately sensitive to climate risks and thus requires

integration of climate adaptation and mitigation actions into the enhanced production, distribution and utilisation of quality seeds as well as fisheries and aquaculture development. As part of the design process, an Environmental and Social Management Framework was developed to assess environmental, social and climate impacts for each sub-project and components under the AFDP, and subsequently, an overall ESMP was developed.

The **overall programme coordination** will be under the Prime Minister's Office, which is responsible for coordinating the implementation of ASDP II. The Programme will establish a semi-autonomous Programme Coordination Unit, based in Dodoma complement existing ASDP II coordination and management structure. A smaller Programme coordination team will be established in Zanzibar. Field implementation will be based on performance contracts with key government institutions, selected implementing partners and service providers. Implementation at the district level will use the existing structures of the Local Government Authority, which comprise specialists for fisheries, aquaculture and crop seeds, environment and nutrition who will work closely with the existing District Facilitation Teams. The Programme will leverage technical expertise in the implementing ministries, organisations and partner institutions both at central and district levels to ensure effective mainstreaming of gender, women and youth empowerment, and nutrition sensitive interventions to reach the target beneficiaries, smallholder poor rural households.

Costs and Financing. The programme cost is estimated at USD 76.8 million for six years (2021 – 2026). The current overall financial support for this programme available from IFAD under the current financing cycle (IFAD11) is USD 58.8 million or 76.6 percent of total project costs. These resources will be complemented by the Government of Tanzania's contribution, estimated at USD 7.8 million (10.1 percent), mainly from tax exemption, private sector investments of USD 8.5 million (11.3 Percent) and beneficiary contributions of USD 1.7 million (or 2.2 percent). Climate financing represents 24% (USD 13.5 million) of the IFAD financing, which is earmarked for climate adaptation interventions.

AFDP benefits are attributed mainly to the increased production of 13,000 metric tonnes (MT) of certified quality seeds and their subsequent utilization by 200,000 direct beneficiaries of specialized agricultural support services targeting poor farming households. For aquaculture, over 25 million fingerlings and improved inputs will supply grow-out ponds for smallholder aquafarmers. Eight deep-sea fishing vessels are modelled on the basis of available data and assumptions, with related post-harvest loss reduction enterprises along the value chain. The combination of all models are aggregated at the programme level to form the basis of the overall (financial and economic) benefit stream. Overall, the analysis suggests an economic internal rate of return of 15 percent and a net present value of USD 69 million over 20 years. The analysis uses 170 different scenarios to test the robustness of the project against standard risks associated with increases in cost, reduction in benefits, time lags and reduced adoption rates. Using a financial discount rate, the minimum adoption rate needed for a positive returns appears as 32 percent while using a social discount rate, the adoption rate is 23 percent. The programme appears capable of achieving this rate; however, a time lag of one or two years would make positive returns a difficult prospect.

Financial Management (FM) System: AFDP's FM arrangements will follow the GoT FM system, with some enhancements proposed to mitigate on risks identified. GoT will be required to maintain acceptable financial management systems including accounting, financial reporting, and auditing systems for the projects.

Innovations. Key innovations promoted under this programme will include (i) improved and adapted varieties of beans/pulses, maize and sunflower; (ii) digitization of the seed certification process and leveraging digital tools for coordinating seed demand and supply, and facilitating seed purchase by small holder farmers; (iii) 4P joint ventures for deep-sea fishing vessels and integrated fish processing plants; (iv) various forms of value addition activities in fisheries value chains; and (v) aquaculture cluster growth models in line with emerging demand, and (vi) seaweed production, processing and value addition technologies.

Scaling up: AFDP is designed with a vision of scale in mind, seeking to make a significant impact by expanding, adapting and sustaining successful interventions to reach over 1.8 million people (direct and indirect beneficiaries) over a six year period. Programme innovations and results will be scaled up through (i) expanding the activities of government institutions to sustainably produce early generation seeds for different crops; (ii) deepening the relationship between the public seed entities and private operators; (iii) further developing the role of small and medium scale enterprises in promoting use of improved seed and other productivity enhancing techniques; (iv) deploying the 'aquaculture cluster' growth models and progressively evolving into 'aquaparks'; and (v) generating evidence for advocacy and policy engagement, and working with the intended large-scale implementers.

1. Context

A. National context and rationale for IFAD involvement

a. National Context

Country context. The United Republic of Tanzania (henceforth referred to as Tanzania) is a coastal state on the Western Indian Ocean, situated in East Africa. With an estimated population of 59.73^[1] million in 2020 and projected to reach about 80 million by 2030 on a total land area of 945,200 km, Tanzania is the sixth most populous country in Africa. The country has a geographic advantage as a coastal economy, with 1,424 km of Indian Ocean coastline, shared access to the three major African Great Lakes (Victoria, Tanganyika, and Nyasa) and shared borders with eight countries, of which five are landlocked. The Port of Dar-es-Salaam is the port of entry and exit for two of the three major East Africa transport corridors, the Central and Southern Corridors and is on direct shipping routes to Asia and the Gulf. Tanzania belongs to two regional economic communities, namely the East African Community (EAC) and the Southern African Development Community (SADC). These

factors can contribute in accelerating the implementation of the African Continental Free Trade Area.

Economic and social context Tanzania is one of the stronger economic performers in sub-Saharan Africa, and one of the top three growth performers in East Africa. Between 2013 and 2018, its average Gross Domestic Product (GDP) growth (6.5 percent) was behind only Ethiopia (9.5 percent) and Rwanda (6.7 percent) before the outbreak of the COVID-19 pandemic. GDP growth translated into substantial increases in average per capita income, from USD 1,015 in 2013 to USD 1,097 in 2018 (for Tanzania Mainland) and USD 859 in 2013 to USD 1,026 in 2018 (for Zanzibar). The inflation rate continued to decline in 2018, reaching 3.3 percent, down from 6.3 percent as at end 2013. Public debt is currently sustainable, with all debt burden indicators being below the required thresholds. The 2019 public debt-to-GDP ratio was estimated at 40.1 percent. In 2018/19 debt service represents 43 percent of domestic revenues[2].

Coping with the COVID-19 pandemic. It is foreseen that due to COVID-19, real GDP growth will decline by just over half - from 5.8 percent in 2019 to 2.5 percent - but it is also expected to rebound significantly to 5.5 per cent in 2021[3], which is a reflection of the country's strong economic performance. It is also foreseen that there will be an increased poverty rate (by at least 2.5 percent), implying that an additional 500,000 Tanzanians could fall below the poverty line[4]. COVID-19 impacts are primarily reflected through: (i) a decline in travel and tourist flow; (ii) significant volatility in commodity prices and decline in exports and imports; and (iii) lockdown in neighbouring countries that has caused disruptions in supply chain, notably food supply chains. The current outlook is highly uncertain, especially if government actions are not strong, well-targeted or sustained. However, Tanzania has several advantages to mitigate the negative effects of the pandemic. These include a considerable fiscal space given its track record of low fiscal deficits and current low risk of debt distress, high international reserves, and commodity price movements as an oil importer and gold exporter, which is working to dampen the overall trade impact.

Tanzania's wealth of natural resources, consistent robust growth, globally competitive labour costs and a large, youthful labour pool, as well as its strategic geographic position present significant opportunities, which could support investment for sustainable and inclusive development. The country ranks 141 out of 190 economies in the World Bank's 'Doing Business 2020'[5] partly because the private sector perceives the business environment to be unpredictable. Businesses continue to face significant barriers to entry, including lack of adequate transport and utilities infrastructure, which constrain efficient supply chain flows; an underdeveloped financial sector; low levels of urbanisation; and a predominantly low-skilled workforce. The private sector remains segmented with a majority of firms, which are small, operate informally, and have very low productivity and value-addition.

Poverty, human development, and demography With a low Human Development Index score of 0.528 in 2018[6], Tanzania is currently ranked 159th out of 189 countries. The percentage of people living in poverty has declined from 34.4 percent in 2007 to 26.4 percent in 2018. Extreme poverty rates also fell from 12.0 to 8.0 percent between 2007 and 2018[7], but poverty is still high in absolute numbers due to high population growth. In 2018, about 14 million people lived below the national poverty line of TZS 49,320 (about USD 21) per adult equivalent per month. This number increases to 26 million (49 percent of the population), when benchmarked against the international poverty line of US\$1.90 per person per day in 2018.

Key characteristics of poverty are as follows: (i) significantly higher in rural than urban areas with 31.3 percent of the rural population living below the poverty line, compared to 15.8 percent in urban areas; (ii) high vulnerability - many non-poor households are clustered just above the poverty line and are vulnerable to falling into poverty in case of a shock; and (iii) high fertility rates, resulting in challenges to achieve a demographic transition as well as to invest in health and education, to reduce inter-generational transmission of poverty[8]. Poverty is highest among the population living in arid and semi-arid regions, who is dependent on livestock and food crop production for its livelihood. Poverty is also prevalent along the coast, where households depend on fisheries for their livelihoods.

Agriculture, nutrition and food security context The 2020 'State of Food and Nutrition in the World'[9] estimates that, from 2017 to 2019, 13.4 million Tanzanians were severely food insecure and 31.0 million (55 percent of total population) were either moderately or severely food insecure. In addition, the number of undernourished people increased from 12.2 million between 2004 and 2006 to 14.1 million between 2017 and 2019, although the prevalence of undernourishment decreased from 31.7 percent to 25 percent during the same period[10]. The number of children (under five years of age), who are stunted, increased from 2.8 million in 2012 to 3.0 million in 2019, representing 31.8 percent, a decrease from 35 percent in 2012.

Agricultural production contributed to about 29.1 percent of GDP, 47 percent of exports and provided employment to about 3 percent of Tanzanian households in 2018 (a decline from 71.4 percent of total employment in 2008), while meeting 95 percent of the country's food requirements. Tanzania has 95.5 million hectares (ha) of land, of which 44 million ha are classified as arable, with only 23 percent under cultivation. About 80 percent of agricultural production comes from rainfed, low-input smallholder farms (with an average farm ranging from 0.2 ha to 2.0 ha) highly vulnerable to weather variability.

Demand for food is high and growing in domestic and regional markets[11] Agricultural imports have been increasing, with food imports (wheat, oil and fats), representing the largest share (80 percent) of total merchandise imports. Further to growing national consumption demand, there is a growing regional export market for beans of different types, estimated at more than 800,000 metric tonnes (MT) against current export of about 250,000 MT. Tanzania has an estimated demand of 500,000 MT of edible oils, while total domestic production is estimated at 180,000 MT. Currently, fish production for 2019/2020 stands at 392,932.82 MT from marine and inland waters. About 85 percent of the country's fisheries production comes from freshwater inland lakes, mainly Lake Victoria, with 14 percent from marine sources, while aquaculture currently contributes just 1 percent, but with a significant undeveloped potential. About 714,000 MT of fish is required to increase per capita fish consumption from the current 8.5 kg to 10.5 kg. This implies an increase of 321,000 MT of fish compared to current levels, in order to meet this important consumption level.

The marine fisheries, especially the Exclusive Economic Zone (EEZ), covering an area of 223,000 km², can contribute 30 percent of the total fish export requirements by 2025. However, local fishers are constrained by limited capacity, experience and lack of appropriate fishing vessels suitable for deep sea fishing. In addition, the national demand for fish seeds is estimated at slightly over 86 million fingerlings, against current production of about 21 million fingerlings. However, given the

dramatic rise in consumer demand, the country will need to produce 250 million fingerlings by 2025.

Technologies and innovations. Average crop yields in Tanzania are often only one-third of optimal levels, as the average use of quality inputs, essentially improved seeds, fertilizers and modern technology remains low. Maize and beans certified seeds' average rate of use is estimated at 16-23 percent and 1.9 percent respectively, mainly focusing on high potential areas in southern, western and northern highlands. Despite some advances over the last 10 years, especially in high potential areas and hybrid maize varieties, weakness in the seeds sector persist, including: (i) a low rate of release of new varieties, notably climate smart varieties, mainly Open Pollinated Varieties (OPVs), adapted to more vulnerable agro-ecological zones (AEZ); (ii) insufficient availability of early generation seed (breeder seed, pre-basic seed and basic seed) for adapted public OPV varieties; (iii) inadequate facilities (irrigation, treatment, storage) to sustain seed multiplication and production; (iv) limited promotion and facilitation to encourage smallholder access and adoption of improved seeds; and (v) pervasive existence of fake certified seeds on the market.

Key public institutions in the agricultural sector such as the Agricultural Seed Agency (ASA), Tanzania Agricultural Research Institute (TARI), Tanzania Official Seed Certification Institute (TOSCI) have unique positions and opportunities to produce adapted quality early generation seeds. This will allow for bulking-up of certified seeds by private seed producers (SME, farmer organizations), which will increase use of OPV by farmers and overall economic productivity. Public institutions are critical partners for OPV and minor crops, but also for more vulnerable farming systems for which the private seed sector shows little interest. However, public institutions are under-resourced to develop new seed varieties and to produce early generation (pre-basic and basic) seeds for further multiplication by the private sector (seed companies, professional seed farmer organizations), especially on varieties and practices, adapted to more vulnerable AEZ and cropping systems. These constraints result in smallholder farmers using uncertified seeds or low-yielding varieties, and 'fake' seeds. In the fisheries sector, the Tanzania Fishing Corporation (TAFICO) and Zanzibar Fishing Company (ZAFICO) ensure increased marine fish supplies, through commercial fishing and value chain development, while the Deep Sea Fishing Authority is responsible for regulating and developing fishing opportunities in Tanzania's EEZ. Aquaculture Development Centers (ADCs) have been established to produce aquaculture inputs, provide demonstration and extension services to fish farmers and drive aquaculture growth in the country. The Tanzanian Agricultural Development Bank (TADB) is a state-owned development finance institution, mandate to provide direct financing to small farmers and other agricultural value chain actors and in the management of financial instruments, which aim at increasing the appetite of the private financial sector for the agricultural sector, including fisheries.

Policies and Programmes. To address some of the challenges, the Government of Tanzania (GoT) adopted the second Agricultural Sector Development Strategy II (ASDS II 2015/16–2024/25). The goal was to accelerate the transformation of the agricultural sector into modern, commercial, highly productive, resilient and competitive sector in the national and international markets, in accordance with the Tanzania Development Vision 2025. The GoT developed the second phase of the Agricultural Sector Development Programme (ASDP II 2017/2018–2027/2028) with the objective of transforming the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition. The ASDP II highlights several constraints to achieving agricultural transformation targets, including: (i) underinvestment in productivity enhancing technologies, (ii) limited access to technology delivery channels, (iii) limited access to market financing for the uptake of technologies; and (iv) limited participation and investments from private sector partners.

In order to accelerate ASDP II's implementation and delivery of scalable results, the GoT has requested the International Fund for Agricultural Development (IFAD) to finance the **Agricultural and Fisheries Development Programme (AFDP)**. This new programme will provide support to two priority areas of the ASDP II, by contributing to address key sector challenges in the seeds, fisheries and aquaculture value chains, while strengthening institutional capacities of key public institutions and private sector stakeholders.

b. Special aspects relating to IFAD's corporate mainstreaming priorities

In line with IFAD11 mainstreaming commitments, the programme intends to qualify as: (i) Gender mainstreamed; (ii) Nutrition sensitive; and (iii) Climate focused.

Gender and women empowerment. Tanzania is positioned 150th out of 160 countries in the 2019 Gender Inequality Index^[12], with a score of 0.539 and a Gender Development Index of 0.936. These two indices show that women are disadvantaged in access to education, health services as well as economic opportunities. Women play a crucial role in the agricultural sector, representing 52 percent of the labour force, but the contribution of women in the rural Tanzanian economy is underestimated^[13]. The share of female landowners to total female agricultural population remains low at 27 percent, as compared to 73 percent for male. Maize, sunflower and beans are the main crops that both male and female agricultural workers produce for home consumption, with more women engaged in subsistence farming. Women are less likely as compared to men to take advantage of improved seeds, fertilizers and pesticides, have access to the materials and implements for production, or afford farm labour.

Fishing is traditionally considered as a man's job. Women have restricted access to productive assets (boats, equipment), but actually dominate different stages of the fisheries' value chains. Across Tanzania, women are vital to small-scale aquaculture projects and account for about 25 percent of female-headed households. Women and girls face social and cultural norms, which are more entrenched in rural areas. They often bear a heavy burden of work, have fewer opportunities to complete their schooling, and face expectations of early marriage, with risks of poor reproductive health and multiple childbirths and gender-based violence in form of transactional sex in exchange for fish^[14].

The GoT has adopted key gender strategies, as the country moves towards achieving sustainable development. Gender responsive laws, including the formulation of the Women and Gender Policy and National Strategy for Gender Development for Mainland; and the Gender Policy of Zanzibar (2016-2020), reflect the GoT's commitment to global frameworks such as the

Beijing Declaration and Platform for Action and the United Nations (UN) Convention on the Elimination of all forms of Discrimination against Women.

Youth. Tanzania's population is largely young, accounting for about 47 percent of the Tanzanians are under 15 years and 32 percent are between the ages of 15-34. Sixty-seven percent of the labour force are mainly self-employed in either in the informal sector or formal sectors. Youth unemployment in 2019 stood at 11.5 percent. The agricultural sector employs 22.9 percent of Tanzanian working youth (15-35 years). Every year an estimated 800,000 young women and men enter the labour market with limited educational qualifications. Unemployment among young women (14.3 percent) is higher than among young men (12.3 percent). In rural areas youths are informally employed (and underemployed) in subsistence agriculture and family-based livelihood activities such as handicraft, fishing and merchandize retailing. Most of the rural youth lack skills that are required in order to access employment opportunities. Female youth employment is growing however female youth are more likely to be engaged in vulnerable employment^[15]. This demographic dividend has tremendous potential to transform the supply and demand of food and will impact the agri-food industry.

As the largest employer in the country, the agriculture sector will remain an entry point for job creation, inclusive growth and poverty reduction. However, youth participation in agriculture, fisheries and aquaculture is hampered by limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies. The majority of youth do not have practical experience in the fishing and aquaculture sector, considering it as an occupation for older males. The promotion of and support to youth skills development, employment and enterprise development are reflected in the National Strategy for Growth and Reduction of Poverty (MKUKUTA II), the National Youth Development Policy (1996) and the National Employment Policy which coordinates, regulates and promotes equitable and rights-based employment in the public and private sectors.

Table 1. Mainstreaming theme eligibility criteria

	<input checked="" type="checkbox"/> Gender mainstreamed	<input checked="" type="checkbox"/> Nutrition sensitive	<input type="checkbox"/> Youth sensitive	<input checked="" type="checkbox"/> Climate focused
Situation analysis	<input checked="" type="checkbox"/> National gender policies, strategies and actors <input checked="" type="checkbox"/> Gender roles and exclusion/discrimination <input checked="" type="checkbox"/> Key livelihood problems and opportunities, by gender <input type="checkbox"/> May use(Empowerment index) ^[16] assessment for M&E baseline	<input checked="" type="checkbox"/> National nutrition policies, strategies and actors <input checked="" type="checkbox"/> Key nutrition problems and underlying causes, by group <input checked="" type="checkbox"/> Nutritionally vulnerable beneficiaries, by group	<input type="checkbox"/> National youth policies, strategies and actors <input type="checkbox"/> Main youth groups <input checked="" type="checkbox"/> Challenges and opportunities by youth group	The Mainstreaming tool analysis concluded that the project has 13 884 000 USD of climate finance, corresponding to 24% of the total IFAD financing (all of which is adaptation finance) Number/Percentage of persons/households reporting adoption of environmentally sustainable and climate-resilient technologies and practices
Theory of change	<input checked="" type="checkbox"/> Gender policy objectives (empowerment, voice, workload) <input checked="" type="checkbox"/> Gender mainstreamed pathways	<input checked="" type="checkbox"/> Nutrition pathways <input checked="" type="checkbox"/> Causal linkage between problems, outcomes and impacts	<input type="checkbox"/> Pathways to youth socioeconomic empowerment <input checked="" type="checkbox"/> Youth inclusion in project objectives/activities	
Logframe indicators	<input checked="" type="checkbox"/> Outreach disaggregated by gender <input checked="" type="checkbox"/> Women are 50 percent of outreach beneficiaries	<input checked="" type="checkbox"/> Outreach disaggregated by gender, youth, indigenous peoples <input checked="" type="checkbox"/> Women reporting improved diets AND/OR Persons reporting improved nutrition knowledge	<input checked="" type="checkbox"/> Outreach disaggregated by age	

Human and financial resources	<input checked="" type="checkbox"/> Staff with gender TORs <input checked="" type="checkbox"/> Funds for gender activities <input checked="" type="checkbox"/> Funds for gender equality and women empowerment indicators in M&E budget	<input checked="" type="checkbox"/> Staff or partner with nutrition TORs <input checked="" type="checkbox"/> Funds for nutrition activities	<input type="checkbox"/> Staff with youth-specific TORs <input type="checkbox"/> Funds for youth activities	Environmental Management specialist
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Nutrition. The 2015-16 ‘Tanzania Demographic and Health Survey and Malaria Indicator Survey’ reports that 34 percent of children under the age of five years are stunted or short for their age, which is a condition reflecting a cumulative effect of chronic malnutrition. Around 5 percent of children are wasted or too thin for their height, which reflects the level of acute malnutrition while, at the other extreme, 4 percent are overweight or over-nourished and 14 percent of children are underweight or too thin for their age. All three nutritional status indicators are highest among children in the lowest wealth quintile and lowest among children in the highest wealth quintile. Complementary feeding practices are inadequate and especially among the rural, with only 10 percent of breastfed children 6–23 months receiving a minimum acceptable diet, which has a major impact on growth and development. In addition, the adult population also faces a malnutrition burden: the number of women of reproductive age (15-49) affected by anaemia increased from 29.6 percent in 2012 to 28.5 percent in 2016 and higher among pregnant and breastfeeding mothers; the number of adults (18 years and old) who are obese increased from 1.6 million in 2012 to 2.2 million in 2016^[17] with variations across regions.

The underlying causes for malnutrition are linked to food availability, high food prices, an inadequate diet, which is high in calories and very low in protein, poor nutrient intake, inappropriate feeding and dietary practices including for infants and young children, poor hygiene and child care, poor food preparation and storage practices which cause poor nutrient absorption or utilization^[18]. Better nutrition and practices are linked to mother’s education. It is reported that 85 percent of Tanzanians cannot afford a healthy diet, for which the cost represents 104.1 percent of food expenditure, while 65 percent cannot afford a nutrient adequate diet that takes about 65 percent of food expenditure^[19].

There has been a steady decline in per capita consumption of fish from 14kg in the late 1980s to the current 8.5 kg due to dwindling fish catch and slow aquaculture growth. The current per capita consumption is below 9.9 kg and 20.5 kg for Africa and World respectively. The downward trend pose a serious threat to nutrition and food security as fish contribute 30 percent of animal protein intake. This is a worrying trend as fish are beans provide sources of protein that are more affordable in respect to a healthy diet, with a relatively lighter environmental foot print.

Tanzania’s commitment to improving nutrition is outlined in key policy documents, which align with the Tanzania Development Vision 2025, National Multisectoral Nutrition Action Plan (2016–2021), Tanzania Agriculture and Food Security Investment Plan (2011–2020), Tanzania Food and Nutrition Centre Strategic Plan (2014–2018) and the National Nutrition Social and Behavior Change Communication Strategy (2013–2018). The President’s Task Force on Nutrition as well as a multi-stakeholder platform, the High Level Steering Committee on Nutrition, are responsible for coordination of key nutrition stakeholders.

Marginalized populations: Tanzania does not identify with the term ‘indigenous people’. This notwithstanding the GoT considers that there are segments of the population who may be disadvantaged, notably due to their poverty status and other aspects of marginalization. These include the ‘Akie’, the ‘Hadzabe’, the ‘Barabaig’, and the ‘Maasai’. These communities are often impoverished and food insecure, mainly due to land disputes and conflict. Women from these communities have little say in the decisions, right to health education, right to own properties, land and income of family^[20].

Environment and climate change. Climate projection scenarios by 2050 by 2100 include: (i) increased average mean temperatures of less than 1.76 °C for 2050 and 3.4° C for 2100, with greatest warming expected in the west/southwest; (ii) likely increase in average annual rainfall in the range of 0.15 to 0.45 mm/day; (iii) increasing sea-surface temperature (SST) in western Indian Ocean, with a projected change of +1° C by 2100 and iv) rise in sea level of 16cm to 42cm. The severity of drought is exacerbated in the semi-arid regions of Tanzania. Estimations show that 61 percent of land in these areas is likely to be degraded. Furthermore, climate change is expected to affect the marine environment extensively by modifying the physical and chemical properties of seawater, including temperature, salinity, current, vertical stratification and oxygen concentration^[21]. The main impacts of climate change on Tanzanian fisheries are the destruction or degradation of fish spawning and nursery grounds and feeding areas. Rising sea surface temperature and ocean acidification are considered as major threats to coral reefs.

In order to mitigate and adapt to uncertainties associated with climate variability and change (drought and floods), the AFDP will contribute to the development of appropriate locally-adapted seeds, which are more resilient to climate change, pests and diseases. In order to recover and protect coastal and marine resources, the programme will also promote environmental friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers) and storage. In particular, the programme will support investments in fish stock assessments, selective fishing gears and methods to avoid catching non-targeted species and participatory management of natural resources to address destructive fishing practices and illegal mangrove cutting. Aquaculture will be based on locally adapted species of Tilapia and catfish that are able to withstand large variation in environmental and climatic conditions.

c. Rationale for IFAD involvement

IFAD has supported Tanzania’s agricultural sector for 40 years (since 1980) and is recognized by GoT and other development partners for providing continuous as well as innovative technical and consistent financial support in promoting inclusive rural transformation. Past IFAD investments in Tanzania adopted a production-focused approach, which sought to

directly influence food security through increasing agricultural productivity. Recent projects have used a value chain development approach often focusing on marketing of particular commodities but have overlooked the nutritional values of commodities. The AFDP has been designed using an inclusive **food systems approach**^[22] that promotes livelihoods' diversification strategies and resilience (complementary crops and fisheries) in such a way that programme investments will not only be profitable, but bring broad-based benefits for nutrition and social inclusion, and have positive or neutral impacts on natural resource management and bio-diversity.

By adopting a food systems approach, AFDP looks beyond increasing productivity of crops and fisheries, and takes an integrated way to address multiple goals in different parts of the food system (inputs, production, postharvest, marketing and consumption) and in geographically flexible ways (e.g. national, sub-national, regional, district and local). The Programme intends to contribute to four core sustainable food system^[23] objectives: (i) ensuring food security and provide healthy, balanced and nutritious diets that contribute to health for all; (ii) providing decent livelihoods and jobs for all food system actors, notably smallholders, women and youth; (iii) contributing to inclusive governance and reducing inequality between stakeholders and between territories; and (iv) improving environmental integrity limiting effects on climate change. The Programme has a number of cross cutting interventions that allow complementarity between the seed and fisheries value chains. These include nutrition interventions, access to financial services, gender equality and women empowerment, youth entrepreneurship, capacity development, etc. Targeted households will benefit from interventions on both seeds, aquaculture and fisheries. It is anticipated that at least 80% of aquafarmers will also be crop farmers who will benefit from utilization of quality certified seeds of maize, sunflower and beans/pulses to improve productivity and income. Increased income from maize, sunflower and beans/pulses to improve productivity will provide farmers with resources to buy fingerlings and fish feed. Similarly, increased income from fish will allow farmers to purchase quality certified seeds and diversify their livelihoods. The selected crop and fish value chains are highly relevant for increasing food security and nutrition in the target area.

The vast majority of rural households in Tanzania depend on beans and other pulses for daily subsistence and beans account for 71 percent of leguminous protein in diets. More than 30 percent of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids, minerals and essential nutrients as well as amino and fatty acids, including Omega 3. Sunflower oil is healthier than other types of oil, as it is low in saturated fat and high in polyunsaturated fat. Maize provides about 40 percent of national caloric intake in Tanzania.

B. Lessons learned

Past IFAD projects in Tanzania (MIVARF and MUV^[24]), which supported the introduction of 'Quality Declared Seeds (QDS) approach' for sunflower, beans and sesame, contributed in increasing the awareness of farmers on the availability of quality and affordable seeds and planting materials. Despite all these efforts, a sustainable and reliable supply chain for quality seed is yet to emerge.^[25] Multiplication and use of improved varieties remain low and volumes also tend to remain low; while their supply dwindles in the absence of project funding. The GoT has sought to partner with IFAD to strengthen the country's formal seed system, through support to public institutions, private seed companies and farmers organisations, which all have unique opportunities to produce adapted quality early generation seeds, and resolve the constraints of smallholder farmers using uncertified seeds or low-yielding varieties.

IFAD has built extensive experience in the region, with large aquaculture investments in Kenya and Mozambique, from which AFDP has drawn important lessons and linkages to support the growth of small-holder aquaculture. Despite the lucrative potential of fisheries resources in the Exclusive Economic Zone (EEZ), Tanzania is yet to undertake large-scale commercial fishing activities in the EEZ. The GoT has thus requested IFAD's support to develop the country's capacity to utilize the fisheries resources in the EEZ through public-private partnership (PPP) arrangements, while building a strong framework for sustainable management of these resources. IFAD's value addition is derived from its rich experience in promoting public-private-producer partnership (4P) joint-ventures^[26] as a mechanism to include smallholder fishers in deep sea fishing and related post-harvest loss reduction infrastructures.

AFDP's design was informed by lessons from IFAD's experience in Tanzania and other countries in the region, as well as lessons learned from ASDP I. These include:

Thinly spread resources result in fragmented impact that is hard to measure ASDP I faced implementation challenges and generated limited impact due to the scale and complexity of implementing a new programme nationally. An analysis of the World Bank portfolio in Tanzania^[27] also shows that the most effective programs were generally specific, large investments or interventions, geographically targeted, backed with sound analytics, and supported by robust systems for quality assurance and quality control. AFDP investments will be: (i) programmatically focused on the two ASDP II priority areas; (ii) thematically targeted to the crop seeds and fish value chains, and (iii) geographically focused in the arid and semi-arid lands in central, western and lake zones areas as well as in the coastal areas, which are particularly vulnerable to climate change and where pockets of food insecurity persist.

Mainstreaming business approach to agriculture. An evaluation of ASDP I showed that agriculture value chains are underdeveloped and fragmented. AFDP will contribute in bridging the gap between agricultural production and marketing, with a focus on business innovations benefiting women and youth along the value chain. AFDP design builds on lessons learned from IFAD projects in Tanzania, including the closed 'Rural Micro, Small and Medium Enterprise Support Programme' (MUVI: 2007-2016) and MIVARF. It also builds on IFAD's global and extensive experience in promoting pro-poor agricultural value chains. AFDP adopts an inclusive agricultural value chain approach that, beyond productivity and production, invests in linking smallholder producers to more profitable markets, and building their capacities to graduate from artisanal fishing and subsistence farming to semi-subsistence/semi-commercial status, practicing farming as a business.

Promoting producers-public-private partnerships (4Ps) models. A substantial number of smallholders' associations and

cooperatives have the potential to engage in business partnerships, but they are often marginalized from higher-value markets due to high unit production costs, poor infrastructure, and limited access to credit and technical assistance. IFAD has extensive experience in 4P business models^[28] to leverage financing, promote risk sharing, enhance innovation and market access as well as increase the inclusion of smallholders and their organizations in profitable seed and fish value chains.

Addressing core challenges of increasing supply and farmer access to quality seed In Tanzania, the use of improved seeds (especially private hybrid maize varieties) has increased dramatically since 2008, primarily pushed by the national agricultural input voucher scheme (NAIVS/AFSP, 2008-13), targeted on maize and rice in the high potential highland areas, while more vulnerable agro-ecological zones and companion crops remained neglected. Despite support provided over more than 20 years, this has not addressed systemic and structural challenges of seed supply (below five percent of needs). The design of AFDP takes into consideration key lessons and conclusions from IFAD’s experience on Supporting Smallholder Seed Systems^[29], including: (i) better understanding of seed value chain, stakeholders’ needs and markets; (ii) focusing equally on seed supply as well as demand and use; (iii) ensuring longer-term support to be able to produce sufficient quantities of early generation seed (breeder, foundation and registered); (v) investing in irrigation systems to avoid poor quality during seed production due to drought; and (vi) strengthening national seed certification agencies.

Scaling up innovations in aquaculture. IFAD has built a wealth of experience in the region, with large aquaculture investments in Kenya and Mozambique, from which AFDP can draw useful lessons and linkages. The key lessons from IFAD’s aquaculture projects in this region are: (i) need for comprehensive approach to capacity building at both institutional and farmers levels to address constraint in aquaculture technical skills and services; (ii) working through farmer organizations (e.g. cooperatives, clusters and groups) is more effective to promote learning, extension services and input access; (iii) incorporate development of aquaculture input systems (fingerlings, feed, water supply) as these are critical constraints; (iv) a business approach to aquaculture is important for sector sustainability, by linking smallholders with aquaculture MSEs, input suppliers, markets and other services, and (v) attention to climate change adaptation measures that strengthen fish farmers resilience. AFDP design has given attention to these aspects, however taking into consideration Tanzania’s unique context.

2. Project Description

C. Project objectives, geographic area of intervention and target groups

The AFDP’s **overall objective** is to “contribute to inclusive food systems for improved livelihoods, food security, nutrition and resilience”. In this regard, its development objective is to “enhance sustainable productivity, climate resilience and commercialization of selected crop seeds, fisheries and aquaculture”, while devoting particular attention to women empowerment and youth participation. This will be measured by four core indicators, namely: (i) percentage of target households reporting increased average annual net income by 30 percent; (ii) percentage of households reporting an average 25 percent increase in production of maize, beans, sunflower, seaweed and fish; (iii) at least 60 percent of women 15-49 years of age who consume at least 5 out of 10 food groups; and (iv) at least 40 percent of households reporting adoption of environmentally sustainable and climate-resilient technologies and practices.

AFDP is fully aligned with the 2016-2021 Country Strategic Opportunity Programme (COSOP) for Tanzania, whose overall objective is to contribute to transforming Tanzania’s agricultural sector towards higher and more sustainable productivity, commercialization and increased smallholder farmer incomes for improved livelihoods, food security and nutrition, and overall resilience. The AFDP will contribute in implementing three of the four strategic objectives (SO), namely: (i) SO1 - Improved institutional performance, coordination and accountability to IFAD target groups and their organizations at central and local levels; (ii) SO2 - More inclusive and resilient value chains of priority commodities, driven by expanded and sustainable access to markets and financial services and by a more inclusive private sector; and (iii) SO3 - Improved climate-resilient, productivity-increasing technologies in priority crop-livestock-fishery commodities.

Programme area. AFDP will focus on drier AEZ with unimodal rainfall of the central Tanzania Mainland corridor, targeting sustainable intensification and diversification of more vulnerable farming systems (crops and aquaculture), highly susceptible to climate variability and change. The programme will also promote sustainable utilization of fisheries resources for improved livelihoods of coastal fishing communities in Zanzibar and Mainland Tanzania. The programme targets a total of 41 districts (out of 169 districts) in 11 regions (out of 31 regions) as well as four marine conservation areas in Unguja and Pemba, Zanzibar (Table 2).

Table 2: Programme target areas

Zones	Regions/Marine Conservation Areas	Districts
	Morogoro (5)	Mvomero, Kilosa, Kilombero, Gairo, Morogoro Council
	Manyara (4)	Kiteto, Mbulu, Babati, Hanang

Central	Singida (5)	Manyoni, Ikungi, Singida, Mkalama, Iramba
	Dodoma (6)	Kongwa, Kondoa, Chamwino, Bahi, Mpwapwa, Chemba
	Tabora (3)	Igunga, Nzega, Uyui
Lake zone	Mwanza (3)	Misungwi, Kwimba, Sengerema
	Shinyanga (2)	Kahama, Shinyanga
	Geita (3)	Bukombe, Geita, Chato
Coastal	Tanga (5)	Handeni, Kilindi, Pangani, Muheza, Mkinga
	Pwani (4)	Bagamoyo, Mkuranga, Kibaha, Mafia
	Lindi (1)	Kilwa
Zanzibar	Marine conservation areas Unguja	Tumbatu, Mnemba – Chwaka Bay, Menai Bay
	Marine conservation areas and Pemba	Pemba channel

Target groups. The total number of direct AFDP beneficiary households is 260,000^[30] corresponding to approximately 1,300,000 persons. This will include:

200,000 smallholder farming households (corresponding to 1,000,000 persons) accessing, using and maintaining improved seeds for preferred varieties of maize, sunflower and beans/pulses production in the target area.

1,000 small and medium scale seed producers (enterprises, cooperatives, individuals, etc.) and agro-dealers (enterprises, cooperatives, village sellers) participating in seed distribution and marketing (seed value chains), including youth and women. About 20 percent (or 200) will be crop farmers utilizing certified quality seeds.

18,000 artisanal fishers along the Indian Ocean coast of Tanzania and Zanzibar, who will be supported to use sustainable fishing practices and increase the value from artisanal production.

30,000 artisanal fish processors and traders who will be targeted by the investments in postharvest loss reduction and fish value chain development

6,000 small scale aquafarmers, with 80 percent or 4,800 also benefiting from certified seeds of maize, beans/pulses and sunflower;

15,000 smallholder seaweed producers and processors (80 percent women). About 40 percent (6000) will also benefit from interventions in sustainable fishing practices;

1,000 unemployed youths who will find employment opportunities in the fish processing plants and postharvest infrastructures (ice-making, cold storage, dryers)

Beneficiary profiles. AFDP targeting mechanism will be based on farm typology that was developed for testing and designing agricultural interventions that adequately address the needs of different types of farmers in Tanzania^[31]. This typology is based on a combination of productivity variables, economic variables, environmental variables, social variables and human capital variables. AFDP will target four household types: (i) Type 1: Poor food insecure households; (ii) Type 2: Moderately food insecure households; (iii) Type 3: Food secure, semi-commercial households; and (iv) Type 4: Food secure, market oriented households.

AFDP's target groups are composed of poor food insecure households (severe and moderate) involved in crop farming,

aquaculture and fishing with low level of production. These farmers lack access to quality seeds and other inputs to increase their production for consumption and to make their production market-oriented. These farmers own an average of ≤2ha of land or one to two fish ponds and have no access to proper extension services and improved-quality seeds and inputs for market-oriented production. In the fishing sector, they are mostly concentrated in the inshore areas and use unsustainable and illegal gears and methods as a means of survival, contributing to high fishing pressure. On the other hand, vulnerable women in the fish value chain mostly trade on the small pelagic species (“dagaa”), and incur high post-harvest losses especially due to environmental, logistical and infrastructural constraints. These groups are in the bottom quintile of the wealth distribution. They will form 80 percent of AFDP beneficiaries, while the food secure, semi-commercial households constitute 15 percent and the more endowed, market-oriented households will form 5 percent of AFDP beneficiaries.

Targeting strategy. The targeting mechanism will seek to ensure equitable participation in, and benefits from, Programme activities and opportunities for women, men, youth and other vulnerable groups. Direct targeting mechanisms will ensure the identification of key beneficiaries, based on set criteria and validation, participation of vulnerable groups in planning, implementation and evaluation, including female-headed and youth led households. AFDP targets to reach 50 percent women and 30 percent youth through its interventions. In addition, AFDP will promote the economic and social empowerment of male and female groups through social mobilization. The targeting strategy will include:

Geographical targeting will use a cluster approach to identify eligible wards and villages, based on poverty data and climate change risk and vulnerability assessment. Criteria used will include: (i) rural poverty and vulnerability of local farming/cropping systems to (semi)arid agro-ecological conditions, including increased impact risks related to climate variability and change; (ii) potential for productivity, food security and household income for target value chains and viable small and medium private sector actors and markets; (iii) mobilization and strengthening of existing farmer groups and associations; and (iv) use of national decentralized agricultural extension system in local communities in need of extension services and education in order to increase the productivity and resilience of their cropping systems and livelihoods.

Direct targeting mechanisms will ensure the identification of key beneficiaries, based on set criteria and validation, participation of vulnerable groups, including female-headed and youth led households. AFDP targets to reach 50 percent women and 30 percent youth, through its interventions. AFDP will ensure programme interventions are inclusive and seek support on how best to address gender and age constraints in the value chains in order to support women and youth.

Self-targeting measures will ensure that Programme interventions respond to the needs and priorities of the target groups and especially women as seed production and marketing, fish catching and large-scale trading is mainly male-dominated. The inclusion of small pelagic species (“dagaa”) ensures the inclusion of women who dominate the processing and trade of this fish. The selected productive activities along the aquaculture value chain will be suitable for all target groups, in particular women and youth considering their potential for processing and value-adding opportunities.

The Programme will develop a **Gender, Youth, Nutrition and Social Inclusion** strategy and implementation plan that will provide strategic guidance to AFDP staff to mainstream gender equality, youth empowerment, nutrition and social inclusion. AFDP will promote social empowerment of socially excluded groups such as poor and food insecure women-headed households, youth, persons with disabilities, persons with HIV and other vulnerable groups as identified by the programme. The programme will promote the economic and social empowerment of male and female groups through social mobilization and the use of Gender Action Learning System (GALS), household and gender methodologies and tools to address gender unequitable norms and practices.

The Programme will support women through: (i) economic empowerment for enhanced access to crop seeds and fisheries-based production and value addition systems by encouraging young women into non-traditional aspects of the seed and fisheries value chains, access and control of productive resources, finance and services; (ii) balanced workloads due to increased resilient crop yields through use of labour and time-saving technologies such as solar dryers for *dagaa* and sea weed and energy saving cooking stoves, to encourage shifts towards equitable sharing of workload burden within the households; and (iii) support to women’s voices being heard in decision-making, at household, in programme activities and community level, will be implemented through leadership trainings and mentorship of women in farmer associations and co-operatives and by enforcing 50 percent representation of women in committees and leadership positions.

Youth empowerment through entrepreneurship and jobs. AFDP will encourage participation of young women and men as seed producers, fish farmers, technicians, agri-input specialists, lead farmers, market information specialists to provide information to agro-traders, processors and other stakeholders in the value chains. AFDP’s investments in postharvest infrastructures (fish processing plants, ice making, solar drying, etc.) offer direct decent employment opportunities for the youth. Similarly, investments in agro-dealer networks, fingerlings production present entrepreneurship opportunities for the youth in several ways.

Programme approach: The Programme will use a phased approach by building and consolidating impacts in selected districts (clusters) in the drier central Tanzanian AEZ, before gradually adopting a demand-driven scaling-up. While seed production/producer and distribution/agro-dealer support activities will cover all selected regions from the beginning on (with gradual activity intensification), the intensification of agricultural extension activities will initially target selected districts (within target regions) with plans for scaling up gradually starting in Year 1 with one or two districts in each of the targeted regions and scale up gradually over implementation period to reach all targeted districts in Year 4 (2024). The final choice of district sequencing will be done at the inception stage through stakeholder consultative processes.

The Programme will implement two cross-cutting interventions or enablers that will be mainstreamed in the two technical components and sub-components. These are: (i) facilitating access to finance; and (ii) Improving community nutrition and practices

Facilitating access to finance: The Programme will partner with the Tanzanian Agricultural Development Bank (TADB) to facilitate access to adapted and affordable finance by the various actors in the crop and fish value chains. These will include: small scale producers, SMEs/Cooperatives along the value chains, as well as large agri-enterprises that provide key services to the Programme beneficiaries (off-takers / processors, input suppliers, etc.). AFDP investments related to access to finance will focus on: (i) financial literacy and capacity building of the programme beneficiaries, (ii) technical assistance to TADB and

its partner FIs specific to the value chains targeted by the Programme, in complement to technical assistance by other TADB partners including AFD, and (iii) promoting specific products designed for the women and youths. These instruments will include: (i) the Smallholder Credit Guarantee Scheme, initially funded by IFAD through MIVARF, which is proving very attractive for the financial sector, with agreements already signed with eight financial institutions, including the two biggest commercial banks (CRDB and NMB), and (ii) concessional credit lines to be established with the support of other development partners like the French Agency for Development (AFD). AFDP will leverage on TADB and the private sector to pilot and scale-up digital solutions that will positively impact rural young women and men.

Improving community nutrition and practices. Building on IFAD's extensive portfolio of projects and tools on gender, social inclusion and nutrition, AFDP is designed within the framework of nutrition-sensitive investments^[32]. The programme will integrate nutrition interventions across the programme sub-components targeting approximately 30 percent of total beneficiaries: smallholder crop farmers, artisanal fishers, aquafarmers and fish traders. The selection of districts, wards and villages to be targeted for improved nutrition interventions will be informed by a detailed nutrition analysis to be undertaken at baseline.

The Programme will leverage ongoing nutrition and community development projects and interventions as well as existing structures at the national and district levels to apply the following nutrition pathways: (i) increased year round availability of food and household consumption of safe and nutritious varieties of maize, protein rich beans/pulses, sunflower, fish and seaweed, dissemination; (ii) promotion of integrated homestead food production (notably kitchen gardens) for diet diversification and income generation; encouraging farmers to enhance pulse production and adopt kitchen gardens for fruits and vegetables; (iii) reduction post-harvest losses, including training farmers for safe home storage, home processing and food preservation to increase shelf-life; (iv) targeted nutrition education for household members and communities will be integrated through the programme interventions, including farmer field school, aquaculture field and business schools as well in training of fish cooperative societies; and (iv) social behaviour change communication campaigns to encourage adoption of nutritious foods especially amongst vulnerable populations such as poor and women-headed households, pregnant and breastfeeding mothers, households with children under 5 years and adolescents girls.

D. Components/outcomes and activities

AFDP is structured around two mutually reinforcing and interlinked components and in doing so, it mirrors ASDP II priority programme areas. The two AFDP components are: Component 1: Enhanced agricultural productivity of crop seeds and fisheries; and Component 2: Improved market access, value addition and private sector development. A third component focuses on Programme Management and Coordination.

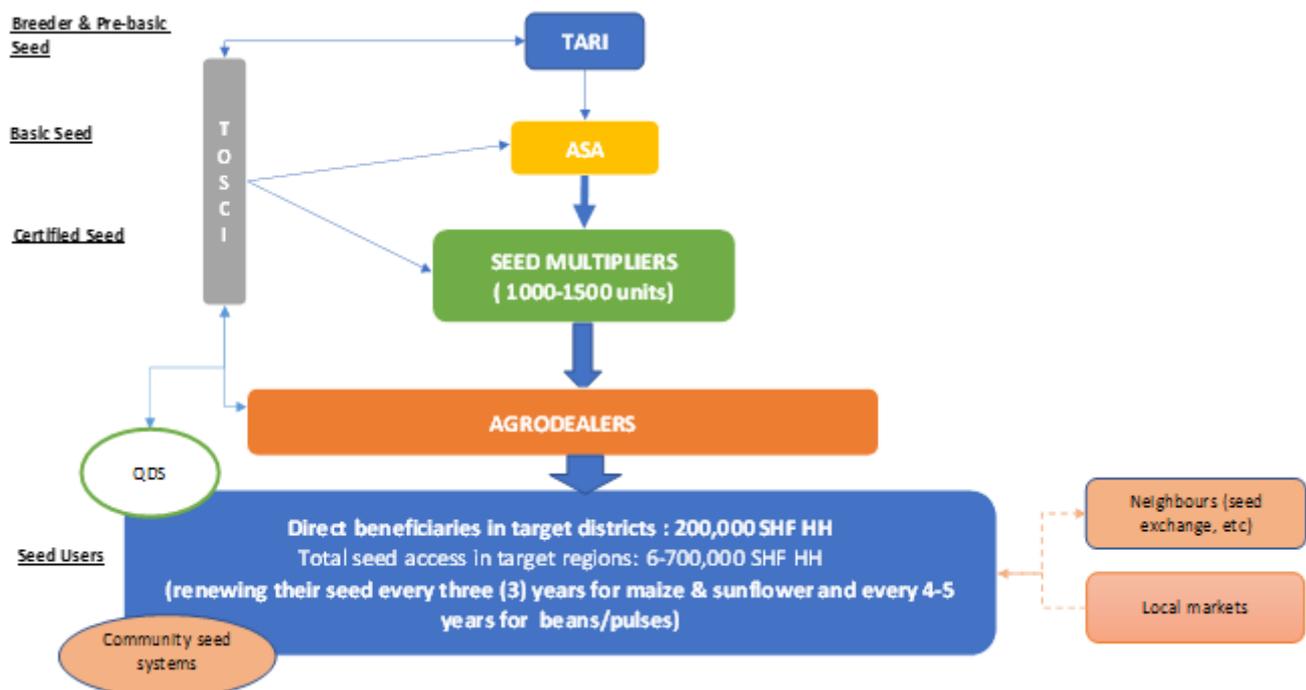
Component 1. Enhanced productivity of crop seeds, fisheries and aquaculture

The expected outcome of this component is "Increased climate-resilient productivity and production from crop seed and fish value chains. It will be achieved by focusing investments in two sub-components, namely (i) crop seed systems development and (ii) fisheries and aquaculture development.

Subcomponent 1.1 Crop seed systems development

This sub-component's objectives are to ensure suitable supply and access to quality seed of adapted productive varieties of maize, sunflower and beans/pulses, to feed smallholder innovation use (re. sub-component 2.1) for more productive and climate-resilient food and market production systems for selected crop value chains in the target areas. To strengthen more efficient seed systems with adequate and sustainable funding, the programme will contribute to strengthen key functions of seed value chains (pre-basic, basic and certified seed classes) to enable a sustainable annual offer of quality certified seeds for mainly Open-Pollinated Varieties (OPV), adapted to the demand and based on farming systems sustainability and resilience. AFDP investments in seed systems development is summarized in figure 1:

Figure 1: Summary of seed system production flow and Programme targets.



To this end, the programme will support the following five priority areas:

National seed demand and supply coordination. The Programme will provide targeted support to the Ministry of Agriculture (MoA) and the Tanzania Seed Traders Association (TASTA) to enhance: (i) continued update for future seed demand and supply planning (adjustment of national seed road map and performance monitoring and evaluation), while integrating specific seed requirements of target area (see local seed fora sub-component 2.1); (ii) broaden user awareness/information on quality seed use and varieties adapted to agro-ecological zones and consumer/market preferences; (iii) strengthen seed production and distribution networks (including PPs) driven by market and smallholder farmer needs (iv) streamline partner functions, follow-up and propose policy innovations (fight counterfeit seeds); and (iv) facilitate professional seed producers (individuals, cooperatives, upgraded QDS producers) access to adapted technical information and financial products and services, etc., contributing towards sustainable seed systems.

Innovation development and Early Generation Seed production. AFDP will provide targeted support to TARI for adaptive research and targeted breeding/selection programmes towards: (i) developing productive and climate-risk resilient varieties for the arid and semi-arid agro-ecological zone; and (ii) supply of early generation seeds (EGS), including maintenance/purification of breeder lines and the production of pre-basic seeds to meet the future demand (varieties and quantities)[33] of seed multiplication companies and seed farmers in the target area for maize, sunflower and beans/pulses. Special attention will be given to participative selection of improved varieties (mainly OPV but also adapted resilient hybrids[34]) adapted to target agro-ecological and farming conditions of vulnerable farmers, prioritizing traits such as high and resilient productivity/yields, tolerance to pests and diseases, improved nutrient composition and consumer acceptance, and adaptation to climate variability and change conditions.

As a means of improving TARI performance and outcomes, AFDP will support investment in: (i) upgrading facilities for EGS (breeder and pre-basic seed) production, including irrigation facilities (2 pivot irrigation systems for a total of 25 ha), farm and seed post-harvest equipment, seed storage facilities, scientific/laboratory equipment, field vehicles for research in TARI Ilonga/Kilosa (maize and sunflower) and Seliani/Arusha (maize and beans/pulses); (ii) strengthening institutional capacity and technical expertise in maize, sunflower and bean/pulses varietal improvement and innovative production practices (i.e. CSA); (iii) research costs for strategic breeding and participative varietal selection activities; (iv) enhancing scientific collaboration with regional and international knowledge centers, especially in germplasm access and market-oriented seed systems development; (v) promotion and awareness (pre-vulgarization) of improved varieties and technologies; and (vi) strengthening emerging partnerships between TARI and private seed producers/companies, including for variety licensing.

Basic seed multiplication. AFDP will support the Agricultural Seed Agency (ASA)[35] to play its relay role in high quality basic seed multiplication for preferred maize, sunflower and beans/pulses varieties. This step will use TARI supplied pre-basic material (mainly OPV) adapted to cropping systems of the target zone to feed the next step of further multiplication in the subsequent year (see bulking up certified seed) towards responding to the demand of the farming community for certified seeds in the target area. As a means of improving ASA performance and sustainable production of basic seeds (in response to demand), AFDP will support targeted investment for strengthening physical, technical and management capacities towards building sustainable seed systems, including: (i) securing annual basic seed production by upgrading/completing of irrigation infrastructures[36] for not exceeding 100 ha each in ASA farms at Msimba (Kilosa/Morogoro) and Kilimi (Nzenga); (ii) construction and/or upgrading of selected seed farm work facilities (seed stores, dry shed, garage facilities, farm offices, field residential and training facilities); (iii) renewing of targeted field production equipment (adapted implements for land preparation, seeding, plant protection and harvesting); (iv) supplying required seed processing treatment plant at both farms; (v) transport equipment for field supervision and seed transport; and (vi) capacity strengthening in seed production and treatment, business development and monitoring and evaluation.

Bulking-up certified seed. The next step of the seed value chain is the bulking-up of basic seed (produced mainly by ASA) to avail certified seed for distribution/sale to users in the target area and respond to local producer's needs (renewed every 3 years). Based on current production levels, the production levels of different seed classes will progressively increase in quantities (increase of 5 percent in Y1, 15 percent in Y2 and 25 percent in following years) to reach the targeted annual seed production levels for certified (Year n), basic (Year n-1) and pre-basic seed (Year n-2). Overall, certified seed availability for the target area is expected to reach a sustainable annual certified seed production levels of 7500 MT maize, 3000 MT sunflower, 2000 MT beans and 500 MT pulses by year 6. Simultaneous to availed seed quantities, proposed varieties will adapt gradually to smallholder preferences for food, adaptation to local farming systems, and market requirements (including 10-15 percent for hybrid varieties).

AFDP will support ASA to facilitate innovative productive PPPs in close collaboration with TASTA, towards increased private sector participation in the seed industry development by: supporting (matching grants registered private seed enterprises and/or seed farmer cooperatives, to include: (i) supply of quality basic seed (adapted varieties and quantities) for a period of 2 years; (ii) providing specialized technical and management support services and training for seed production and processing of certified seed (in close collaboration with regional MoA and TOSCI officers); (iii) enabling full implementation of the certification process by TOSCI; (iii) facilitating, where possible, partnerships and commercial agreements with private seed producers/SMEs to use ASA facilities (land, irrigation); (iv) payment of initial certification operations at the level of 100 percent, 75 percent, 50 percent and 25 percent respectively in year 1 to 4; and (v) facilitating seed treatment support services at cost (sorting, treating packing, etc.).

Seed quality control and certification. AFDP will provide targeted support to Tanzania Official Seed Certification Institute (TOSCI) for strengthening its role in seed quality control and certification, to ensure availability of quality seed of improved varieties to farming communities, while also implementing Distinctness, Uniformity and Stability and National Performance Trials testing of new varieties prior to the integration into the official national crop variety catalogue. As a means of improving TOSCI's performance and sustainability in supplying regulatory services for the seed sector outcomes, AFDP will support investment in: (i) upgrading operational and laboratory facilities at the National seed testing laboratory (Morogoro) and zonal levels (NO-Arusha, NW-Mwanza) including infrastructure rehabilitation and equipment; (ii) enhancing technical and management capacities of seed inspectors, samplers and analysts; (ii) strengthening seed quality control and certification procedures and guidelines; (iii) promoting third party seed certification and data management and build a cadre of private (young and female preference) seed inspectors; (iv) rolling-out of e-tags for digitized authentication of quality seeds by farmers and reduce fake seeds (in collaboration with other partners); and (v) enhancing overall technical and management/business capacities of TOSCI at national and regional levels.

Subcomponent 1.2. Sustainable fisheries and aquaculture development

This subcomponent will support Tanzania mainland and Zanzibar government's strategic objective of promoting sustainable fish production systems from both capture fisheries and aquaculture. The Programme's interventions under this sub-component will support the livelihoods of 18,000 artisanal fishers, 6,000 fish farmers and 15,000 seaweed producers who are dependent on fisheries and aquaculture. More specifically, the investments will result into (i) increased fish production and productivity; (ii) increased and sustainable income for fisher-folks; (iii) Improved nutrition as a result of increased consumption of fish and fish products; (iv) Increased access the recommended gears suitable for sustainable fishing, ideally to replace destructive gears and aiming to reduce the fishing effort; v) enhanced use of selective fishing practices by the use of Fish Aggregating Devices (FADS); and vi) improved utilization of catch and reduce post-harvest losses.

Promoting sustainable artisanal marine fisheries production. The programme will support sustainable utilization of fisheries resources in the country's inshore waters, supporting the livelihoods of about 18,000 small-scale fishers in this zone. The objective is to promote sustainable fishing practices and contribute to the reduction of fishing pressure, encourage a shift in effort from overfished areas, sensitive habitats such as coral reef area and inhibition of certain destructive fishing methods. The programme will (i) promote the use of recommended gears suitable for sustainable fishing; (ii) promote the use of Fish Aggregating Devices (FADS); (iii) support increased access to ice by artisanal fishers to reduce postharvest losses; and (v) strengthen fishers' co-operative organizations and streamline the marketing arrangements and processes from sea to market in order to enhance value of catch. AFDP will capitalize on the achievements, physical assets and co-management approaches of coastal resources in both mainland and Zanzibar of the South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFISH), a World Bank financed regional Project, which aims at improving the management effectiveness of selected priority fisheries at regional, national, and community levels.

Private-Public-Producer partnerships (4Ps) joint ventures for deep sea fishing The programme will support the development of a semi-commercial fishing joint venture through 4Ps^[37] arrangements between the respective government fishing agencies in Tanzania Mainland (TAFICO) and Zanzibar (ZAFICO), private sector investors and small-scale fishers' cooperative societies. The Programme makes provision^[38] (USD 8.36 million) to finance the acquisition of eight (8) fully equipped long line fishing vessels (4 of overall length 25m with a capacity of about 69 tons of fish for Tanzania Mainland and another 4 of overall length 18m, with a capacity of 35 tons of fish for Zanzibar), starting with four vessels (two each for Zanzibar and Mainland) in the first year and expanding to eight the following years, when it is expected that the programme will have gained more experience in operationalizing 4Ps and increased technical capacity and knowledge about the stock status. The integrated fish processing plants will be designed and equipped with modern technologies to meet the regional and international market standards.

AFDP will promote 4P joint-venture shareholding schemes or supply-based arrangements^[39] as a mechanism to include smallholder fishers and fish traders in deep sea fishing and fish processing plants. To this end, the programme will finance technical assistance (TA) in form of 4P advisors/facilitators to support TAFICO and ZAFICO in developing a concept note and prefeasibility study for a small-scale PPP^[40]. The 4P advisors/facilitators will act as "honest broker" to assist in establishing and negotiating 4P business models and related contractual arrangements. TA will support fisher cooperative societies in becoming better organized and to play an active role in the negotiations and partnership arrangements. Between 30-40 percent of the catch is expected to be used in the domestic markets through small scale fishers and other actors involved in

the fishery value chain including youths and women. On the other hand, small scale fishers will supply bait to the vessels which require sufficient amount of baits during its operations. These investments will generate employment directly and indirectly for about 1 000 youth along the tuna value chain, and will provide services and market outlets to over 15,000 artisanal fishers and their cooperative societies to supply fish and baits.

As required by the 2020 Public-Private Partnership (PPP) Regulations, the private-sector partner will be selected through a competitive or rigorous selection process that ensures transparency and objectivity. TAFICO and ZAFICO shall develop a concept note for PPP and conduct a comprehensive feasibility study to confirm whether the 4P investments are technically, economically, commercially, financially, environmentally, socially and legally viable, and fiscally affordable. The concept note and prefeasibility study shall include, among others: (i) proposals for partnership modalities; (ii) economic feasibility and financing analysis, (iii) marketing and commercial assessment; and (iv) assessment of risks and stakeholder's analysis. In parallel to the feasibility study, an Environmental and Social Impact Assessment (ESIA) will assess the potential environmental, climate related and social impacts of the proposed marine fisheries operations and ancillary facilities.

Increasing aquaculture productivity and output. AFDP will intervene through developing the capacity of Aquaculture Development Centers (ADCs) (Kingolwira, Mwamapuli and Rubambagwe) to supply high quality Tilapia and catfish seeds and deliver effective extension services. The programme targets to raise the level of Tilapia fingerlings production to an additional 25 million fingerlings, and 10 million of catfish per year at the end of the six-year investment period. Fresh-water aquaculture interventions under AFDP will focus on: (i) rehabilitating/developing the basic infrastructure for hatchery production (including water supply systems, access roads, hatchery facilities, feed mill and equipment etc.) in three ADCs (Kingolwira, Mwamapuli and Rubambagwe); (ii) developing the Kingolwira ADC to become a breeding nucleus which will produce quality broodstock to be multiplied in other ADCs and private hatcheries for mass production of fingerlings; (iii) establishing and strengthening aquaculture clusters targeting about 6,000 aquafarmers; and (iv) developing a national aquaculture information system. The Programme adopts a cluster growth model, through which the ADCs will nurture and support growth of private hatcheries and aquaculture service providers.

The Programme will finance the establishment of aquaculture field/business schools to facilitate learning on innovation and best management practices, and access the following functions and services: (i) input supply - bulk-sourcing of production inputs (fish seeds, feeds, equipment); (ii) extension and advisory services within the cluster arrangement; (iii) coordinated production and collective marketing to take advantage of different market opportunities and to stagger the stocking of their ponds so as to supply a continuous amount of fresh produce throughout the year; and (iv) local aquaculture governance and stakeholder engagement and policy advocacy. In addition, the programme will finance the establishment of two commercial fish feed plants, preferably by an existing private livestock feed miller who will partner with ADCs and fish farmer cooperatives to produce fish feed to supply the established clusters. The clustering will be carried out with a set of criteria including: (i) concentration and commitment of farmers engaged in the production and marketing of fish, (ii) proximity to each other for clustering to ensure they are not widely scattered across the districts; (iii) proximity to markets and to the ADCs; (iv) potential for commercialisation and expansion of aquaculture; and (v) poverty and inclusion (youth and women) targets set by the programme.

Increasing seaweed productivity and output AFDP will invest in (i) carrying out tissue culture and micro-propagation technologies to produce at least one ton annually of *cottonii* to be multiplied in farmers plots; (ii) promoting of new seaweed production methods supporting about 15 000 women farmers to more deeper waters where *E. cottonii* farming can successfully be undertaken; and (iii) improving and intensifying the cultivation of *E. spinosum* to increase current production from 400Kg to up to 1.6 tons per farmer annually, increasing farm size from the current 50 ropes units to on average 400 ropes units per farmer; and (iv) training of over 1,000 youth on mariculture in Zanzibar. The programme will finance the rehabilitation and equipment of ZARI laboratory facilities for tissue culture micro-propagation, field testing and large scale on farm multiplication by trained farmers, small boats and hand pulled plastic barges and /hand pulled for women groups and cooperatives.

Component 2. Improved market access, value addition and private sector development

This component's expected outcome is "Improved marketing and value addition of crop seeds and fish products". It will be achieved by combining investments in crop seed business development and fish market development and value addition.

Subcomponent 2.1. Quality seed use and business development

Based on sustainable seed supply of adapted varieties (see subcomponent 1.1), the aim is to strengthen flows and use of improved seeds by engaging partnerships with local agricultural sector actors (public, associative and private) to respond to poor smallholder farmer specific needs. Quality seed access targets about 25 percent of local farming activities and allow to replace farmers OPV seed for priority value chains every three years, while strengthening their seed maintenance capacities. Towards enhancing quality seed use and business development in the target area, AFDP will support four action areas: (i) regional multi-stakeholder innovation platforms; (ii) promoting supply and facilitate access to improved seeds; (iii) promoting local extension services for broad-based farmer awareness, demand use for improved seeds; and (iv) facilitating synergies for effective market linkages with grain buyers and processors.

Regional multi-stakeholder innovation platforms. AFDP will support zonal multi-stakeholder innovation platforms targeting key associative, public and private local value chain stakeholders to foster coordinated stakeholder planning, coordination and monitoring of seed demand, supply and use of preferred varieties. Regional platforms will contribute to identify farmers demand and adjust the seed multiplication on appropriate locally-adapted varieties that are more resilient to climate variability and change, the evolution of pests and diseases and local edaphic conditions, while simultaneously promoting CSA practices. Programme interventions will: (i) facilitate the organization of annual stakeholder platforms of seed value chain actors in each target region of the Central Tanzanian corridor; (ii) coordinate planning, coordination of implementation and monitoring of regional seed use and promotion activities in selected value chains (seed fairs, etc.) also using digital technologies; (iii) specialized technical and economic/market studies on seeds sector; and (iv) promote the emergence/strengthening of district and regional professional seed producer and distributor organizations around the selected crops/value chains.

Promoting supply and access to improved seeds The programme interventions will strengthen the sustainable development of agro-dealer networks (SMEs and local seed farmer organizations) in the Central Corridor of Tanzania, to improve local smallholder access to quality (certified) seeds of preferred improved varieties and adapted technical practices and information. In complement of common local extension services supported in the ASDP II framework, AFDP will provide specific support to: (i) enhance access to seed markets and partnerships of local agro-dealer networks with national/regional seed producers; (ii) strengthen capacities of regional and district agro-dealers to support district level agro-dealer network consolidation and development (as required); (iii) promote further development of the last link for seeds and inputs to reach local farmers, including technical/business support for village input shops/outlets managed especially women and youth; (iv) facilitate grouped purchases of quality seeds and agricultural inputs by local farmer organizations; and (v) strengthen adapted technical information diffusion to farmers by distribution of information material (pamphlets, posters etc.) in agro-dealer shops and varietal demonstrations (2/district for 3 years) established at proximity agro-dealer shops. Digital technologies will be leveraged for marketing of seed and facilitating seed purchase by small holder farmers[41]

Promoting farmer awareness, demand and use of improved seeds.The Programme aims at reaching at least 200,000 smallholder farming households in 40 districts[42] within 10 selected regions in the Central Tanzania Corridor to access, use and maintain improved seeds of preferred varieties for maize sunflower and beans/pulses production. Quality seed of improved varieties form the basis of sustainable intensification and productivity (20-30 percent on average) of maize-sunflower-pulses based cropping systems, especially for poor rural households in low potential areas, especially when combined to integrated soil fertility (organic and mineral) and pest & disease management and CSA practices to improve their resilience.

To this end, AFDP will promote farmer awareness by enabling district extension facilitation teams to activate district & ward agricultural extension networks to promote demand and use of improved seed (and inputs) by: (i) enhancing farmer exposure to innovative technologies (varieties, best practices for on-farm seed maintenance and preservation[43], CSA practices), through participatory varietal evaluation, including the use of farmer field schools (FFS), on-farm demonstrations and farmer field days incorporating nutrition education and training sessions; (ii) promote seed and food fairs, and seed sample distributions for farmer self-testing in own production field, farmer exchange, etc.; (iii) empowering local farmer organizations to provide sustainable support services on quality seed management through village-based advisors (M/F local farmer leaders); (iv) facilitate large scale access to information on quality seeds and varieties, disseminated through digital platforms and (v) facilitating access to financial services for the farmers and their organizations for grouped seed and other input purchase.

Facilitating synergies for effective market linkages with grain buyers and processorsTo further facilitate the development of market responsive seed system, the Programme will promote technical and business synergies through close collaboration with local agribusiness involved in targeted seed value chains, including among others: (i) large/medium-scale sunflower oil extraction businesses for promoting contract farming, pricing agreement on product quality, use cake for animal/fish feed, etc.; and /or (ii) commodity whole sellers especially for pulses (but also maize) and linking with structured trading platforms for small holder farmers like G-Soko by the East Africa Grains Council for maize and beans[44] AFDP will finance: (i) technical and business mapping studies (regional and AEZ level) to identify production areas/cooperatives and potential off takers and processors; (ii) stakeholder dialogue and concertation for promoting partnerships with agri-business and other value chain actors by contract production, pricing/quality agreements, etc. with farmer organisations, (iii) specialized technical services and management assistance to young entrepreneurs and cooperatives; (iv) diffusion of technical and business and market information.

Financial instruments managed by TADB will be leveraged to finance off takers grain businesses and processors, but also financial services for the farmers and their organizations for input purchase (see section on financing). To this end, the programme will enhance co-benefits and promote collaboration with on-going programmes active in the same area, including AMDT (Agricultural Market Development Trust) a flagship 'Market for Poor' that creates a platform to build the best practices especially in the sunflower value chain, and the Pan African Bean Research Alliance for the implementation of bean business corridor through lead firm model nested in private public consortium.

Sub-component 2.2. Fish market development and value addition

Reduce fish postharvest loss. The Programme will target investments in infrastructure and technologies for reducing postharvest losses and value addition, encouraging women and youth participation. These investments will generate employment directly and indirectly for about 1,000 youth along the tuna value chain, and will provide services and market to over 30,000 artisanal fishers, fish processors and traders. The Programme will invest in a cost-sharing with the fish cooperative societies in (i) eight ice-making plants to ensure fishers and traders have access to ice all through the fish value chain; (ii) three cold-supply chain facilities and fish processing plants; (iii) ten solar dryers/tents for seaweed and small-pelagic "dagaa"; and (iv) 80 dagaa drying racks. The Programme will also finance the rehabilitation of well-designed, user friendly and multipurpose modern fish markets in Pangani and Bagamoyo fish landing areas to improve quality of fish onshore. The design and operational modalities will adapt similar fish markets built by GoT in Ferry markets in Dar es Salaam. These markets have in place management committees and user-fee modalities, which will be adopted by the new markets under AFDP for sustainability and proper maintenance.

These investments will be owned and managed by cooperatives/associations as business entities, and by small and medium scale enterprises as well as through 4P arrangements when appropriate. The programme will link fishers' cooperative societies and associations to TADB partner FIs, for the financing of related investments (equipment and infrastructure), working capital and asset financing (for equipment, storage and transportation). Considerations will be made to target youth and women led groups.

Increasing value/income from aquaculture production. This will involve (i) development/ strengthening the ADC-Farmers clusters and linkages with private sector hatcheries; (ii) establishment of aquaculture field/business schools to facilitate learning for fish farmers reaching youth and women; (iii) enhancing collective marketing strategies; (iv) expanding market horizon for farmed fish and basic cold chain facilities (e.g. cool boxes). Under AFDP the clusters will facilitate and/or make it

easier for fish farmers clusters to access the following functions and services: (i) input supply - bulk-sourcing of production inputs (fish seeds, feeds, equipment); (ii) extension and advisory services within the cluster arrangement; (iii) coordinated production and collective marketing to take advantage of different market opportunities and to stagger the stocking of their ponds so as to supply a continuous amount of fresh produce throughout the year; and (iv) local aquaculture governance and stakeholder engagement and policy advocacy.

Seaweed marketing and value chain development. Processing and value-addition were identified as a major challenge facing the seaweed sector, which is female dominated. The programme will finance (i) market and value chain analysis of seaweed to inform the programme investments; (ii) strengthening of seaweed clusters and cooperative societies to enhance access to markets; (iii) equip women cooperatives and groups with seaweed processing and value addition equipment (seaweed drying racks and solar dryers, milling machine/plant, packaging materials); (v) facilitate the emergence of seaweed small and medium enterprises and their linkages with financial institutions and business service providers, and (vi) promote the engagement of young males in seaweed value chain activities to increase sector productivity and create employment. Seaweed farmers will be supported to construct 50 seaweed drying racks and solar dryers. Through a cost-sharing mechanism, seaweed cooperatives will acquire five milling machine/plant to convert raw seaweeds to powder. AFDP will partner with The Nature Conservancy (TNC) to scale up market linkages with Cargill and other private buyers and provide farmers with necessary skills in processing quality products for more competitive markets. The programme will adapt and scale up an inclusive business model for seaweed promotion currently practiced in Zanzibar to Pemba and mainland Tanzania so that the 'seaweed clusters' could yield an enforcement mechanism to ensure compliance with agreed upon standards (e.g., reduce 'cheating' and promote efforts to meet production targets) and allow for collective bargaining to improve prices received for seaweed.

Component 3. Programme Management and Coordination

In addition to programme management and coordination, monitoring and evaluation and policy engagement, the programme makes provision for emergency recovery and resilience, in case of major shocks.

Subcomponent 3.1. Programme Management and coordination (see section L Planning, M&E, Learning, KM and Communication)

Subcomponent 3.2. Emergency recovery and resilience in case of crisis.

This sub-component is designed to provide swift response in the event of an eligible crisis or emergency events such as the global COVID-19 pandemic, climate extremes, desert locust pest invasion, and other crises. Through this sub-component, the Programme may provide support for immediate response to an eligible crisis or emergency, as needed, in coordination with the PMO. It will allow the GoT to request a reallocation of Programme funds to partially cover emergency response and recovery costs. If a climate event triggers this sub-component, the amount of climate finance will increase substantially. This component will be triggered if IFAD and the Government have jointly determined that an eligible crisis or emergency has occurred and the GoT has made a request to IFAD for emergency response. A specific operational manual for this component will be prepared, detailing financial management, procurement, safeguards, and any other necessary implementation arrangements.

E. Theory of Change

Improving agricultural productivity and production in Tanzania smallholder agriculture is widely recognised as a critical outcome in the pathway to growth, poverty alleviation and inclusive food systems, especially in vulnerable areas. Increased crop and fisheries productivity and profitability, especially staple crops (maize) and nutritious food (pulses and edible oil crops), fisheries and aquaculture allows farmers to take advantage of growing domestic and regional market opportunities, while increasing household food security and nutrition.

Through an inclusive value-chain and food system approach (see Annex 2), this six-year Programme will support access to and utilization of production enhancing technologies (improved seeds, fingerlings, deep sea fishing vessels,) as well as post-harvest, value addition and marketing infrastructures and services for increasing incomes. AFDP nutrition pathways will lead to nutritious foods such as fish and sea weed, maize, beans/pulses and sunflower and increase women's and youth incomes and assets, increase women's and youth participation and decision making, as well as targeted messages for women and men make more informed dietary choices.

AFDP interventions will deliver the following two interlinked outcomes to help small holders achieve: (i) increased climate-resilient productivity and production from crop seeds and fisheries and (ii) improved marketing and value addition of crop seeds and fisheries value chains. These outcomes will combine to make a significant impact by expanding, adapting and sustaining successful interventions to reach about 1.8 million people (50 percent women and 30 percent youth) who will: (i) increase their productivity and production; (ii) increase their annual net income, and (iii) increase their access to safe, nutritious and sufficient food and increased minimum dietary diversity for vulnerable groups.

Ultimately, the programme will contribute to inclusive agricultural transformation towards high productivity, resilience and income for improved livelihoods, food security and nutrition in Tanzania. The success of the programme will be affected by: (i) macro-economic and political stability; (ii) natural disasters, including COVID-19 pandemic, and extreme climate events; (iii) levels of public and private investments in food and agriculture; and (iv) institutional instability and technical capacities.

F. Alignment, ownership and partnerships

Alignment with SDGs. AFDP is fully aligned with the sustainable development goals (SDG) 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), SDG 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development, and SDG 13: Take urgent action to combat climate change and its impacts. It will specifically contribute to target 2.1 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, to safe, nutritious and sufficient food all year round; and target 2.3 double the agricultural productivity and incomes of small-scale food producers, in particular women, family farmers, and fishers, including through

secure and equal access to other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

With regard to SDG 14, the Programme will contribute to target 14.7 increase the economic benefits from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism, and target 14.b Provide access for small-scale artisanal fishers to marine resources and markets by improving the socio-economic conditions of small-scale fishers and fish farmers within the context of sustainable fisheries management and sustainable use of the oceans. Furthermore, and SDG 13: Take urgent action to combat climate change and its impacts, specifically target 13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries, including focusing on women, youth and local and marginalized communities. Ultimately, AFDP will contribute to target 1.2. reduce at least by half the proportion of men, women and youth living in poverty according to national definitions through agriculture-led development; as well as SDGs 5 (Achieve gender equality and empower all women and girls) specifically target 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making).

Country ownership and alignment with national priorities. At the national level, AFDP is aligned with the Tanzania's Development Vision 2025, which aims at transforming the economy to diversified and semi-industrialized economy with a substantial industrial sector. The programme will provide an opportunity for IFAD to fully align and contribute to ASDP II, the Government's sector programme for the development and modernization of the agricultural sector. The proposed intervention in the fisheries and aquaculture sector is also fully aligned to the 2015 Tanzanian National Fisheries Policy and the National Aquaculture Development Strategy (2018-2025). The initial concept note and the investment proposals were prepared by an inter-ministerial committee, jointly with IFAD.

Alignment with IFAD corporate priorities. The Programme is in line with the three strategic objectives of IFAD Strategic Framework 2016-2025, namely (i) increase poor rural people's productive capacities; (ii) increase poor rural people's benefits from market participation; and (iii) strengthen the environmental sustainability and climate resilience of poor rural people's economic activities. It is aligned with the COSOP (2016-2021) for Tanzania and relevant IFAD strategies and guidelines especially those pertaining to gender, youth, climate/environment, private sector, rural finance and nutrition, and scaling up.

Harmonization and partnership. The Programme will leverage the ASDP II institutional structures for coordination, management and policy dialogue for all sectoral initiatives. For effective alignment, the programme activities will be coordinated and reported through the Prime Minister Office, the Steering Committee and the Agriculture Sector Consultative Group for policy dialogue where all collaborating partners (public, private and Civil Society Organisations) are represented. In addition, the ASDP II framework contains thematic working groups through which IFAD will further strengthen the collaboration among the Rome-Based Agencies (FAO and WFP) and other relevant United Nations agencies and programs that have a shared objective of strengthening the capacities of actors and activities involved in the production, processing, distribution, and consumption of food that have the potential to improve the food security and nutrition status of the populations, particularly the most vulnerable in Tanzania. IFAD has developed strong partnerships with a range of stakeholders in the country through its operational and non-lending activities. These have engendered leveraging of resources, learning and sharing knowledge and experiences. There is potential for expanding and deepening these partnerships, through the proposed programme, under the overall framework of ASDP II. Specifically, AFDP will build operational synergies with the World Bank through the South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish), the Indian Ocean Tuna Commission (IOTC), the African Development Bank for potential co-financing of 4P and other investments in postharvest infrastructures and business development. AFDP will leverage ongoing partnership with CGIAR Centres like CIAT on beans, CIMMYT on maize and World Fish centres on aquaculture. An IFAD regional grant with CIAT would also help mobilize additional resources and guarantee a closer engagement with CIAT, the other CGIAR centers.

AFDP will also develop stronger partnerships with farmer organizations and cooperatives, including emerging public-private-producer partnerships (e.g. Agriculture Non-state Actors Forum and Agricultural Council of Tanzania); Financial institutions such as TADB and partner Commercial banks accessing the Smallholder Farmers Credit Guarantee Scheme under MIVARF); and Civil society (e.g. TASTA MVIWATA, East African Business Council, East Africa Grain Council, etc.

South-South and Triangular Cooperation. There are several countries in the region, including Kenya, Zambia, Zimbabwe and South Africa where private sectors lead most seed operations. Through regional networks such as the Pan African Bean Research Alliance, the Eastern Africa Community Programmes. The Programme will promote learning routes to the Aquaculture Business Development Programme in Kenya, the Small Scale Aquaculture Promotion Project in Mozambique, and the Fisheries Resources Management Programme in Eritrea. There are opportunities for South-South cooperation with the Korean International Development Agency on mariculture hatchery in Zanzibar, and with the Japan International Cooperation Agency, which is providing financial support to TAFICO by facilitating the purchase of a fishing vessel and installation of ice production and cold storage facilities.

G. Costs, benefits and financing

a. Project costs

The total programme cost is estimated at USD 76.8 million for six years (2021 – 2026). Programme financing by component is as follows: USD 56.3 million (or 73.3 percent of the total) for Component 1 (Enhanced productivity of crop seeds, fisheries and aquaculture), USD 14.5 million (or 18.9. percent of the total) Component 2 (Improved market access, value chain addition and private sector development) and USD 6.0million (or 7.8 percent) for Component 3 (Project Management and Coordination).

It is to be noted that USD 13,884,000 corresponds to climate change adaptation finance, which represents 24 percent of the

total IFAD project amount. Specifically, Component 1. Enhanced productivity of crop seeds, fisheries and aquaculture (USD 11,045,000), Component 2. Improved market access, value addition and private sector development (USD 1,551,000) and the Project Management Costs (USD 1,288,000) count in part towards IFAD climate-focused financing^[45]

Table 3: Programme costs by component (and sub-components) and financier

(Thousands of United States dollars)

Component	IFAD loan		Private Sector		Beneficiaries			Borrower/recipient			Total
	Amount	%	Amount	%	Cash	In-kind	%	Cash	In-kind	%	Amount
1. Enhanced productivity of crop seeds, fisheries and aquaculture	42,285.9	75.1	8,094.7	14.4	197.4	-	0.3	-	5,738.5	10.2	56,316.4
2. Improved market access, value chain addition and private sector development.	11,071.8	76.2	453.6	3.1	1,512.1	-	10.4	-	1,491.4	10.3	14,528.9
3. Project Management and coordination	5,455.3	91.2	-	-	-	-	-	-	528.5	8.8	5,983.9
Total	58,813.0	76.6	8,548.3	11.1	1,709.5	-	2.2	-	7,758.4	10.1	76,829.2

Table 4: Programme costs by expenditure category and financier

(Thousands of United States dollars)

Expenditure category	IFAD loan		Private Sector		Beneficiaries			Borrower/recipient			Total
	Amount	%	Amount	%	Cash	In-kind	%	Cash	In-kind	%	Amount
Investment costs											
1. Consultancies	9,543.3	86.9	-	-	89.9	-	0.8	-	1,342.7	12.2	10,975.9
2. Equipment & Materials	30,738.4	80.3	2,880.5	7.5	350.5	-	0.9	-	4,310.3	11.3	38,279.8
3. Grants & Subsidies	438.6	98.9	-	-	-	-	-	-	4.9	1.1	443.5
4. Workshops	536.7	91.9	-	-	-	-	-	-	47.4	8.1	584.2
5. Training	3,034.1	33.6	5,667.8	62.8	0.1	-	0.0	-	328.0	3.6	9,029.9

6. Vehicles	2,348.5	86.6	-	-	204.0	-	7.5	-	159.2	5.9	2,711.6
7. Works	9,977.4	79.4	-	-	1,065.0	-	8.5	-	1,529.0	12.2	12,571.4
Total Investment costs	56,617.0	75.9	8,548.3	11.5	1,709.5	-	2.3	-	7,721.6	10.4	74,596.3
Recurrent costs											
1. Salaries & Allowances	1,930.8	100	-	-	-	-	-	-	-	-	1,930.8
2. Operating Costs	265.3	87.8	-	-	-	-	-	-	36.8	12.2	302.1
Total Recurrent costs	2,196.1	98.4	-	-	-	-	-	-	36.8	1.6	2,232.9
Total	58,813.0	76.5	8,548.3	11.1	1,709.5	-	2.2	-	7,758	10.1	76,829.2

Table 5: Programme costs by component and year
(Thousands of United States dollars)

Component	PY1		PY 2		PY3		PY4		PY5		PY6		Total
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
1. Enhanced productivity of crop seeds, fisheries and aquaculture	17,639.1	31.3	16,075.7	28.5	13,480.5	23.9	4,178.6	7.4	3,103.2	5.5	1,839.4	3.3	56,316.4
2. Improved market access, value addition and private sector development	4,659.0	32.1	4,235.5	29.2	2,736.7	18.8	1,481.6	10.2	864.7	6.0	551.5	3.8	14,528.9
3. Project management and coordination	1,603.5	26.8	921.2	15.4	970.8	16.2	848.6	14.2	744.1	12.4	895.8	15.0	5,983.9
Total	23,901.5	31.1	21,232.4	27.6	17,187.9	22.4	6,508.7	8.5	4,711.9	6.1	3,286.7	4.3	76,829.2

b. Project financing/co-financing strategy and plan

The current overall financial support for this programme available from IFAD under the current financing cycle (IFAD11) is

USD 58.8 million or 76.6 percent of total project costs. These resources will be complemented by the Government of Tanzania's contribution, estimated at USD 7.8 million (10.1 percent), mainly from tax exemption, private sector investments of USD 8.5 million (11.3 Percent) and beneficiary contributions of USD 1.7 million (or 2.2 percent). All private sector and beneficiary contributions are in-cash, varying between 20-50 percent of commercial investments, made possible through micro loans and partial credit guarantees. A majority of funding (85 percent) is expended in the first three years, with supportive investment and services in the latter years. This is necessary due to the heavy investment needs of rehabilitating production infrastructures in ASA and ADCs, as well as the new ventures in deep-sea fishing and supportive postharvest and fish processing infrastructures (ice-making, cold rooms, fish feed and fish processing plants).

The African Development Bank (AfDB), TADB as well as The Nature Conservancy (TNC) have expressed interest to explore co-financing opportunities to consolidate and scale up AFDP investments. If requested by GoT, AfDB would complement IFAD investment to scale up AFDP activities, through additional financing starting from 2021/2022. Currently, discussions between TADB and IFAD Non Sovereign Operations (NSO) are ongoing for accessing USD 5 million to co-invest in TADB Smallholder Credit Guarantee Scheme, which will leverage additional USD 15 million from TADB and its partner financial institutions. A proposal for the NSO will possibly be submitted to the December 2020 Executive Board. Similarly, a concept note for USD 5 million co-financing from the Global Environment Fund (GEF) -Least Developed Country Fund (LDCF) is being prepared for promoting environmental-friendly fishing technologies, supporting the blue economy strategy and sustainable exploitation of marine resources (e.g. Marine Spatial Plan) and strengthening the capacity of fisher's cooperatives and local communities.

c. Disbursement

1. There will be three types of disbursement mechanisms for the project which consist of (i) Advance Withdrawal; (ii) Direct Payment; (iii) Reimbursement. Disbursements from IFAD will be made by way of an advance to the Designated Account and subsequent replenishments based on expenditure incurred as supported with Statement of Expenditure. There will be one designated account that would receive funds from IFAD which will have a corresponding dedicated project account in Tanzanian Shillings (Tshs) managed by PCU. These will be held with Bank of Tanzania. There will further be project operational account for each implementing entity that will be receiving funds which will be held with commercial banks for each of payments.
2. The programme will use direct payments methods as well as payments from the eight project accounts to be held with commercial bank accounts by each of the eight institutions receiving project funds. The direct payments by IFAD are made on an exceptional basis and for payments of more than USD 100,000 as will be guided in the letter to borrower. The Government Counterpart financing will be made in kind hence no bank account has been proposed. When other financiers are brought on board, they will open separate dedicated accounts so as not to commingle with IFAD financing

d. Summary of benefits and economic analysis

The principal quantifiable benefits of the project are: (i) smallholder farmers adopting improved seeds, resulting in increased yields of food crops and farmed fish, and a reduction in the 'yield gap', (iii) improved pre- and post-harvest handling of crop seed and fish, resulting in reduced losses; (iv) increased consumption of fish and iron-rich beans and sunflower oil; (v) improved access to financial services by members of farmer organizations and rural entrepreneurs; and; (vi) adoption of sustainable fishing practices and technologies to reduce fishing pressure in-shore waters.

Early generation seed multiplication. The analysis demonstrates the benefit of an initial subsidy and eventual phasing out of the Programme subsidy to ASA over the lifespan of the programme, and the gradual uptake by the private sector. Using a financial discount rate of 9%, the financial analysis returns a figure of 4% for the financial internal rate of return (FIRR), a benefit-cost ratio (BCR) of 0.96 and switching values of 4% for benefits and -4% for costs. The investment entails high upfront cost in public goods with major benefits experienced more at the farm level. In contrast, the economic internal rate of return (EIRR) returns a positive figure of 9%, when using a discount rate of 6% with economic prices.

Smallholder use of quality seeds. The financial analysis returns a Net Present Value (NPV) of USD 113; 198; 150 and 31 per hectare for maize, sunflower, beans and pulses respectively. While key project investments are made to enhance seed availability (Component 1.1) and access at the AEZ level, the uptake and use of improved seed especially by poorest end-users is an important aspect of the project (promoted under component 2.1) ability to generate expected benefits and is therefore included in the analysis. While the project adopts an adoption rate of 40 percent for seed, sensitivity analysis suggests an implementation rate of 55 percent is needed for activities to make a positive return. At a programme level, this has an impact of lowering the FIRR from 19 percent to 16 percent.

Table 6: Crop activity financial indicators

Crop	Yields (kg/ha)			Production (gross) revenue			Income without labour (USD/ha)		
	WOP	WP	Incem.	WOP	WP	Incem.	WOP	WP	Incem.
Maize	1,460	1,825	25%	391	489	25%	353	392	11%
Sunflower	1,033	1,291	25%	286	357	25%	260	305	17%
Beans	950	1,140	20%	493	591	20%	449	547	22%
Pulses	850	1,063	25%	367	459	25%	264	327	24%
Crop	Return on family labour			FIRR	NPV	Benefit			
	WOP	WP	Incem.	WP	WP	WP			
Maize	6.82	7.79	14%	23%	113	2.21			
Sunflower	4.21	4.85	15%	50%	198	2.02			
Beans	12.15	10.63	-12%	34%	150	2.70			
Pulses	5.94	5.06	-15%	18%	31	1.94			

Deep Sea Fishing Vessels. For the 18-metre vessel, the FIRR before financing is a modest 28% over a 10-year discount period and 32% over a 20-year discount period. Both are provided to understand the impact of operations over the long-term. The analysis assumes 100% grant funding, as requested by the GoT for financing of the vessels by the project, with some contribution through a 4P arrangement. While the details of the model for the 4P arrangements will be defined, the analysis assumes a 20% contribution by the beneficiaries (private sector investor and fisher cooperative societies). A combination of loan, and crowding in of the private sector, has a positive impact on the cash flow of operations in the early years, as operation reach for growth in financial terms. A similar outcome unfolds for the 25-metre deep-sea vessels, when all four of the vessels are used to aggregate financial benefits in the analysis.

Table 7: Deep-sea vessels key financial indicators, after financing.

	18 m		25 m	
	10 years	20 years	10 years	20 years
FIRR after financing	25%	34%	31%	40%
NPV	747,592	3,013,197	1,436,706	8,988,461
NPVb	5,036,829	9,603,008	9,219,709	17,482,377
NPVc	1,652,125	2,181,918	3,319,277	4,219,838
BCR	3.05	4.40	2.78	4.14
Switching value (benefit)	-0.67	-0.77	-0.64	-0.76
Switching value (cost)	2.05	3.40	1.78	3.14

Fish Aggregation Devices. These devices help fishers to reduce their search for fish, reducing fuel costs and time taken to make a catch. A model based on parameters by end beneficiaries and mission estimates used the cost of devices, including the cost of device installation. Against a without-project scenario, the model returns a FIRR figure of 19.3% and an NPV of USD 1,355,764.

Aquaculture Development. The investments in the three ADCs require sound financial management with additional working capital to finance operations on a long-term viable basis. In its current form, while using a discount rate of 9%, the model returns a FIRR of 10% and an NPV of USD 3,584,443, after financing. The benefits of investments in aquaculture are captured downstream by the adoption of higher quality fingerlings by fish farmers with existing ponds.

Ice-making facility. These plants will be located at or near the landing sites, to ensure post-harvest loss reduction. Before financing (by the project), the FIRR analysis returns a figure of 19.5% and an NPV of USD 245,122 over a 10-year discount period or after financing 34.2% FIRR and USD 204,951.

Programme level analysis – Financial and Economic. The financial programme -level analysis returns a FIRR of 17% and an NPV of USD 43.9 million, while the economic project-level analysis returns an EIRR of 15% and an NPV of USD 69.2 million. Financial and economic switching values are available in the below tables.

Table 8: Financial and Economic Switching Value

Financial Switching values	Appraisal	Switching	% change
Incremental benefits	28,399	-15,569	-155%
Incremental costs	-15,569	28,399	-282%
BCR	-1.82		

Economic Switching values	Appraisal	Switching	% change
Incremental benefits	86,915	17,744	-80%
Incremental costs	17,744	86,915	390%
BCR	4.90		

Sensitivity Analysis. The analysis uses 170 different scenarios to test the robustness of the project against standard risks associated with increases in cost, reduction in benefits, time lags and reduced adoption rates, and on the upside, it tests for improved benefits or reduction in costs. Using a financial discount rate, the minimum adoption rate needed for a positive returns appears as 32% while using a social discount rate, the adoption rate is 23%. The project appears capable of achieving such a figure; however, a time lag of one or two years would make positive returns a difficult prospect.

e. Exit Strategy and Sustainability

The Programme addresses the core challenges of increasing supply and farmer access to quality crop and fish seeds, as well as effective production and postharvest handling innovations and equipment. Key elements of sustainability include: (i) capacity building and reforms in public institutions to adopt business logic; (ii) development of SME and private sector engagement for market linkages; (iii) policy engagement for institutional reforms and implementation of key policies, (iv) creating business opportunities for the youth and women; (v) use of digital technologies for scaling up; and (vi) strengthening farmers organizations and cooperative societies.

AFDP's sustainability is further strengthened through: (i) inclusive targeting mechanism to ensure and promote farmers and community participation in Programme activities and investments; (ii) better understanding of stakeholders' needs and markets; (iii) establishing sustainable market linkages and promoting 4P business models to leverage financing, enhance market access resulting in sustainable market relationships (iv) focusing equally on seed supply as well as demand and use; (v) ensuring longer-term support to be able to produce sufficient quantities of early generation seed (breeder, foundation and registered), fingerlings and strengthening national capacity to access to deep sea for high value fish, and (vi) developing the needed farmers skills and institutional capacities for self-reliance beyond the project (vii) and creating a number of long-term decent jobs for women and youth.

Finally, the Programme aims to ensure viability of investments by disrupting old ways of doing business through technical assistance and SSTC.

3. Risks

H. Project risks and mitigation measures

AFDP Integrated Programme Risk Matrix (IPRM) is describe in Annex 9 with the complete list of risks and their mitigation measures.

The political environment remains stable. However, the upcoming general elections scheduled for October 2020, raise the risk of opposition-led protests, but these are not expected to jeopardize stability. The COVID-19 pandemic is still evolving, and there are uncertainties depending on the pace and extent of the spread of COVID-19. GoT has taken several steps to mitigate the COVID-19 outbreak but can still do more given its favorable macroeconomic conditions. AFDP's design covers several aspects of COVID-19 recovery and resilience building. As an additional mitigation measure, The Programme makes provision for a sub-component 3.2 on "Contingency and Emergency Response and Recovery", given the risks of Covid-19 pandemic and the reoccurrence of emergency events such as climate extremes, desert locust pest invasion. The Programme could also leverage IFAD's response framework that includes the Rural Poor Stimulus Facility, which Tanzania is eligible to apply for.

The main technical risk of the Programme is that limited capacities may impact on the implementation of the innovative aspects of the programme, such as the 4Ps joint venture for deep sea fishing. GoT has committed to undertaking the required prefeasibility and feasibility studies for the development of 4P joint ventures in the seed and fisheries sectors. Technical Assistance will be provided to support GoT in preparing concept notes and prefeasibility studies for 4P joint ventures, and for scouting for partners and structuring financing arrangements.

According to the existing Public Procurement Act, procurement methods are consistent with IFAD guidelines. However, there is a risk that PEs may avoid competitive methods of procurement. Other risks include: (i) delays in preparing procurement plans due to the fact that AFDP will have several partners; (ii) not all procuring entities publicly advertise their contract awards; (iii) contracts are not always supervised by independent engineers or a named programme manager. These risks will be mitigated by the following: (i) all procurements via direct contracting and sole source selection will be subject to IFAD's prior review and No-Objection, as per Section 23 of the IFAD Project Procurement Guidelines; (ii) AFDP will employ IFAD's procurement plan template, so as to ensure that all necessary procurement information are captured; (iii) the use of E-procurement (still in the trial stage) will also facilitate the public advertisement of contract awards; and (iv) an independent supervising firm will be recruited for supervising contract execution for complex works.

3. The project Inherent risk is assessed as high but with the proposed mitigation measures; this is foreseen to come down to substantial. The main foreseen risks for the project include fund flow arrangements, given the new regulatory requirements for the approval processes for release of funds to the projects within the government structures; this is likely to be much longer. Likewise the procurement of the right accounting software and implementation of a proper accounting system may cause delays but this is mitigated through purchase of an off shelf accounting software through start-up funds. The geographical coverage of the project necessitate financial management arrangements at district levels, however given changes in the government system, where less reliance will be place on the government new system in the initial stages of the project; only minimal operational costs will be disbursed to the districts. Most of the major purchases will be carried out at central level by the PCU. Internal control processes will be beefed at district level by the internal auditors from the various participating ministries as well as supervision missions by the PCU staff.

I. Environment and Social category

The Programme is confirmed as SECAP **Category A**. Most of AFDP proposed interventions will have some significant impacts that can be readily mitigated or remedied and therefore fall into Category B. The deep sea fisheries interventions and associated processing activities will trigger an overall Category A status of the Programme, which requires the preparation of an Environmental and Social Assessment (ESIA) and an Environmental and Social Management Plan (ESMP), the purpose of which will be to facilitate the implementation of sustainable fishing operations.

The impact of tuna fisheries are sensitive not least because a number of tuna and tuna-like species are considered to be susceptible to overfishing, and moreover any impact on their stocks will extend over a large area, beyond territorial waters. There is limited data available on fish stocks in the deep sea, sustainable yield and carrying capacities in Tanzanian waters. This notwithstanding remedial actions can be taken, through the review and implementation of a Tuna Fisheries Management Plan (TFMP), which will include specific measures to ensure fishing is carried out in a sustainable manner. In particular, the TFMP will make provisions for the following actions that reduce the risk of overfishing: (i) assessment and monitoring of tuna catches on a regular basis to ensure the stocks remain within sustainable levels. The TFMP will ensure that tuna fisheries are managed based on sound scientific data and knowledge; (ii) an effective system of controlling fishing capacity through licensing of fishing vessels and appropriate gears, also to avoid by-catch; (iii) mechanisms for monitoring, control, surveillance and enforcement of fishing regulations to eliminate Illegal, unregulated and unreported (IUU) activities, including on-board observer programs; (iv) mechanisms for sustainable financing of the Tuna management plan through license fee, levy on catches, trust fund etc.; (v) actions for post-harvest management to reduce losses and value addition of fisheries products; (vi) capacity building of local fishery management institutions; building synergies and (vii) partnerships with regional and international programmes and institutions such as the Indian Ocean Tuna Commission (IOTC).

As part of the design process, an Environmental and Social Management Framework (ESMF) has been undertaken and published on the IFAD website^[46]. The ESMF provides measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures and appropriate roles, responsibilities and capacity for managing, mitigating and monitoring environmental and social concerns related to the project. The Programme is phased to include the implementation of the subprojects and interventions that fall under Category B, plus the ESIA studies for the deep sea fisheries interventions in Zanzibar and Mainland. As per the national regulations, the ESIA for Category A sub-projects will be disclosed on IFAD website and national platforms during the National Environmental Management Council (NEMC) review for a period of 60 days. In addition, at start-up phase, the programme will develop the following safeguards instruments namely: (i) Integrated Pest Management Plan; (ii) Stakeholder Engagement Plan; and (iii) Grievance Redress Mechanism.

J. Climate Risk classification

The programme is expected to be moderately sensitive to climate risks and thus requires integration of climate adaptation and mitigation issues into the enhanced production, distribution and utilisation of quality seeds as well as fisheries and aquaculture development. Tanzania is vulnerable to increased climate variability and climate change over most parts of the country. Increasing temperature were observed notably over highland areas while late rainfall onset and early cessation, decreasing rainfall amount and seasonal shift in rainfall patterns are becoming more common nationwide. Seed production is facing increasing negative impacts of climate change such as late rainfall onset, shorter cropping seasons, prolonged drought periods, floods and proliferation of several new insect pests and diseases attacking the different crops. In order to mitigate and adapt to uncertainties associated with climate variability and change, the programme will contribute to the development and seed multiplication of appropriate locally adapted varieties and CSA practices that are more resilient to climate change, pests and diseases.

The impact of climate change in fisheries is mainly associated with destruction/degradation of fish nursery grounds, breeding and feeding areas. The rise of sea surface temperature causes the destruction of coral reefs, which is a critical habitat for fishes in the coastal environments. Sea level rise, which is associated with global warming may cause sea water to rise above optimal levels of some corals. The effects of sea level rise include increased sedimentation and influences on coastal fish species due to the loss of intertidal areas which act as important nursery areas for both resident and migratory species.

4. Implementation

K. Organizational Framework

a. Project management and coordination

The **overall programme coordination** will be under the Prime Minister's Office (PMO), which is responsible for coordinating the implementation of ASDP II. GoT will appoint a Steering Committee to provide strategic guidance and oversight of the Programme. The Programme Steering Committee will be chaired by the Permanent Secretary PMO and will be composed by the Permanent Secretaries of the ministries in charge of agriculture, fisheries, finance and planning, and local government from the Mainland and Zanzibar, as well as representatives from the private sector and farmers' organizations. The Programme Steering committee will meet twice a year.

Inter-Ministerial Technical Advisory Committee (ITAC). MoA, MLF and MANRLF-ZNZ are jointly responsible for implementation of the programme. They will establish a joint Technical Advisory Committee to (i) advise the Programme Steering Committee and the PCU on technical issues, (ii) provide oversight of implementation and performance monitoring of the implementing agencies; (iii) follow up on the implementation of PSC decisions and recommendations; (iv) mobilize technical expertise and ensure coordination and synergies with other existing projects and initiatives; and (v) and facilitate policy engagement. The ITAC will be chaired by the Director of Policy and Coordination of Government Business PMO, to ensure programmatic synergies, integration and coherence between programme components. It will be composed of the relevant Directors from MoA (Policy and Planning, Crop Development and Extension services), MLF (Policy and Planning, Aquaculture and Fisheries) and MANRLF-ZNZ (Policy and Planning and Fisheries) as well as MoFP Tanzania Mainland, and MoFP Zanzibar. It will also comprise two representatives from participating Districts. The ITAC will meet twice a year. The Programme will establish a semi-autonomous Programme Coordination Unit (PCU) under ASDP II's National Agriculture Coordination Unit^[1] housed in PMO. It will complement existing ASDP II National Coordination Unit by with the following key staff competitively selected: (i) Programme Coordinator, (ii) Programme Monitoring & Evaluation and Knowledge Management officer, (iii) Business Development/PPP expert, (iv) Environmental Management specialist (in the first years of the Programme as required for Category A status), and (v) Finance Officer. A smaller Programme coordination team, comprised of a (i) Team Leader; (ii) value chain development expert and (iii) a finance officer, will be established in Zanzibar under the MANRLF. The PCU will leverage existing expertise and staff from the NCU, MoA, MLF and MANRLF-ZNZ who will be seconded to AFDP to support (i) Monitoring and Evaluation, (ii) Knowledge Management and (iii) gender and social inclusion. Furthermore, the programme will mobilize targeted technical assistance to provide strategic guidance and oversight on targeting, women and youth empowerment, as well as nutrition targets of the Programme.

The PCU will be responsible among others to: (i) provide catalytic and supportive role to the agricultural transformation agenda; (ii) coordinate the preparation of the AFDP Annual Work Plan and Budget; (iii) coordinate alignment, harmonization and implementation of AFDP activities and interventions within the framework of ASDP II; (iv) manage, monitor, evaluate, harmonize and coordinate implementation of AFDP activities at the district level; (v) provide analytical and problem-solving support to the implementing institutions; (vi) provide technical support on joint monitoring and evaluation and knowledge management; of the program; and (vii) develop mechanisms for collaboration and coordination across all stakeholders, and for policy engagement and advocacy.

District level Coordination and implementation. Overall, all district level programme coordination and implementation will adhere to the existing ASDP II structures, which comprise the District Executive Director and District Facilitation Team. The District Executive Director (DED) will hold overall responsibility for activities and funds used at local level, and will report to PCU and Ministries. The District Facilitation Team includes District Agricultural Irrigation and Cooperative Office Officers, District Livestock and Fisheries Officer, as well as other officers to support activities on targeting, nutrition, women empowerment, youth and climate change and environment targets. AFDP planning will be integrated into the village planning process which is led by a Village Planning Committee, Village Agricultural Extension Officer, Village Executive Officer and is supported by the District Facilitation Team according to the District Agricultural Development Plans Guidelines. As a key coordination mechanism at local level, District Value Chain Components brings major actors in crop and fisheries value chains together to develop and drive the implementation of programme activities that include various aspects such as productivity improvement, value addition and market access. The stakeholders at local level include the private sector (traders, processors, transporters, financial institutions, etc.), NGOs, development partners and various public institutions that can provide different types of technical support. The programme will further leverage ongoing community development projects and interventions as well as existing structures at the national and district levels.

Key Implementing institutions: ASA, TARI, TOSCI, TAFICO, ZAFICO and ADC will be responsible for specific activities and will develop a business and implementation plan for delivering specific results as detailed in the Programme Implementation Manual. Other implementing partners will include TASTA for coordinating seed demand and supply, TADB for facilitating access to finances; DSFA for the review and implementation of Tuna Fisheries Management Plan (TFMP); seaweed production, processing and value addition. The Programme will also recruit selected service providers for promoting youth entrepreneurship and facilitating linkages with downstream value chain actors, on a basis of performance contracts.

Ministerial Technical Advisory Committee. Each participating ministry will establish a Technical advisory committee to review and scrutinize implementation of the programme interventions, and to provide technical guidance to the program implementing institutions and the LGAs. At each ministry, the technical Working Group will be chaired by Director of Policy and Planning from implementing ministries. Ministerial TAC will have members from Policy and Planning, Aquaculture, and Fisheries, one representative from ADCs and two representative from participating Districts for MLF. For MoA, it will include Director of Policy and Planning, Crop Development, Extension services, one representative from TASTA and two representative from participating Districts. Each ministry will appoint a Focal Person who will be the main points of contact for coordinating technical support to the implementing institutions and LGAs in the project areas. The ministerial technical working group will meet on a quarterly basis in each ministry and jointly twice a year.

b. Financial Management, Procurement and Governance

4. **Financial Management System::** The financial management arrangements of the project will adopt and apply the international accounting standards and the financial accounting will follow International Public Sector Accounting Standards cash accounting. The financial management risk is mitigated down from high to a substantial level through the various mitigation measures incorporated in the design. The project will be managed through a standalone accounting system. Proper accounting software system will be a condition for disbursement and this will be aided through use of start up funds
5. Given the geographical coverage of the programme, in addition to supervision from the PCU, internal auditors at each implementing institution who reports to Audit Committees at each institution will carry out regular reviews to provide assurance that the programme is being implemented in accordance with the PIM, complies with Government's regulations and is complying with project financing covenants. The internal Auditors will be required to carry out the audit of the project at least twice annually.
6. **External Audit.** On annual basis, the consolidated financial statements for the programme will be audited by the National Audit Office of Tanzania and audited financial statements submitted to IFAD within six months after the period end in accordance with IFAD guidelines.

Procurement arrangements. Public procurement in Tanzania is governed by the Public Procurement Act (PPA), No. 7 of 2011 as amended in July 2016, and subsidiary public procurement regulations issued in 2013, and amended in 2016. Although the PPA and the accompanying regulations are adequate and meet international standards, the procurement law in its entirety is fragmented (amendments and consequential amendments) and this could lead to challenges in the application of the Law by the procurement entities. In order to mitigate this challenge, a user guide procurement manual should be developed and will be updated whenever there is an amendment of the Law or issuance of a circular to PEs by PPRA. The PMO's office has a fully established Tender Board (TB) and a Procurement Coordination Unit (PCU). To avoid duplication of responsibilities, AFDP will use these existing TB and PMU at the PMO, and within the implementing institutions (e.g. TARI, ASA, TOSCI etc.), that fall under the category of government procurement entities. However, the members composing the TB and PMU at PMO and within implementing institutions will be trained on IFAD procurement guidelines and the use of 'NOTUS', as a digital monitoring system to offer active two-way communication on procurements requiring prior review. PMO will appoint a focal point within the PMU and the TB to follow up and report on AFDP related procurements, as well as operating NOTUS.

Public Procurement Processes. In accordance with the existing Public Procurement Act, GoT procurement methods are consistent with IFAD guidelines, except the provision to use non-competitive methods where no consolidated data is provided related to the use of non- competitive procurement methods and/or direct purchase for urgent procurements. This leaves a loophole that may be exploited by PEs to avoid competitive methods of procurement. In order to mitigate this risk, all procurements via direct contracting and sole source selection will be subject to IFAD's prior review and No-Objection, as per Section 23 of the IFAD Project Procurement Guidelines.

Outcome/update of AFDP's Procurement Risk Matrix (PRM). The outcome of the PRM for AFDP has returned a 'Medium' inherent risk, and if the proposed mitigation measures are applied, the PRM returns a 'Low' net risk. The inherent risk attracted a 'Medium' risk rating for the two major pillars (pillar A, country risk assessment and pillar B, project institutional risk assessment). After proposing mitigating measures, pillar A is rated 'medium risk' and pillar B is rated 'low risk'.

Governance. Transparency International assigned a corruption perception index (CPI) score of 37 to Tanzania, thus falling within the "medium" bracket. There is only a single level system to handle procurement complaints. In fact, although an independent procurement appeal authority known as the "Public Procurement Appeals Authority" ("PPAA") exists at national level, there is no appeals review panel at the level of the implementing agency. The Internal Auditor General undertakes a compliance audit on an annual basis. However, not all Procuring Entities are audited. IFAD prior review thresholds will take into account the CPI score for Tanzania. Additionally, all procurement entities, as well as bidders, suppliers, contractors, consultants and service providers, shall observe the highest standard of ethics during the procurement and execution of contracts financed under IFAD funded Projects, in accordance with paragraph 69 of the Procurement Guidelines. The Revised IFAD Policy on Preventing Fraud and Corruption in its Activities and Operations shall apply to all partners, vendors and third parties, in addition to the relevant national anticorruption and fraud laws.

L. Planning, M&E, Learning, KM and Communication

a. Planning, M&E, Learning, Knowledge Management and Communication

Planning will be guided by the programme's strategy, logframe and broader results framework, which will inform the development of annual work. The annual work plans and budget (AWPB) will be drawn up in consultation with implementing partners. The PCU will be responsible for the process and for the inclusion of beneficiaries and collaboration with key stakeholders to ensure transparent planning process. At the local level, AFDP activities will be integrated into the Village Agricultural Development Plans (DADP). The village planning process is led by a Village Planning Committee, Village Agricultural Extension Officer, Village Executive Officer and is supported by the District Facilitation Team according to the DADP Guidelines.

Monitoring and evaluation (M&E) system development. The programme's M&E will be aligned with the overall M&E framework for ASDP II and specifically with the Agricultural Routine Data System (ARDS), which is designed to provide

district and regional level agricultural data on a quarterly basis. It will also be aligned with IFAD's Operational Results Management System (ORMS) to core outcome indicators for the different levels of results (output, outcome and impact) as well as programme specific indicators. At start-up, the programme will conduct a baseline survey on core outcome indicators, IFAD 11 mainstreaming priorities (gender, youth, nutrition, climate change and citizen engagement) and ASDP II key performance indicators. These surveys will be repeated at mid-term and programme end, using large sampling frames and panel studies that will also include non-beneficiary households with similar characteristics to those receiving AFDP support, either in the same districts, or in neighbouring ones. Data collection and analysis will use mixed methods approach, combining qualitative and participatory techniques including photo voices and participatory videos, most significant changes, case studies as well as quantitative survey techniques and statistical analytical techniques such as double difference estimators, propensity score matching, adoption models, etc.

The Programme will work with the PMO to develop a consolidated M&E geo-referencing system, building on earlier initiatives and tools developed under ASDP II. AFDP will promote digitalization of the M&E system with portable electronic devices and dashboards so as to speed up data entry and cleaning, and reporting as well as making management decisions and disseminating the results rapidly at different levels. At the village, district and institutional level, the results will be collated, consolidated and digitalized into a standardized format for electronic transmission and presentation in various dashboards at different levels. Reporting system will be consolidated and linked to a web-based database, using custom-made software that allows the data to be entered electronically at the district level and forwarded through subsequent approvals process, and displayed in dashboard for informing decision making, management and data utilisation. Responsibilities for M&E data collection, utilization and reporting will be divided between the following key stakeholders: (i) PCU will be responsible for coordination, integration and quality control as well as tracking COI (at the outcome and DO level) and IFAD priorities, reporting, decision making and policy engagement; (ii) Implementing institutions (ASA, TOSCI, TAFICO and ZAFICO, and in the ADCs) will provide data on activity related output indicators to the PCU and provide programme progress on quarterly basis on their respective areas; (iii) District facilitation teams will ensure activities are implemented according to design and collect and report output indicators to the PCU at the required time; (iv) Cooperative societies, seed producer organizations and agro-dealer networks: will provide data on beneficiary feedback to the DFTs and relevant implementing institutions; and (v) Village and/or Ward Agricultural extension officers will collect and submit monthly, quarterly and annual reports to their district agriculture and fisheries development officers including compiling formal reports on grievance redress.

Learning and knowledge management (KM). The draft KM strategy and implementation plan will be further development at the inception of the programme to improve learning, KM and communication practices. The strategy will be aligned and implemented under ASDP-II Communication and Knowledge management (CKM) strategy and supervised by the CKM officer in the National Coordination Unit located within PMO. It will be designed to ensure that: (i) there is coordination of CKM activities in the different ministries and implementing institutions with the PCU and the Districts; (ii) stakeholders receive appropriate messages through suitable channels; (iii) there is smooth two-way flow of information; and (iv) farmers are empowered in decision making and participate fully in planning, monitoring and implementation of AFDP activities and provide feedback. AFDP will recruit and retain a CKM consultant who will prepare and support the Programme CKM Strategy, develop and manage regular production cycle of communication products and information materials for various stakeholder groups. The Consultant will work closely with the CKM and M&E officers in the relevant ministries and implementing institutions to generate and understand obstacles, solutions and lessons learned to ensure a smooth project implementation. The terms of reference have been specified in Annex 8 (Programme Implementation Manual).

The programme CKM plan will promote the key innovations, outcomes and results, including (i) digital system for seed certification and traceability for new seed varieties; (ii) multi-stakeholder seed innovation platforms for seed demand and supply coordination; (iii) 4Ps models for fisheries and seed businesses; (iv) GALs for gender; (v) aquaculture cluster growth models; and (vi) lessons for implementing food system operations to inform the new generation/flagship for Food System Projects for IFAD in ESA. The KM strategy will leverage the use of digital technologies such as e-extension, e-registration, e-commerce, and diverse solutions to expand farmers and value chain actors' access to a broad array of practical knowledge and information services and markets. In line with the South-South Triangular Cooperation (SSTC) strategy, the project will extend opportunities for exchange learning with other relevant IFAD programmes and initiatives in the region and globally. The programme will collaborate with the relevant communication units within PMO, MoA, MLF and MNRLF-Zanzibar and implementing institutions (ASA, TARI, TOSCI, TAFICO, etc) to produce relevant knowledge products and ensure documentation of lessons learnt, best practices and success cases.

Enhancing policy engagement. AFDP will also build on past IFAD's investments in the seed sector and the significant financing in the fisheries and aquaculture sector to facilitate policy engagement, change and reforms in four key areas: (i) policy dialogues and processes to promote and implement favorable legislation and regulations towards increased private sector participation in the seed industry development, and scale up innovations to fight counterfeit seeds; (ii) promotion of 4P concept in PPP regulations as an instrument for market integration of smallholders and rural small and medium-sized enterprises; (iii) review and implementation of Tuna Fisheries Management Plan, including a strong institutional framework, partnerships with international expertise institutions such as IOTC and a sustainable funding arrangement, ideally based on generated fishing revenue; and (iv) review of the National Fisheries and Aquaculture policy of 2015, with the aim of promoting the development of private sector led growth, knowledge-based aquaculture planning, and coordinated development planning of aquaculture through clusters and "aquaparks".

The programme will use different mechanisms for policy engagement and advocacy. These include active participation in ASDP II thematic working groups for sub-sectoral dialogue; the use of AFDP's Steering Committee, inter-ministerial Technical Advisory Committee, and ministerial technical advisory committees, as well as field level implementation through LGA. As the programme directly contributes to the ASDP II, its findings and key results, will be used to enhance policy dialogue with appropriate evidence-based data and information.

b. Innovation and scaling up

Key innovations promoted under this programme will include (i) improved and adapted varieties of beans/pulses, maize and sunflower; (ii) digitization of the seed certification process and leveraging digital tools for coordinating seed demand and supply, and facilitating seed purchase by small holder farmers; (iii) 4P joint ventures for deep-sea fishing vessels and integrated fish processing plants; (iv) various forms of value addition activities in fisheries value chains; and (v) aquaculture cluster growth models in line with emerging demand, and (vi) seaweed production, processing and value addition technologies.

Scaling up: AFDP is designed with a vision of scale in mind³, seeking to make a significant impact by expanding, adapting and sustaining successful interventions to reach over 1.8 million (direct and indirect beneficiaries) people over a six year period. There is considerable potential for scaling-up programme interventions that deliver favourable outcomes. These will include: (i) expanding the activities of TARI, ASA and TOSCI, and strengthening their capacities for producing and supplying early generation seeds for more crops and beyond the programme area; (ii) deepening the relationship between the public seed entities and private operators in the sector; (iii) further developing the role of small and medium scale enterprises in promoting use of improved seeds; and (iv) working with the large-scale implementers and farmers organisations. In the fisheries sector, the Programme will (i) widely promote the 4P business model for attracting investments in fisheries processing and post-harvest infrastructures; and (ii) develop a scaling-up strategy for deploying the 'aquaculture cluster' growth models and progressively evolving into 'aquaparks' by generating evidence for advocacy and policy engagement.

M. Project Target Group Engagement and Feedback, and Grievance Redress

a. Project Target Group Engagement and Feedback.

The establishment of dialogue platforms with multi-stakeholder groups is part of the programme's strategy for inclusion and participation. Furthermore, different stakeholders' groups will participate in the elaboration of the Annual Workplan and budget (AWPB), the supervision missions and MTR as well as in the various M&E participatory processes. The programme will establish a digital platform for collecting beneficiary feedback and complaints, including through social media (WhatsApp, Facebook and Twitter).

b. Grievance redress.

AFDP will utilize existing formal or informal grievance mechanisms to resolve disputes which may arise. Informal mechanisms include existing committees and or individuals in farmers groups responsible for conflict management to handle disputes. The formal grievance redress mechanisms exist at ward levels where the members of ward tribunals are involved in dispute resolution. For criminal cases, the police are required to intervene. Should disputes not be resolved at these levels, then the matter is taken to the district magistrate's, resident magistrate and finally high courts. In addition to AFDP's GRM, communities and individuals who believe that they are adversely affected by AFDP activities may submit complaints to the IFAD Grievance Redress Service (GRS).

N. Implementation plans

a. Supervision, Mid-term Review and Completion plans.

Implementation Readiness and Start-up Plans. Project implementation is planned to start in March 2021. The drafts Programme Implementation Manual (PIM), AWPB, and the draft procurement plan aim to ensure the Programme implementation starts as scheduled, without unnecessary delays during the first Programme year. National and regional start-up workshops will be organized with all Programme stakeholders and implementing partners at all institutional levels to reinforce the implementing modalities of the Programme. An early implementation support mission will be mobilized within the first three months of Programme effectiveness to cover any gaps in the PIM and programme design.

Supervision, Mid-term Review and Completion Plans

Supervision and implementation support missions. IFAD and GoT will conduct joint supervision and implementation support missions at least once a year to assess programme progress and performance, following IFAD procedures and guidelines for supervision missions. The specific objectives will be to: (i) assess the status of Programme implementation and progress; (ii) follow-up on the recommendations of previous supervision mission (s); (iii) provide support as required to the Programme Coordination Unit and implementing partners; and (iv) identify bottlenecks that are delaying implementation and recommend corrective measures. The Implementation support missions will identify and address early emerging issues and build technical capacity for Programme implementation. To the extent possible, and building on experience from MIRVAF and best practices, there will be continuity in the composition of the supervision and implementation support missions in order to increase mission effectiveness.

Mid-Term Review (MTR) and Programme Completion Review. A joint IFAD-GoT MTR will be undertaken in year three of the programme. MTR mission will take stock of the results achieved and critically review all aspects of the programme design so as to recommend amendments as required to adapt to evolving circumstances and improve programme performance and effectiveness. During the final year of programme implementation, a Programme completion review mission

will be carried out to document Programme outputs, outcomes and progress towards the achievement of programme development objectives and impacts. To inform the completion review, the Programme will commission terminal evaluation and impact studies using mixed methods to allow drawing conclusions and lessons of the programme impacts by comparing changes in the livelihoods of beneficiaries that can be attributed to programme interventions against baseline situation or without programme situations.

Programme Completion Review. During the final year of programme implementation, a Programme completion review mission will be carried out to document Programme outputs, outcomes and progress towards the achievement of programme development objectives and impacts. The mission will ascertain the programme impact on rural poverty, relevance, effectiveness, efficiency and sustainability of interventions, as well as programme performance on key indicators such as gender equality and women's empowerment, environmental sustainability and climate change adaptation, innovations and scaling up. To inform the completion review, the Programme will commission terminal evaluation and impact studies using mixed methods to allow drawing conclusions and lessons of the programme impacts by comparing changes in the livelihoods of beneficiaries that can be attributed to programme interventions against baseline situation or without programme situations.

Footnotes

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- [15] UNDP, 2018 Human Development Report <http://hdr.undp.org/en/countries/profiles/TZA>
- [16] Empowerment Index (based pro-WEAI- Women's Empowerment in Agriculture Index)
- [17] Tanzania Demographic and Health Survey. 2015-2016. <https://www.dhsprogram.com/pubs/pdf/FR321/FR321.pdf>
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- [25] See also: http://www.ccardesa.org/sites/default/files/ickm-documents/AgriExperience2016_ReachingFarmersWithHighQualitySeedOfModernVarieties_Report_EN.pdf

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- [29] IFAD 2018. Supporting smallholder seed systems. https://www.ifad.org/documents/38714170/41211727/Seeds_HTDN.pdf/5948954a-d451-438d-a961-ecb37d0998eb
- [30] Although the addition of all beneficiaries gives the total number of 271,000 households, there are overlapping beneficiaries of 11,000 that were deducted. The overlapping beneficiaries include: 48,000 aquafarmers (80% of 6,000) also accessing seeds; 300 agrodealers (30% of 1,000) also being farmers; and 6,000 seaweed producers (40% of 15,000) also having male members being artisanal fishers.
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- [33] Over the past 5 years about 60 new varieties were released and registered in the national seed catalogue for the targeted value chains, including 6 sunflower, 42 maize, 3 soya and 10 beans varieties (see list in Annex xx)
- [34] Considering the risky production conditions in the target area specific hybrids are expected to reach a farmer use level of about 15 percent towards the end of the programme, mainly in the pocket areas with higher potential.
- [35] ASA plays two key roles in the national seed system, including: (i) Basic seed multiplication for public varieties (TARI breeding) and (ii) promote increased private sector participation in the seed industry development through establishment of public-private partnerships or joint ventures in seed production and distribution (see ASA involvement in activity 1.1.4). Although yet exceptional, private seed companies could acquire multiplication and distribution rights on public varieties against payment of royalties.
- [36] See required technical studies for sustainable water availability and safeguard requirements in Annex xx.
- [37] 4Ps involve cooperation between a government, business agents and small-scale producers, who agree to work together to reach a common goal or carry out a specific task while jointly assuming risks and responsibilities, and sharing benefits, resources and competencies. It focuses on the delivery of public or semi-public goods that are not funded by the private sector, to address possible market failures and the perceived risks and transaction costs of working with small producers
- [38] Private-sector partners are expected to allocate matching financial resources. They will be mobilized through TADB, making use of innovative finance instruments and engaging the network of partner financial institutions to help attract and scale up financing in fisheries.
- [39] IFAD 2016. How to do public-private-producer partnerships (4Ps) in agricultural value chains. <https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+ percent284Ps percent29+in+Agricultural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3>
- [40] A small-scale PPP is a public-private partnership whose total Programme value does not exceed US\$ 20 million; GOVERNMENT NOTICE No. 37 Published On 24/1/2020 THE PUBLIC PRIVATE PARTNERSHIP ACT, (CAP.103)
- [41] AFDP will adapt lessons from PPP e-models for seed sector development in Kenya <http://www.seedsectorplatformkenya.com/>
- [42] Average of 5,000 poor households per targeted district
- [43] Main attention will be given to seed preservation and maintenance (between 2 consecutive purchases every 3 years for OPV) and climate smart agricultural practices adapted to local agro-ecological conditions for increased productivity and resilience
- [44] <https://www.oecd.org/aidfortrade/casestories/casestories-2017/CS-70-DFID-G-Soko-market-system%20.pdf> .
- [45] As per the [MDB Methodologies for Tracking Climate Adaptation and Mitigation Finance](#)
- [46] https://www.ifad.org/documents/38711624/40206666/tanzania_afdp_esmf_2020.pdf/19c82660-d8f7-0db8-d6e1-80effb71adf1
- [47] ASDP II National Coordination Unit is composed of: (i) **National Programme Coordinator**, (ii) Experts in: Productivity and Commercialization; Markets and Value chain; (for crops, livestock, and fisheries); (iii) Policy Analyst with Agricultural/Economics background and wide experience of agribusiness; (iv) Monitoring and Evaluation specialist; (v) Communications and knowledge management specialist; (vi) Financial Planning and budgeting specialist; (vii) Accounting and procurement specialist; and (viii) Office Management staff

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 1: Logframe

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

Agriculture and Fisheries Development Programme (AFDP)

Logical Framework

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outreach	1.b Estimated corresponding total number of households members				Programme records and progress reports			Estimated number of household members reached / Corresponding number of household reached
	Household members	0	800000	1300000				
	1.a Corresponding number of households reached				Programme records and progress reports	Annual	PCU	
	Households	0	160000	260000				
	1 Persons receiving services promoted or supported by the project				Programme records and progress reports	Annual	PCU	
	Females	0	60000	130000				
	Males	0	60000	130000				
	Young	0	40000	78000				
Total number of persons receiving services	0	160000	260000					
Project Goal Contribute to inclusive food systems for improved livelihoods, food security, nutrition and resilience	Average income per household in the targeted areas				National statistics, household surveys	Y1, Y3, Y6	PMO	Macro-economic stability and enabling policy environment
	Average increase		10	30				
	Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale				Baseline, mid & end line survey, programme reports	Y1, Y3, Y6	PMO	
	Prevalence	30	25	15				

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Development Objective To enhance productivity, resilience profitability and commercialisation of selected crop seeds, fisheries and aquaculture while devoting particular attention to women empowerment and youth participation	3.2.2 Households reporting adoption of environmentally sustainable and climate-resilient technologies and practices				RIMS baseline and impact surveys, household (and food) survey	Y1, Y3	PCU	Increased public and private investments in ASDP II / Demand for crop seeds and fish increases as projected
	Households	0	25	40				
	1.2.4 Households reporting an increase in production				Baseline, mid & end line survey, programme reports	Y1, Y3, Y6	PCU	
	Households	0	10	70				
	Percentage of Household satisfied with Project supported service				RIMS baseline and impact surveys, household (and food) survey	Y1, Y3	PCU	
Household satisfied with Project supported service	0	50	80					
Outcome Outcome 1. Increased climate-resilient productivity and production from crop seed and fish value chains	Percentage increase in average productivity of maize, sunflower and beans/pulses				Baseline, mid & end line survey, programme reports	Y1,Y2,Y6	Programme and District Council records	Institutional stability and improved technical capacity in ASA, TARI, TOSCI, TAFICO, ZAFICO
	Increase in production of maize, sunflower and beans/pulses	0	10	25				
	Percentage increase in average production of captured fish, farmed fish and seaweed				Baseline, mid & end line survey, programme reports	Y1,Y2,Y6	PCU	
	Percentage increase in fish production	0	15	30				
	Percentage of Households reporting they can influence decision-making of local authorities and project-supported service providers				Baseline, mid & end line survey, programme reports	Y1,Y2,Y3	PCU	
	Percentage of households	0	40	75				
Output Output 1.1. Improved production of high quality seeds for sunflower, beans and maize	Quantities of certified seeds produced per year (tons/year)				Programme Records	Seasonal	PCU Programme and District council records	Enabling environment for private sector's investments in crops
	Quantity of certified seeds produced	1450	5250	13000				

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Output Output 1.2. Quality and quantity of fish production increased	Quantities of fish and fish seeds produced per year (tons/year)				Programme and District council, TAFIICO/ZAFICO records	Quarterly	Directorate of Aquaculture & PCU TAFIICO/ZAFICO	4Ps for deep sea fishing operational and 90 FADs installed
	Quantities of fish and fish seeds produced	15400000	2400000	25500000				
Outcome Outcome 2. Improved marketing and value addition of crop seeds and fish products	Persons reporting utilization of quality crop seeds				RIMS baseline and impact surveys, household (and food) survey	Annual	PCU	Improvement in the enabling business of agriculture environment / Strong producers and marketing organizations and cooperatives
	Persons reporting utilization of quality crop seeds	8	20	50				
	Fish postharvest losses decreased				AOS & Case Studies	Annual		
	Percentage	40	20	15				
	2.2.3 Rural producers' organizations engaged in formal partnerships/agreements or contracts with public or private entities				Baseline, mid & end line survey, programme reports	Annual	Programme and District council records	
	Number of POs	0	12	20				
	1.2.8 Women reporting minimum dietary diversity (MDDW)				RIMS baseline and impact surveys, household (and food) survey	Annual	PCU Programme and District council records	
Women (%)	0	25	60					
Output Output 2.1. Crop seed business established	Number of active agro-dealers and local selling points supported in target area				Programme records	Annual	PCU	
	Active agro-dealers and local selling points supported in target area	0	600	1000				
Output Output 2.2. Strengthened on-farm use of climate-resilient varieties and management practices	Number of agricultural producers trained in climate-smart and better management practices (disaggregated by sex and age)				RIMS baseline and impact surveys, household (and food) survey	Annual	PCU	Availability of good service providers for building capacity of aquaculture clusters and crop farmers
	Number of agricultural producers trained in climate-smart	0	105000	200000				

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Output Output 2.3. Improved household nutrition	1.1.8 Households provided with targeted support to improve their nutrition				Baseline, mid & end line survey, programme reports	Annual	Programme and District council records	
	Household members benefitted	0	35000	110000				
Output Output 2.4. Fish postharvest loss reduction and value addition	Number of processing or storage facilities constructed or rehabilitated				Programme records	Annual	Directorate of capture fisheries and service provider	Processing and storage structures go hand in hand with increase in production
	Processing or storage facilities constructed or rehabilitated	0	60	109				
Output Output 2.5. Fish and seaweed market outlets developed	Number of People organized into fish and seaweed processing and marketing groups (disaggregated by sex and age)				Programme and District council records	Annual	Directorate of capture fisheries	Strong organized Fisher groups will facilitate development of market outlets
	People organized into fish and seaweed processing and marketing groups	0	33400	45000				
Output Output 2.6. Improved financial literacy	1.1.7 Persons in rural areas trained in financial literacy and/or use of financial products and services				Programme records	Annual	PCU	
	Persons in rural areas trained in FL and/or use of FProd and Services (total)	0	0	0				

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 2: Theory of change

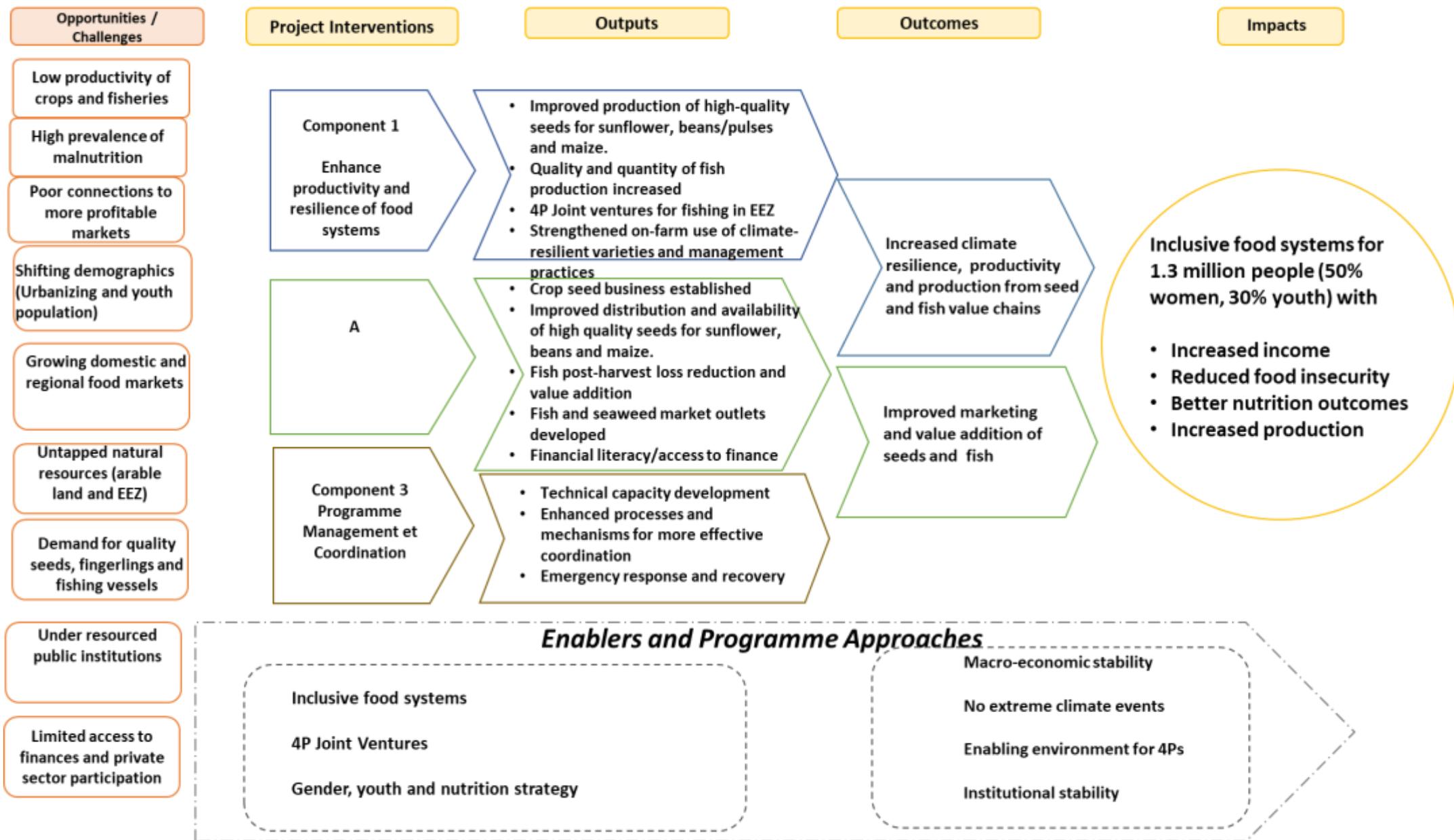
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United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 3: Project cost and financing: Detailed costs tables

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East and Southern Africa Division
Programme Management Department

UNITED REPUBLIC OF TANZANIA
AGRICULTURE AND FISHERIES DEVELOPMENT PROJECT (AFDP)
ANNEX 3: PROJECT COST AND FINANCING

Contents

A. INTRODUCTION	2
B. Programme Costs	2
Table 1: Programme costs by component (and sub-components) and financier	2
Table 2: Programme/project costs by expenditure category and financier	3
Table 3: Programme costs by component and year	3
C. APPENDICES	4
Detailed Table 1: Component 1.1, Page 1 of 6	5
Detailed Table 1: Component 1.1, Page 2 of 6	6
Detailed Table 1: Component 1.1, Page 3 of 6	7
Detailed Table 1: Component 1.1, Page 4 of 6	8
Detailed Table 1: Component 1.1, Page 5 of 6	9
Detailed Table 1: Component 1.1, Page 6 of 6	10
Detailed Table 2: Component 1.2, Page 1 of 6	11
Detailed Table 2: Component 1.2, Page 2 of 6	12
Detailed Table 2: Component 1.2, Page 3 of 6	13
Detailed Table 2: Component 1.2, Page 4 of 6	14
Detailed Table 2: Component 1.2, Page 5 of 6	15
Detailed Table 2: Component 1.2, Page 6 of 6	16
Detailed Table 3: Component 2.1, Page 1 of 3	17
Detailed Table 3: Component 2.1, Page 2 of 3	18
Detailed Table 3: Component 2.1, Page 3 of 3	19
Detailed Table 4: Component 2.2, Page 1 of 2	20
Detailed Table 4: Component 2.2, Page 1 of 2	21
Detailed Table 5: Component 3.1, Page 1 of 2	22
Detailed Table 5: Component 3.1, Page 2 of 2	23
Detailed Table 5: Component 3.2, Page 1 of 1	24

A. INTRODUCTION

1. Costs for AFDP were based on estimates obtained during the remote-based mission in July/August 2020. Key summary tables are available below with a full set available in the appendix. Supporting footnotes are available in each detailed table.
2. **Project period.** The proposed programme is financed over a six-year period, starting in 2021 and ending in 2026.
3. **Price contingencies.** A contingency of USD 0.6 million is provided to compensate for inflation of one percent on the USD. No inflation rate was used for local currency to ensure all allocated funds are utilized without deviation. At implementation, the PMO may revise quantities at the time of spending, if additional funding becomes available due to foreign currency gains. No forecast was made on local currency values.
4. **Taxes and duties.** Most non-equipment items procured under the programme will be purchased locally. VAT (18%) will be financed by the government and all other identifiable taxes and duties, in line with the practice of externally financed project in Tanzania.
5. **Basis for Cost Estimates.** Project costs are estimated as of July 2020 prices. Estimates for costs of works, equipment, salaries, grants, local technical assistance, operation and maintenance were based on recent data provided by the PMO, TAFICO, ZAFICO and in-country mission team members. Professional staff at the PMO will be competitively selected and contracted on an annual basis.
6. All prices for directly procured project related equipment costs are excluded of 18% VAT. This was done to bring the government contribution down to the prearranged figure of USD 7.4 million. The mission estimated the government's contribution at USD 8 million. Various import and excise duties apply for imported goods and services, while international technical assistance is assumed to be free of tax.

B. Programme Costs

7. Total investment and recurrent costs, including physical and price contingencies, is estimated at USD 76.8 million. The programme has three components, the full names are as follows:
 - i. Enhanced productivity of crop seeds, fisheries and aquaculture
 - ii. Improved market access, value addition and private sector development
 - iii. Project Management
8. Table 1 below presents the Programme costs by components, by financier. All contributions are in cash except for government, which are calculated on the basis of taxes foregone.

Table 1: Programme costs by component (and sub-components) and financier
(Thousands of United States dollars)

	The Government		IFAD		Private Sector		Beneficiary		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. C1. Enhanced productivity of crop seeds, fisheries and aquaculture	5,738.5	10.2	42,285.9	75.1	8,094.7	14.4	197.4	0.4	56,316.4	73.3
2. C2. Improved market access, value addition and private sector development	1,491.4	10.3	11,071.8	76.2	453.6	3.1	1,512.1	10.4	14,528.9	18.9
3. C3: Project Management	528.5	8.8	5,455.3	91.2	-	-	-	-	5,983.9	7.8
Total PROJECT COSTS	7,758.4	10.1	58,813.0	76.6	8,548.3	11.1	1,709.5	2.2	76,829.2	100.0

9. The below table presents the full list of expenditure categories, some of which will group together at the time of preparing the financing agreement, to facilitate easier reallocation during implementation, if necessary. All private sector and beneficiary contributions are in-cash, varying between 20-50% of commercial investments, made possible through micro loans and partial credit guarantees.

Table 2: Programme/project costs by expenditure category and financier

	The Government		IFAD		Private Sector		Beneficiary		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Investment Costs										
A. Consultancies	1,342.7	12.2	9,543.3	86.9	-	-	89.9	0.8	10,975.9	14.3
B. Equipment & Materials	4,310.3	11.3	30,738.4	80.3	2,880.5	7.5	350.5	0.9	38,279.8	49.8
C. Grants & Subsidies	4.9	1.1	438.6	98.9	-	-	-	-	443.5	0.6
D. Workshops	47.4	8.1	536.7	91.9	-	-	-	-	584.2	0.8
E. Training	328.0	3.6	3,034.1	33.6	5,667.8	62.8	0.1	-	9,029.9	11.8
F. Unallocated	-	-	-	-	-	-	-	-	-	-
G. Vehicles	159.2	5.9	2,348.5	86.6	-	-	204.0	7.5	2,711.6	3.5
H. Works	1,529.0	12.2	9,977.4	79.4	-	-	1,065.0	8.5	12,571.4	16.4
Total Investment Costs	7,721.6	10.4	56,617.0	75.9	8,548.3	11.5	1,709.5	2.3	74,596.3	97.1
II. Recurrent Costs										
A. Salaries & Allowances	-	-	1,930.8	100.0	-	-	-	-	1,930.8	2.5
B. Operating Costs	36.8	12.2	265.3	87.8	-	-	-	-	302.1	0.4
Total Recurrent Costs	36.8	1.6	2,196.1	98.4	-	-	-	-	2,232.9	2.9
Total PROJECT COSTS	7,758.4	10.1	58,813.0	76.6	8,548.3	11.1	1,709.5	2.2	76,829.2	100.0

10. A majority of funding (85%) is expended in the first three years, with supportive investment and services in the latter years. This is necessary due to the heavy investment needs of the new ventures in deep-sea fishing and supportive marine and coastal area businesses – ice-making, cold rooms, fish feed and fish processing plants. The below table illustrates the disbursement by component, by year.

Table 3: Programme costs by component and year
(Thousands of United States dollars)

	Totals Including Contingencies						
	2021	2022	2023	2024	2025	2026	Total
1. C1. Enhanced productivity of crop seeds, fisheries and aquaculture	17,639.1	16,075.7	13,480.5	4,178.6	3,103.2	1,839.4	56,316.4
2. C2. Improved market access, value addition and private sector development	4,659.0	4,235.5	2,736.7	1,481.6	864.7	551.5	14,528.9
3. C3: Project Management	1,603.5	921.2	970.8	848.6	744.1	895.8	5,983.9
Total PROJECT COSTS	23,901.5	21,232.4	17,187.9	6,508.7	4,711.9	3,286.7	76,829.2

C. APPENDICES

Detailed Table 1: Component 1.1, Page 1 of 6

	Unit	Quantities						Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)							
		2021	2022	2023	2024	2025	2026		Total	2021	2022	2023	2024	2025	2026	Total
I. Investment Costs																
A. C1.1.1. National seed demand and supply coordination																
1. Conduct zonal multi-stakeholder meetings for seeds actors along the value chain(s)	number	1	1	1	1	1	-	5	15,000	15.2	15.2	15.2	15.2	15.2	-	75.9
2. Intermediate technical stakeholder meetings (mid year)	number	1	1	1	1	1	1	6	2,000	2.0	2.0	2.0	2.0	2.0	2.0	12.1
3. ESIA Studies																
Irrigated fields as seed farms <100ha in size /a	Study	2	-	-	-	-	-	2	10,000	20.2	-	-	-	-	-	20.2
Irrigation schemes for EGS, each approx 25ha in size /b	Study	2	-	-	-	-	-	2	7,000	14.1	-	-	-	-	-	14.1
Seed Testing Laboratories (infrastructure & equipment) Seed certification (field an	Study	3	-	-	-	-	-	3	10,000	30.3	-	-	-	-	-	30.3
Subtotal										64.6	-	-	-	-	-	64.6
4. Information system on seed availability and access																
Develop digital platform for seed information system	lump sum	2	1	-	1	-	-	4	25,999	52.5	26.4	-	26.3	-	-	105.2
Annual updating of seed information system	lump sum	-	1	1	1	1	-	4	10,000	-	10.1	10.1	10.1	10.1	-	40.5
Specialized technical studies	lump sum	2	-	1	-	1	-	4	10,000	20.2	-	10.1	-	10.1	-	40.4
Other seed information diffusion - Prepare GAP and disseminate to LGAs	number	3	3	3	3	3	-	15	5,000	15.2	15.2	15.2	15.2	15.2	-	75.9
Other seed information diffusion - Conduct ToT Training to SMS at LGAs /c	number	5	5	5	5	5	-	25	4,500	22.7	22.8	22.8	22.8	22.8	-	113.9
Other seed information diffusion - National information diffusion /d	number	1	1	1	1	1	-	5	10,000	10.1	10.1	10.1	10.1	10.1	-	50.6
Other seed information diffusion - National information diffusion /e	number	6	6	6	6	3	3	30	5,000	30.3	30.4	30.4	30.4	15.2	15.2	151.8
Subtotal										151.0	115.1	98.7	114.8	83.4	15.2	578.3
5. Transport and communication equipment																
Vehicles for field extension activities (LGAs, ASA, TARI , TOSCI) /f	number	1	-	-	-	-	-	1	57,500	57.5	-	-	-	-	-	57.5
Laptop computer	number	2	-	-	-	-	-	2	1,500	3.0	-	-	-	-	-	3.0
Printer	number	2	-	-	-	-	-	2	1,500	3.0	-	-	-	-	-	3.0
Scanner	number	1	-	-	-	-	-	1	1,000	1.0	-	-	-	-	-	1.0
Subtotal										64.6	-	-	-	-	-	64.6
Subtotal										297.4	132.3	116.0	132.1	100.6	17.2	795.5
B. C1.1.2. Innovation development and Early Generation Seed production /g																
1. Field activities																
Supplementary area for breeding and CSA research (maize, sunflower, beans)	hectare	5	5	5	-	-	-	15	3,000	15.2	15.2	15.2	-	-	-	45.6
Upgrade Irrigation systems for prebasic seed (15ha Ilonga, 10 ha Selian)	hectare	15	15	-	-	-	-	30	7,500	113.6	114.1	-	-	-	-	227.7
Field equipment tractor 95 hp /h	unit	2	1	-	-	-	-	3	42,400	85.6	43.0	-	-	-	-	128.6
Field equipment: implements (harrow , seeder, etc) /i	unit	2	1	-	-	-	-	3	72,000	145.4	73.0	-	-	-	-	218.4
Field equipment (trailer, other etc) /j	unit	2	1	-	-	-	-	3	29,660	59.9	30.1	-	-	-	-	90.0
Subtotal										419.8	275.4	15.2	-	-	-	710.3
2. Post-harvest Facilities /k																
Post-harvest seed treatment (2 t/day)	lump sum	-	2	-	-	-	-	2	67,796	-	137.5	-	-	-	-	137.5
Cold rooms for long term germplasm storage /l	unit	-	2	-	-	-	-	2	38,135	-	77.3	-	-	-	-	77.3
Warehouses for seed storage /m	unit	-	2	-	-	-	-	2	70,000	-	142.0	-	-	-	-	142.0
Seed grader	unit	-	2	-	-	-	-	2	30,000	-	60.8	-	-	-	-	60.8
Subtotal										-	417.6	-	-	-	-	417.6
3. Laboratories infra/equipment																
Basic seed labs (Ilonga, Selian)	unit	1	1	-	-	-	-	2	75,000	75.8	76.0	-	-	-	-	151.8
Green/screenhouses for breeding activities /n	unit	2	2	-	-	-	-	4	20,000	40.4	40.6	-	-	-	-	81.0
Upgrade scientific laboratory equipment (molecular biology, breeding, soil) /o	lump sum	-	1	-	-	-	-	1	929,430	-	942.4	-	-	-	-	942.4
Subtotal										116.2	1,059.0	-	-	-	-	1,175.2

Detailed Table 1: Component 1.1, Page 2 of 6

4. Vehicles																
Vehicles for field research activities /p	number	2	2	-	-	-	-	4	57,500	115.0	115.0	-	-	-	-	230.0
Motobikes for field work	number	3	3	3	-	-	-	9	1,694	5.1	5.1	5.1	-	-	-	15.2
Subtotal										120.1	120.1	5.1	-	-	-	245.2
5. Research capacity strengthening																
PHD training (local and abroad universities) /q	per year	2	4	5	4	3	-	18	18,000	36.4	73.0	91.1	72.9	54.6	-	328.0
Specialised short-term scientific training /r	training	4	4	4	4	2	-	18	5,000	20.2	20.3	20.3	20.2	10.1	-	91.1
Participation at conferences and publications /s	workshop	3	3	3	3	3	-	15	5,000	15.2	15.2	15.2	15.2	15.2	-	75.9
Publications	set	2	6	6	6	6	-	26	1,000	2.0	6.1	6.1	6.1	6.1	-	26.3
Subtotal										73.7	114.6	132.7	114.3	86.0	-	521.3
6. Research costs																
Germplasm prospection and maintenance	per year	1	1	1	1	1	-	5	20,000	20.2	20.3	20.3	20.2	20.2	-	101.2
Germplasm characterisation/identification	per year	1	1	1	1	1	-	5	8,000	8.1	8.1	8.1	8.1	8.1	-	40.5
Strategic breeding activities for low land/mid Maize	per year	3	3	3	3	3	-	15	10,000	30.3	30.4	30.4	30.4	30.3	-	151.8
Strategic breeding activities for low land/mid Sunflower (OPV & hybrid)	per year	1	1	1	1	1	-	5	15,000	15.2	15.2	15.2	15.2	15.2	-	75.9
Strategic breeding activities for low land/mid Beans	per year	1	1	1	1	1	-	5	15,000	15.2	15.2	15.2	15.2	15.2	-	75.9
Strategic breeding activities for low land/mid pulses	per year	1	1	1	1	1	-	5	10,000	10.1	10.1	10.1	10.1	10.1	-	50.6
Other support to test adapted CSA practices	per year	1	1	1	1	1	-	5	15,000	15.2	15.2	15.2	15.2	15.2	-	75.9
Breeder seed purification /t	per year	-	2	2	2	2	-	6	5,000	-	10.1	10.1	10.1	-	-	30.4
Molecular Screening of variety identity /u	per year	-	3	3	3	-	-	9	5,000	-	15.2	15.2	15.2	-	-	45.6
Multilocational variety trials	per year	4	9	9	9	9	-	40	5,000	20.2	45.6	45.6	45.5	45.5	-	202.5
Participative selection & multilocational variety trials	per year	4	9	9	9	9	-	40	5,000	20.2	45.6	45.6	45.5	45.5	-	202.5
Variety registration /release	per year	-	-	4	4	4	-	12	3,500	-	-	14.2	14.2	14.2	-	42.5
Subtotal										154.5	231.2	245.1	244.9	219.5	-	1,095.2
7. Enhancing scientific collaboration with regional and international knowledge																
Prebasic seed production (operational capital build-up) /v	lump sum	3	4	6	8	5	-	26	3,000	9.1	12.2	18.2	24.3	15.2	-	78.9
Prebasic seed production (operational capital build-up) /w	lump sum	2	3	3	5	3	-	16	3,000	6.1	9.1	9.1	15.2	9.1	-	48.6
Prebasic seed production (operational capital build-up) /x	lump sum	2	3	3	5	3	-	16	3,000	6.1	9.1	9.1	15.2	9.1	-	48.6
Prebasic seed production (operational capital build-up) /y	lump sum	1	1	2	2	2	-	8	3,000	3.0	3.0	6.1	6.1	6.1	-	24.3
Subtotal										24.2	33.5	42.5	60.7	39.4	-	200.4
8. Promotion and awareness of improved technologies																
Promotion of var adoption: field farmer days	number	3	5	5	5	3	-	21	5,000	15.2	25.3	25.3	25.3	15.2	-	106.3
Participation at Agricultural shows	number	1	2	2	2	1	-	8	5,000	5.1	10.1	10.1	10.1	5.1	-	40.5
Promotion and awareness of improved tech /z	lump sum	2	2	2	2	2	-	10	5,000	10.1	10.1	10.1	10.1	10.1	-	50.6
Promotion and awareness of improved tech /aa	lump sum	2	2	2	2	2	-	10	5,000	10.1	10.1	10.1	10.1	10.1	-	50.6
Subtotal										40.4	55.8	55.7	55.7	40.5	-	248.0
Subtotal										948.9	2,307.1	496.2	475.6	385.4	-	4,613.2
C. C1.1.3. Basic seed multiplication /bb																
1. Irrigation : Agricultural Seed Agency (ASA)																
Irrigation infrastructure at Msimba and Kilimi Seed Farm	hectare	100	50	50	-	-	-	200	8,000	821.3	411.7	411.4	-	-	-	1,644.3
2. Buildings																
Construction of warehouse at Kilimi seed farm	unit	1	-	-	-	-	-	1	376,500	386.5	-	-	-	-	-	386.5
Construction of dry shed at Kilimi and Msimba seed Farm	unit	-	1	1	-	-	-	2	500	-	0.5	0.5	-	-	-	1.0
Construction of farm office and field trainers room at Kilimi seed farm	unit	1	-	-	-	-	-	1	120,500	123.7	-	-	-	-	-	123.7
Construction of Agricultural Mechanical workshop at Kilimi	unit	-	1	-	-	-	-	1	40,000	-	41.2	-	-	-	-	41.2
Construction of field residential for agriculture officers at Kilimi	unit	1	1	1	1	-	-	4	45,000	46.2	46.3	46.3	46.3	-	-	185.0
Renovation of field trainers/trainees residents at Msimba	unit	-	2	2	1	-	-	5	25,000	-	51.5	51.4	25.7	-	-	128.6
Subtotal										556.4	139.5	98.2	71.9	-	-	866.0

Detailed Table 1: Component 1.1, Page 3 of 6

3. Plant, Farm Machinery and equipment:

Procure and instalment of Processing Plant at Msimba and Kilimi	unit	-	2	-	-	-	-	2	374,095	-	753.4	-	-	-	-	-	753.4
Procure of seed dryer at Msimba	unit	-	-	-	1	-	-	1	376,295	-	-	-	378.5	-	-	-	378.5
Procurement of Tractors (195) at Msimba and Kilimi	unit	1	1	-	-	-	-	2	145,184	145.9	146.2	-	-	-	-	-	292.1
Precision Planter at Msimba and Kilimi	unit	1	1	-	-	-	-	2	50,000	50.3	50.3	-	-	-	-	-	100.6
Disc Harrow at Msimba and Kilimi	unit	1	1	-	-	-	-	2	32,574	32.7	32.8	-	-	-	-	-	65.5
Tractor trailer at Msimba and Kilimi	unit	1	1	-	-	-	-	2	50,000	50.3	50.3	-	-	-	-	-	100.6
Boom sprayer Kilimi	unit	-	1	-	-	-	-	1	30,500	-	30.7	-	-	-	-	-	30.7
Rome plough at Msimba and Kilimi	unit	-	1	-	-	-	-	1	8,696	-	8.8	-	-	-	-	-	8.8
Maize Sheller at Msimba and Kilimi	unit	-	1	1	-	-	-	2	35,000	-	35.2	35.2	-	-	-	-	70.5
sunflower seed combine harvester at Msimba and Kilimi	unit	-	-	1	1	-	-	2	120,000	-	-	120.8	120.7	-	-	-	241.5
Ridger at Msimba and Kilimi	unit	-	1	1	-	-	-	2	15,500	-	15.6	15.6	-	-	-	-	31.2

Subtotal

279.1 1,123.4 171.6 499.2 - - 2,073.4

4. Accessories of Agricultural Mechanical Workshop

Procurement of compressor machine	unit	-	1	1	-	-	-	2	7,500	-	7.7	7.7	-	-	-	-	15.4
Procurement of leath machine	unit	-	1	1	-	-	-	2	31,945	-	32.9	32.9	-	-	-	-	65.8
Procurement of drilling machine	unit	-	1	1	-	-	-	2	1,150	-	1.2	1.2	-	-	-	-	2.4
Procurement of Generators	unit	-	1	1	-	-	-	2	21,739	-	22.4	22.4	-	-	-	-	44.8
Procurement of toolboxes	unit	-	1	1	-	-	-	2	800	-	0.8	0.8	-	-	-	-	1.6
Procurement of cutting machine	unit	-	1	1	-	-	-	2	6,826	-	7.0	7.0	-	-	-	-	14.1
Procurement of welding machine	unit	-	1	1	-	-	-	2	2,080	-	2.1	2.1	-	-	-	-	4.3
Procurement of grinding machine	unit	-	1	1	-	-	-	2	1,690	-	1.7	1.7	-	-	-	-	3.5
Procurement of bending machine	unit	-	1	1	-	-	-	2	15,000	-	15.4	15.4	-	-	-	-	30.9
Rehabilitation of the mechanical office and stores	unit	-	1	1	-	-	-	2	18,800	-	19.4	19.3	-	-	-	-	38.7
Gas Cylinders	unit	-	1	1	-	-	-	2	1,043	-	1.1	1.1	-	-	-	-	2.1
Purchase of fuel pump	unit	-	1	1	-	-	-	2	682	-	0.7	0.7	-	-	-	-	1.4
Fuel pump shade	unit	-	1	1	-	-	-	2	1,200	-	1.2	1.2	-	-	-	-	2.5
Maintanance of fuel storage tanks	unit	-	1	1	-	-	-	2	4,565	-	4.7	4.7	-	-	-	-	9.4
Rehabilitation of fuel powder house	unit	-	1	1	-	-	-	2	2,500	-	2.6	2.6	-	-	-	-	5.1

Subtotal

- 121.0 120.9 - - - 242.0

5. Motor Vehicles

Field Supervision Motor cycles	unit	1	-	1	2	-	-	4	1,694	1.7	-	1.7	3.4	-	-	-	6.8
Seed Distribution Vehicles 7-10 tons	unit	-	1	1	1	-	-	3	122,049	-	122.9	122.8	122.8	-	-	-	368.5
Field Supervision car	unit	-	1	1	-	-	-	2	57,500	-	57.9	57.9	-	-	-	-	115.8

Subtotal

1.7 180.8 182.4 126.2 - - 491.1

6. Capacity strengthening

Capacity strengthen in business development model	number	1	1	-	-	-	-	2	100,000	101.0	101.4	-	-	-	-	-	202.4
Capacity strengthened in seed production technologies	number	-	1	1	1	1	1	5	40,000	-	40.6	40.5	40.5	40.5	40.5	40.5	202.5
Supervision, Monitoring and Evaluation	number	1	1	1	1	1	1	6	33,000	33.3	33.5	33.4	33.4	33.4	33.4	33.4	200.4

Subtotal

134.3 175.4 73.9 73.9 73.8 73.8 605.2

7. Basic seed production (operational capital build-up)

Contribution to increased ASA Operational capital investment	lump sum								80.5	19.0	42.2	42.0	27.0	-	-	-	210.7
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Subtotal

1,873.4 2,170.8 1,100.6 813.2 100.8 73.8 6,132.8

D. C1.1.4. Private-sector led bulking-up certified seed

1. A. ASA support for certified seed production (3 VC)

Certified seed production (tons - all target species) /cc	lump sum								549.8	604.9	157.8	101.2	45.3	-	-	-	1,459.0
TA to consolidate seed systems and ASA business plan /dd	lump sum	2	-	1	-	1	-	4	15,132	30.6	-	15.3	-	15.3	-	-	61.2
TA to consolidate seed systems and ASA business plan /ee	lump sum	4	-	2	-	2	-	8	5,404	21.8	-	10.9	-	10.9	-	-	43.7

Subtotal

602.2 604.9 184.0 101.2 71.6 - 1,563.9

Detailed Table 1: Component 1.1, Page 4 of 6

2. Private/Cooperative: Operational capital support for certified seed produc																
Certified seed production (tons - all target species)	lump sum									271.6	458.2	281.5	304.7	171.1	-	1,487.1
Technical Assistance to build sustainable seed systems /gg	pers month	2	-	1	-	1	-	4	15,132	30.6	-	15.3	-	15.3	-	61.2
Technical Assistance to build sustainable seed systems /hh	pers month	4	2	4	2	2	2	16	5,404	21.8	11.0	21.9	10.9	10.9	10.9	87.5
Technical manual for seed production (compilation and diffusion)	lump sum	1	-	-	-	-	-	1	9,511	9.6	-	-	-	-	-	9.6
Training of seed producers/cooperatives /ii	training	10	20	20	20	10	10	90	4,323	43.7	87.7	87.6	87.5	43.7	43.7	393.8
Certification support /jj	lump sum									63.1	169.0	147.7	92.8	65.3	-	537.9
Support seed producer association	lump sum	0.5	0.75	1	1	1	0.5	4.75	5,404	2.7	4.1	5.5	5.5	5.5	2.7	26.0
Subtotal										<u>443.1</u>	<u>730.0</u>	<u>559.4</u>	<u>501.3</u>	<u>311.8</u>	<u>57.4</u>	<u>2,603.1</u>
Subtotal										1,045.3	1,335.0	743.4	602.5	383.4	57.4	4,167.1
E C1.1.5. Seed certification																
1. Laboratory infrastructure (Support TOSCI to construct Multi Purpose Stat																
Civil engineering works (Securing BoQ)	lump sum	-	1	-	-	-	-	1	20,000	-	20.3	-	-	-	-	20.3
Feasibility studies and consultancy	lump sum	1	-	-	-	-	-	1	19,636	19.8	-	-	-	-	-	19.8
Construction work for seed testing laboratory in Mwanza	lump sum	-	0.5	0.5	-	-	-	1	500,000	-	253.5	253.2	-	-	-	506.7
Subtotal										<u>19.8</u>	<u>273.8</u>	<u>253.2</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>546.8</u>
2. Modern laboratory equipment at the National Seed Testing Laboratory (Morogoro) /	lump sum	-	1	-	-	-	-	1	137,000	-	138.9	-	-	-	-	138.9
3. Support TOSCI to Build and Equip Seed Testing Laboratory in Mwanza																
Civil engineering works (Securing BoQ)	lump sum	-	-	1	-	-	-	1	20,000	-	-	20.3	-	-	-	20.3
Feasibility studies and consultancy	lump sum	-	1	-	-	-	-	1	18,733	-	19.0	-	-	-	-	19.0
Construction work	lump sum	-	0.5	0.5	-	-	-	1	300,000	-	152.1	151.9	-	-	-	304.0
Purchase of equipment	lump sum	-	1	-	-	-	-	1	80,000	-	81.1	-	-	-	-	81.1
Subtotal										<u>-</u>	<u>252.2</u>	<u>172.2</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>424.4</u>
4. Support TOSCI to Equip and Rehabilitate Seed Testing Laboratory Arusha																
Consultancy	lump sum	-	1	-	-	-	-	1	10,000	-	10.1	-	-	-	-	10.1
Rehabilitation work for seed testing lab in Arusha	lump sum	-	-	1	-	-	-	1	150,000	-	-	151.9	-	-	-	151.9
Purchase of equipment	lump sum	-	1	-	-	-	-	1	80,000	-	81.1	-	-	-	-	81.1
Subtotal										<u>-</u>	<u>91.3</u>	<u>151.9</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>243.2</u>
5. Rehabilitate cold storage at Arusha Seed Laboratory																
Consultancy	lump sum	-	-	1	-	-	-	1	10,000	-	-	10.1	-	-	-	10.1
Rehabilitation work	lump sum	-	1	-	-	-	-	1	160,000	-	162.2	-	-	-	-	162.2
Subtotal										<u>-</u>	<u>162.2</u>	<u>10.1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>172.4</u>
6. Training on business administration /mm	training	-	10	10	-	-	-	20	5,000	-	50.7	50.6	-	-	-	101.3
7. Develop protocols for crops that do not yet have seed registration and ce																
Stakeholders' meeting to develop seed certification protocols for five tree crops	meeting	-	1	-	-	-	-	1	11,344	-	11.5	-	-	-	-	11.5
Stakeholders meeting to Develop DUS protocols	meeting	-	1	-	-	-	-	1	13,752	-	13.9	-	-	-	-	13.9
Stakeholders meeting to Develop NPT protocols	meeting	-	-	1	-	-	-	1	16,926	-	-	17.1	-	-	-	17.1
Subtotal										<u>-</u>	<u>25.4</u>	<u>17.1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>42.6</u>
8. Expansion participation in OECD Seed Schemes by joining with vegetable																
Preparation of control plots for tomato, onion, bean and sunflower to be evaluated	lump sum	1	-	-	-	-	-	1	25,000	25.3	-	-	-	-	-	25.3
9. Expansion of ISTA Accreditation Scope by adding vegetable (tomato), and																
Training of Official Seed Samplers and Analysts	unit	-	15	15	-	-	-	30	500	-	7.6	7.6	-	-	-	15.2
Training of Authorized Seed Inspectors	lump sum	-	1	-	-	-	-	1	39,548	-	40.1	-	-	-	-	40.1
Subtotal										<u>-</u>	<u>47.7</u>	<u>7.6</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>55.3</u>

Detailed Table 1: Component 1.1, Page 5 of 6

10. Preparation of guidelines for authorization/accreditation system for seed certification	lump sum	-	-	1	-	-	-	1	15,669	-	-	15.9	-	-	-	15.9
11. Training of Licensed Seed Inspectors	lump sum	-	-	1	-	-	-	1	22,350	-	-	22.6	-	-	-	22.6
12. Training of Licensed Seed Samplers	lump sum	-	-	1	-	-	-	1	29,910	-	-	30.3	-	-	-	30.3
13. Training of Licensed Seed Analysts	lump sum	-	-	1	-	-	-	1	27,383	-	-	27.7	-	-	-	27.7
14. Contribute to a joint effort (PPP) to roll-out e-tags for digitized authentic:																
Purchase of Label Printer	unit	1	-	-	-	-	-	1	60,000	60.6	-	-	-	-	-	60.6
Purchase of other Printing Facilities	lump sum	0.5	0.5	-	-	-	-	1	28,749	14.5	14.6	-	-	-	-	29.1
Conducting Pilot Study /pp	lump sum	0.5	0.5	-	-	-	-	1	40,000	20.2	20.3	-	-	-	-	40.5
Subtotal										95.3	34.9	-	-	-	-	130.2
15. Awareness Creation to the public and seed sector stakeholders on the																
TV Programmes	number	6	5	5	5	3	-	24	6,500	39.4	33.0	32.9	32.9	19.7	-	157.9
Radio Programmes	number	5	5	5	5	3	-	23	2,500	12.6	12.7	12.7	12.6	7.6	-	58.2
New spapers	number	6	5	5	5	3	-	24	700	4.2	3.5	3.5	3.5	2.1	-	17.0
Subtotal										56.3	49.2	49.1	49.1	29.4	-	233.1
16. Improve Field Mobility																
Pick-up Double Cabin	number	3	-	-	-	-	-	3	46,900	142.1	-	-	-	-	-	142.1
Hard Top (5 Doors)	number	-	-	3	-	-	-	3	80,000	-	-	243.1	-	-	-	243.1
Subtotal										142.1	-	243.1	-	-	-	385.2
17. Post-Harvest Seed Inspection to ensure that only certified seed is sold to the farm	number	5	5	5	5	4	-	24	7,000	35.4	35.5	35.4	35.4	28.3	-	170.0
Subtotal										374.1	1,161.8	1,086.9	84.5	57.8	-	2,765.0
F. C1.1.6. Institutional reforms in public institutions toward business development	workshop	1	1	1	-	-	-	3	50,000	50.5	50.7	50.6	-	-	-	151.8
G. C1.1.7. Mainstreaming gender empowerment and youth entrepreneurship in agriculture	Study	0.5	0.5	0.5	0.5	0.5	-	2.5	75,000	37.9	38.0	38.0	37.9	37.9	-	189.8
Total										4,627.5	7,195.7	3,631.7	2,145.9	1,065.9	148.4	#####

\a including: laboratory, seed dryer, processing plants, workshops for farm equipment maintenance, water reservoirs, and seed treatment and storage facilities for produced seed, and boreholes

\b including: laboratory, workshops for farm equipment maintenance, water reservoirs, seed treatment and storage facilities, and boreholes.

\c Pamphlet

\d TV series

\e Radio series

\f Prices exclusive of taxes

\g TARI

\h Exclusive of taxes

\i Exclusive of taxes

\j Exclusive of taxes

\k Prices exclusive of taxes

\l Exclusive of taxes

\m 2000 m2

\n 20m x 8m

\o 20m x 30m

\p 4WD

\q person per year

\r 1-2 weeks specialised

\s for VC

\t 2 varieties per year

\u 3 varieties

\v Maize (tonnes)

Detailed Table 1: Component 1.1, Page 6 of 6

\w Sunflower (tonnes)
\x Beans (tonnes)
\y Beans (tonnes)
\z Pamphlet
\aa Radio
\bb ASA
\cc Tonnes: Yr1=1000, Yr2=2662, Yr3=1984, Yr4=1813, Yr5=2000
\dd International
\ee National
\ff 3 VCs
\gg International/Regional Consultant
\hh National consultant
\ii 3 day sessions; 50 persons per session
\jj decreasing supp. for seed certification
\kk Operational and laboratory facilities at National Seed Testing Laboratory (Morogoro)
\ll Lab equipment
\mm 10 persons per training; Enhance technical and management/business capacities of TOSCI institution
\nn i.e. tree and fruit crops such as oil palm, mango, cashew, and avocado
\oo Build a roster of private seed inspectors (training facilities, etc); 3 workshops, each 5 days
\pp Allowances and Fuel Costs
\qq Annual survey

Detailed Table 2: Component 1.2, Page 1 of 6

Unit	Quantities							Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)							
	2021	2022	2023	2024	2025	2026	Total		2021	2022	2023	2024	2025	2026	Total	
I. Investment Costs																
A. C1.2.1. Development of sustainable artisanal marine fisheries production s																
1. Artisanal fishing																
Identification of sites to install Fish Aggregating Devices by TAFIRI /a	Study	1	-	-	-	-	-	1	80,000	82.1	-	-	-	-	-	82.1
Purchase of Fish Aggregating Devices by TAFIRI	unit	10	30	30	10	10	-	90	8,000	82.1	247.0	246.8	82.2	82.2	-	740.4
Installation of FADs (vessel hire, cost of staff)	unit	1	1	1	1	1	-	5	30,000	30.8	30.9	30.9	30.8	30.8	-	154.2
Subtotal										195.1	277.9	277.7	113.1	113.0	-	976.7
2. Strengthening Fisher cooperative societies																
Fishing equipment/Gear exchange programme through a micro loan to 4 Fisher Coop	unit	-	4	4	-	-	-	8	100,000	-	411.7	411.4	-	-	-	823.0
Capacity building of ToT /c	unit	4	4	-	-	-	-	8	56,204	230.8	231.4	-	-	-	-	462.2
TA to develop and produce 1000 Training manual on Fisher cooperatives /d	unit	1	-	-	-	-	-	1	22,970	23.6	-	-	-	-	-	23.6
Subtotal										254.4	643.1	411.4	-	-	-	1,308.8
3. Vehicles																
Double Cabin vehicle /e	unit	4	-	-	-	-	-	4	41,072	168.7	-	-	-	-	-	168.7
Station Wagon vehicle	unit	4	-	-	-	-	-	4	57,500	236.1	-	-	-	-	-	236.1
Fuel @ 500lt/month /f	litre	24,000	30,000	30,000	30,000	30,000	24,000	168,000	1.08	26.6	33.3	33.3	33.3	33.3	26.6	186.5
Vehicle Maintenance /g	unit	18	24	24	24	24	12	126	519	9.6	12.8	12.8	12.8	12.8	6.4	67.2
Subtotal										441.0	46.2	46.1	46.1	46.1	33.0	658.5
4. Equipment fisher cooperatives market linkages																
Laptops for Fisheries Ministry and District Fisheries Officers	unit	7	-	-	-	7	-	14	1,500	10.8	-	-	-	10.8	-	21.6
Desktop Computer /h	unit	8	-	-	-	8	-	16	1,081	8.9	-	-	-	8.9	-	17.8
Scanner /i	unit	2	-	-	-	-	-	2	692	1.4	-	-	-	-	-	1.4
Photocopy machine /j	unit	2	-	-	-	-	-	2	4,323	8.9	-	-	-	-	-	8.9
LCD Projector /k	unit	6	-	-	-	-	-	6	649	4.0	-	-	-	-	-	4.0
Digital Camera /l	unit	5	-	-	-	-	-	5	3,459	17.8	-	-	-	-	-	17.8
Furniture for the ministry	set	1	-	-	-	-	-	1	21,617	22.2	-	-	-	-	-	22.2
Stationaries ministry and district fisheries office	unit	2	2	2	2	2	-	10	4,323	8.9	8.9	8.9	8.9	8.9	-	44.4
Subtotal										82.8	8.9	8.9	8.9	28.6	-	138.0
5. ESIA studies																
Support to artisanal fishing: provision of fishing gear to artisanal fishers (90 FADs)	Study	1	-	-	-	-	-	1	10,000	10.3	-	-	-	-	-	10.3
Additional Borehole at Boma Road for Kingolwira ADC	Study	1	-	-	-	-	-	1	10,000	10.3	-	-	-	-	-	10.3
Subtotal										20.5	-	-	-	-	-	20.5
6. Mainstreaming gender empowerment and youth entrepreneurship in aquaculture	Study	0.5	0.5	0.5	0.5	0.5	-	2.5	75,000	37.9	38.0	38.0	37.9	37.9	-	189.8
Subtotal										1,031.6	1,014.0	782.0	206.0	225.6	33.0	3,292.3
B. C1.2.2. Development of PPP for commercial deep sea fishing																
1. Fishing Vessels																
Purchase of 4 full equipped Marine Fishing Vessels /m	vessel	2	-	2	-	-	-	4	534,000	1,096.4	-	1,098.3	-	-	-	2,194.7
Purchase of 4 full equipped Marine Fishing Vessels /n	vessel	2	-	2	-	-	-	4	1,500,000	3,079.8	-	3,085.1	-	-	-	6,164.9
Busines Model for both ZAFICO and TAFICO vessels	unit	2	-	-	-	-	-	2	12,970	26.6	-	-	-	-	-	26.6
Development of 4P model and feasibility for fishing vessel operations	unit	1	1	-	-	-	-	2	12,970	13.3	13.3	-	-	-	-	26.7
Capacity building on fishing vessel operators for TAFICO	unit	-	20	20	-	-	-	40	19,455	-	400.5	400.1	-	-	-	800.6
Subtotal										4,216.1	413.8	4,583.6	-	-	-	9,213.5

Detailed Table 2: Component 1.2, Page 2 of 6

2. Vessel operation costs for TAFICO																
Fuel for vessels /o	unit	-	20	-	-	-	-	20	36,316	-	747.5	-	-	-	747.5	
Maintenance per trip /p	unit	-	20	-	-	-	-	20	3,459	-	71.2	-	-	-	71.2	
Food /q	unit	-	20	-	-	-	-	20	1,297	-	26.7	-	-	-	26.7	
Bait /r	unit	-	20	-	-	-	-	20	1,729	-	35.6	-	-	-	35.6	
Salaries for 46 staff for at least 6 months /s	pers month	-	12	-	-	-	-	12	6,101	-	75.4	-	-	-	75.4	
Insurance /t	unit	-	4	-	-	-	-	4	12,865	-	53.0	-	-	-	53.0	
Land based Communication equipment w ith vessel	unit	1	-	-	-	-	-	1	5,188	5.3	-	-	-	-	5.3	
Plotter and VMS monitor	unit	1	-	-	-	-	-	1	32,425	33.3	-	-	-	-	33.3	
Subtotal										38.6	1,009.3	-	-	-	1,048.0	
3. Vessel operation costs for TAFICO - private sector contribution /u																
Fuel for vessels /v	unit	-	-	16	16	16	16	64	36,316	-	-	597.5	597.2	597.1	597.1	2,388.9
Maintenance per trip /w	unit	-	-	16	16	16	16	64	3,459	-	-	56.9	56.9	56.9	56.9	227.5
Food /x	unit	-	-	16	16	16	16	64	1,297	-	-	21.3	21.3	21.3	21.3	85.3
Bait /y	unit	-	-	16	16	16	16	64	1,729	-	-	28.4	28.4	28.4	28.4	113.7
Salaries for 46 staff for at least 6 months /z	pers month	-	-	16	16	16	16	64	6,101	-	-	100.4	100.3	100.3	100.3	401.3
Insurance /aa	unit	-	-	16	16	16	16	64	12,865	-	-	211.7	211.6	211.5	211.5	846.3
Subtotal										-	-	1,016.3	1,015.8	1,015.5	1,015.5	4,063.1
4. Vessel operation costs for ZAFICO																
Fuel /bb	unit	-	20	-	-	-	-	20	6,083	-	121.7	-	-	-	-	121.7
Maintanance /cc	unit	-	20	-	-	-	-	20	1,513	-	30.3	-	-	-	-	30.3
Food /dd	unit	-	20	-	-	-	-	20	649	-	13.0	-	-	-	-	13.0
Bait /ee	unit	-	20	-	-	-	-	20	1,297	-	25.9	-	-	-	-	25.9
Salaries for 46 staff for at least six months /ff	unit	-	12	-	-	-	-	12	6,101	-	73.2	-	-	-	-	73.2
Refresher training for Captains and seamen on Deep sea fishing)	unit	1	1	-	-	-	-	2	7,782	7.8	7.8	-	-	-	-	15.6
Insurance @TZS 11565000	unit	-	4	-	-	-	-	4	5,000	-	20.0	-	-	-	-	20.0
Subtotal										7.8	291.8	-	-	-	-	299.6
5. Vessel operation costs for ZAFICO - private sector contribution /gg																
Fuel /hh	unit	-	-	16	16	16	16	64	6,083	-	-	98.1	98.1	98.0	98.0	392.3
Maintanance /ii	unit	-	-	16	16	16	16	64	1,513	-	-	24.4	24.4	24.4	24.4	97.6
Food /jj	unit	-	-	16	16	16	16	64	649	-	-	10.4	10.4	10.4	10.4	41.5
Bait /kk	unit	-	-	16	16	16	16	64	1,297	-	-	20.8	20.8	20.8	20.8	83.0
Salaries for 46 staff for at least six months /ll	unit	-	-	16	16	16	16	64	6,101	-	-	97.6	97.6	97.6	97.6	390.5
Refresher training for Captains and seamen on Deep sea fishing)	unit	-	-	16	16	16	16	64	7,782	-	-	125.5	125.5	125.4	125.4	501.9
Insurance @TZS 11565000	unit	-	-	16	16	16	16	64	5,000	-	-	81.0	81.0	80.9	80.9	323.8
Subtotal										-	-	457.8	457.6	457.5	457.5	1,830.6
6. Implementation of Tuna Fisheries Management Plan /mm	unit									51.3	25.7	25.7	25.7	12.8	12.8	154.2
7. ESIA Studies																
Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and stora	Study	1	-	-	-	-	-	1	40,000	41.1	-	-	-	-	-	41.1
Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and stora	Study	1	-	-	-	-	-	1	40,000	41.1	-	-	-	-	-	41.1
Subtotal										82.1	-	-	-	-	-	82.1
Subtotal										4,396.0	1,740.7	6,083.4	1,499.1	1,485.9	1,485.9	16,691.0

Detailed Table 2: Component 1.2, Page 3 of 6

C. C1.2.3. Increasing aquaculture productivity and output

1. Rehabilitation of infrastructure in the ADCs

Rehabilitation of ponds in the three ADCs	square metres	49,940	62,800	47,100	-	-	-	159,840	40	2,050.7	2,585.4	1,937.5	-	-	-	-	6,573.6
Digging of borehole	number	2	-	-	-	-	-	2	4,323	8.9	-	-	-	-	-	-	8.9
Rehabilitation of Water Reservoir Dam and its supply system at Kingolwira /nn	square metres	2,800	-	-	-	-	-	2,800	38	109.2	-	-	-	-	-	-	109.2
Installation of aquaculture recirculating system at Kingolwira, Mw amapuli and Rubabagwe /pp	lump sum	1	1	1	-	-	-	3	21,617	22.2	22.2	22.2	-	-	-	-	66.7
Water quality equipment at Kingolwira, Mw amapuli and Rubabagwe /pp	lump sum	1	1	-	-	-	-	2	4,987	5.1	5.1	-	-	-	-	-	10.3
Construction of water supply system with pump capacity to discharge 50 lts /s at K	unit	1	1	-	-	-	-	2	21,617	22.2	22.2	-	-	-	-	-	44.4
Construction of waste water treatment system at Mw amapuli and Kingolwira	unit	1	-	-	-	-	-	1	26,122	26.8	-	-	-	-	-	-	26.8
Fish feed mill 0.06-0.08 tons/h one each for Kingolwira, Mw amapuli and Rubabagwe /uu	number	1	1	1	-	-	-	3	12,970	13.3	13.3	13.3	-	-	-	-	40.0
Operating costs of fish feed mills	unit	1	1	1	-	-	-	3	2,000	2.1	2.1	2.1	-	-	-	-	6.2
Operating costs of fish feed mills - private sector contribution	unit	-	-	-	1	1	1	3	1,500	-	-	-	1.5	1.5	1.5	-	4.6
Purchase of regenerative air blowers	unit	3	3	-	-	-	-	6	3,243	10.0	10.0	-	-	-	-	-	20.0
Subtotal										2,270.5	2,660.4	1,975.1	1.5	1.5	1.5	-	6,910.6

2. Breeding and production of broodstock

Design of Hatchery, outreach rooms, hostels, offices and staff residential houses,	lump sum	1	-	-	-	-	-	1	21,617	22.2	-	-	-	-	-	-	22.2
Rehabilitation of hatchery /qq	square metres	4,212	400	443	-	-	-	5,055	600	2,594.4	247.0	273.3	-	-	-	-	3,114.8
Construction of outreach/training rooms /rr	square metres	300	300	-	-	-	-	600	600	184.8	185.3	-	-	-	-	-	370.0
Rehabilitation of farmers training hostels at Kingolwira and Mw amapuli /ss	square metres	-	1,050	-	-	-	-	1,050	600	-	648.4	-	-	-	-	-	648.4
Rehabilitation of Cafeteria for trainees /tt	square metres	400	350	-	-	-	-	750	650	266.9	234.1	-	-	-	-	-	501.1
Rehabilitation of offices /uu	square metres	1,296	496	-	-	-	-	1,792	650	864.8	331.8	-	-	-	-	-	1,196.6
Rehabilitation of Power house	number	-	-	1	-	-	-	1	1,297	-	-	1.3	-	-	-	-	1.3
Fish feed mill for TAFICO /vv	number	-	-	1	-	-	-	1	100,000	-	-	102.8	-	-	-	-	102.8
Fish feed mill operating costs for TAFICO /ww	number	-	-	1	-	-	-	1	10,000	-	-	10.3	-	-	-	-	10.3
Fish feed mill operating costs for TAFICO /xx	number	-	-	-	1	1	1	3	10,000	-	-	-	10.3	10.3	10.3	-	30.8
Subtotal										3,933.1	1,646.6	387.8	10.3	10.3	10.3	-	5,998.4

3. Laboratory equipment for ADCs

Refrigerator /yy	number	1	1	1	-	-	-	3	1,000	1.0	1.0	1.0	-	-	-	-	3.1
Microscope /zz	number	1	1	1	-	-	-	3	6,400	6.6	6.6	6.6	-	-	-	-	19.7
Other accessories /aaa	lump sum	1	1	1	1	1	1	6	1,500	1.5	1.5	1.5	1.5	1.5	1.5	-	9.3
Handheld NIRS for rapid feed quality analysis capable of analysing Crude protein, e	number	1	1	-	-	-	-	2	46,000	47.2	47.3	-	-	-	-	-	94.6
Subtotal										56.4	56.5	9.2	1.5	1.5	1.5	-	126.6

4. Support to fish farmers cooperative societies to access inputs /bbb

	unit	2	2	-	-	-	-	4	100,000	205.3	205.8	-	-	-	-	-	411.2
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5. Support to aquaculture extension

Establishing of Fisheries clusters around the ADCs /ccc	number	1	1	1	-	-	-	3	4,323	4.4	4.4	4.4	-	-	-	-	13.3
Desktop computers	number	5	4	4	-	-	-	13	688	3.5	2.8	2.8	-	-	-	-	9.2
Laptops /ddd	number	8	5	4	-	-	-	17	1,080	8.9	5.6	4.4	-	-	-	-	18.9
Printer	number	1	1	1	-	-	-	3	1,400	1.4	1.4	1.4	-	-	-	-	4.3
Photocopy machine	number	1	-	-	-	-	-	1	6,000	6.2	-	-	-	-	-	-	6.2
LCD Projector	number	1	1	1	-	-	-	3	1,700	1.7	1.7	1.7	-	-	-	-	5.2
Digital Camera	number	1	1	1	-	-	-	3	585	0.6	0.6	0.6	-	-	-	-	1.8
Subtotal										26.8	16.6	15.5	-	-	-	-	58.9

6. Outreach materials

Booklets	number	10,000	10,000	10,000	5,000	5,000	-	40,000	4	41.1	41.2	41.1	20.6	20.6	-	-	164.5
Leaflets	number	20,000	20,000	20,000	20,000	20,000	-	100,000	2	41.1	41.2	41.1	41.1	41.1	-	-	205.6
Media programs, Radio and TV (production and the show)	number	-	2	2	2	2	-	8	4,323	-	8.9	8.9	8.9	8.9	-	-	35.6
Workshops /eee	number	2	2	2	2	2	2	12	7,090	14.6	14.6	14.6	14.6	14.6	14.6	-	87.5
Cabinet for ADC	number	-	3	3	-	-	-	6	1,800	-	5.6	5.6	-	-	-	-	11.1
Outreach room chairs	number	-	40	30	-	-	-	70	130	-	5.4	4.0	-	-	-	-	9.4
Outreach room tables	number	-	20	15	-	-	-	35	173	-	3.6	2.7	-	-	-	-	6.2
White board 5x2 m	number	-	2	2	-	-	-	4	303	-	0.6	0.6	-	-	-	-	1.2
Dining tables for cafeteria	number	-	20	10	-	-	-	30	173	-	3.6	1.8	-	-	-	-	5.3
Cafeteria chairs	number	-	40	36	-	-	-	76	108	-	4.4	4.0	-	-	-	-	8.4
Assorted kitchen utilities for ADCs	number	-	1	1	1	-	-	3	1,729	-	1.8	1.8	1.8	-	-	-	5.3
Subtotal										96.7	130.7	126.2	86.9	85.1	14.6	-	540.1

Detailed Table 2: Component 1.2, Page 4 of 6

7. Vehicles /fff																
4x4 for ADCs	number	1	-	-	-	-	-	1	57,500	57.5	-	-	-	-	-	57.5
Double cabin for outreach for ADCs	number	1	1	1	-	-	-	3	59,322	59.3	59.3	59.3	-	-	-	178.0
4Wd 140 HP Tractor+loader+trailer for ADCs	number	1	-	-	-	-	-	1	81,327	81.3	-	-	-	-	-	81.3
Dam scooper for pond digging for ADCs	number	1	-	-	-	-	-	1	16,949	16.9	-	-	-	-	-	16.9
Compactor 3 HP Petrol engine for ADCs	number	1	-	-	-	-	-	1	3,261	3.3	-	-	-	-	-	3.3
Motorcycles for ADCs	number	5	4	4	-	-	-	13	1,694	8.5	6.8	6.8	-	-	-	22.0
Quad bike for ADCs	number	1	1	1	-	-	-	3	2,966	3.0	3.0	3.0	-	-	-	8.9
Fuel for outreach: vehicles, motor cycles in mainland 500lts per month	litre	5,000	10,000	10,000	10,000	10,000	5,000	50,000	1.08	5.4	10.8	10.8	10.8	10.8	5.4	54.0
Maintenance for vehicles, motorcycles and bikes for outreach /ggg	number	30	60	60	60	60	30	300	519	15.6	31.1	31.1	31.1	31.1	15.6	155.7
Subtotal										250.8	111.0	111.0	41.9	41.9	21.0	577.6
8. Outreach and monitoring activities in Zanzibar																
Development of outreach materials for new technology of seaweed, value addition	lump sum	1	1	1	1	1	-	5	30,000	30.2	30.3	30.2	30.2	30.2	-	151.2
Outreach workshops on seaweed value added products in Zanzibar for women and youth	number	4	4	4	-	-	-	12	4,167	16.8	16.8	16.8	-	-	-	50.4
Quarterly monitoring of activities by Fisheries authority in Zanzibar /jjj	number	3	4	4	4	4	2	21	1,000	3.0	4.0	4.0	4.0	4.0	2.0	21.2
Equip and rehabilitate mariculture training facility for youth /kkk	unit	-	2	-	-	-	-	2	180,000	-	363.3	-	-	-	-	363.3
Training offered to 1000 youths and 15000 women over the period of the program	unit	-	20	20	20	20	20	100	6	-	0.1	0.1	0.1	0.1	0.1	0.6
Rehabilitation of juvenile receiving center and nurseries /lll	number	-	1	-	-	-	-	1	180,000	-	181.6	-	-	-	-	181.6
Experiments on breeding and feeding of mariculture species by ZAFIRI /mmm	lump sum	-	1	1	-	-	-	2	90,000	-	90.8	90.7	-	-	-	181.6
Rehabilitation of a Feedmill house /nnn	square metres	300	300	-	-	-	-	600	650	196.3	196.8	-	-	-	-	393.0
Subtotal										246.2	883.7	141.9	34.4	34.4	2.1	1,342.8
9. ESIA studies																
Aquaculture demonstration centres - at 3 ADC sites, incl borehole and one water s	unit	3	-	-	-	-	-	3	15,000	46.2	-	-	-	-	-	46.2
Subtotal										7,131.9	5,711.5	2,766.6	176.6	174.8	51.0	16,012.5
D. C1.2.4. 4Ps for fish processing plants /ooo																
1. Operations /ppp	unit	1	-	1	-	-	-	2	134,000	134.9	-	135.2	-	-	-	270.1
2. Operations - private sector contribution /qqq	unit	-	1	-	2	2	2	7	60,000	-	60.6	-	121.0	121.0	121.0	423.5
Subtotal										134.9	60.6	135.2	121.0	121.0	121.0	693.6
E. C1.2.5. Increasing seaweed productivity and output																
1. Promoting new seaweed production technology distribution of seaweed																
Establish tissue culture nursery /rrr	lump sum	1	-	-	-	-	-	1	31,547	32.4	-	-	-	-	-	32.4
Capacity building on developing seaweed tissue culture seedling production and en	lump sum	20	21	-	-	-	-	41	216	4.4	4.7	-	-	-	-	9.1
Subtotal										36.8	4.7	-	-	-	-	41.5
2. Support to farmers' development of pilot farms of seaweed in deep waters (ZARI) .	number	40	60	-	-	-	-	100	4,323	177.5	267.0	-	-	-	-	444.5
3. ESIA studies																
Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration fa	unit	1	-	-	-	-	-	1	7,000	7.2	-	-	-	-	-	7.2
Mariculture training centres x 2 (Unguja and Pemba) <360 students	unit	2	-	-	-	-	-	2	7,000	14.4	-	-	-	-	-	14.4
Subtotal										21.6	-	-	-	-	-	21.6
Subtotal										235.9	271.6	-	-	-	-	507.5
F. C1.2.6. Institutional reforms in public institutions toward business development	workshop	1	1	1	-	-	-	3	50,000	51.3	51.5	51.4	-	-	-	154.2
G. C1.2.7. Development of aquaparks approach (Aquaculture cluster growth model) /uuu	day	1	1	1	1	1	-	5	29,661	30.0	30.1	30.0	30.0	30.0	-	150.1
Total										13,011.6	8,880.0	9,848.7	2,032.7	2,037.3	1,690.9	37,501.2

Detailed Table 2: Component 1.2, Page 5 of 6

\a Hiring of vessel for activity
\b Each cooperative to receive at least TZS 231,300,000
\c Training of 16 ToTs for 5 days @TZS 120000 plus training of 400 fishers in 4 landing sites for 3 days @TZS 80000 plus 16 ToTs 3 days @TZS 120000 in the landing sites plus an assortment of training aids TZS 15340000)
\d @ 20,000 TZS per manual
\e 4x4
\f @ 2,500 TZS/lt
\g After every 3000km@ TZS 700000 for four vehicles
\h Four to the ministry and four to the districts
\i For the ministry
\j For the ministry
\k For the ministry and district officials
\l Ministry and ditrict fisheries officers
\m 18m, 35 ton fish capacity for ZAFICO
\n 25m, 69 ton fish capacity for TAFICO
\o 40,000 lts @TZS 2100 per trip, 16 trips in total
\p @TZS 8000000/trip
\q @TZS 3000000/trip
\r Bait @TZS 4000000/trip i.e 5 tons
\s for Captain @ TZS 5782500; Engineer @TZS 2500000; Gear technologist @TZS 1619100; Gear handler @TZS 1610100; Assit. Engineer @TZS 1000000 and 40 crew @TZS 600000)
\t @TZS 16191000/year
\u Beneficiary covers operating costs after PPP arrangement established
\v 40,000 lts @TZS 2100 per trip, 16 trips in total
\w @TZS 8000000/trip
\x @TZS 3000000/trip
\y Bait @TZS 4000000/trip i.e 5 tons
\z for Captain @ TZS 5782500; Engineer @TZS 2500000; Gear technologist @TZS 1619100; Gear handler @TZS 1610100; Assit. Engineer @TZS 1000000 and 40 crew @TZS 600000)
\aa @TZS 16191000/year
\bb @TZS 6700lts @TZS 2100
\cc @TZS 3000000/trip
\dd @TZS 1500000/trip
\ee @TZS 3000000/trip
\ff for Captain @ TZS 5782500; Engineer @TZS 2500000; Gear technologist @TZS 1619100; Gear handler @TZS 1610100; Assit. Engineer @TZS 1000000 and 40 crew @TZS 600000)
\gg Beneficiary covers operating costs after PPP arrangement

Detailed Table 2: Component 1.2, Page 6 of 6

\hh @TZS 670000 @TZS 2100
\ii @TZS 3000000/trip
\jj @TZS 1500000/trip
\kk @TZS 3000000/trip
\ll for Captain @ TZS 5782500; Engineer @TZS 2500000; Gear technologist @TZS 1619100; Gear handler @TZS 1610100; Assit. Engineer @TZS 1000000 and 40 crew @TZS 600000
\mm MCS of deep-sea fishing. Data acquisition and relay to IOTC to be funded by the government
\nn Length 40m x Width 35m x Depth 2m
\oo capacity 30,000 lts of water
\pp Multi-parameter Probe capable of measuring DO, ORP, Salinity, pH.
\qq At Kingolwira @4212 sq m; Boma @400 sq m and Mw amapuli @ 443 sq m
\rr Kingolwira @300 sq m and Mw amapuli @ 300 sq m
\ss each measuring 525 sq m.
\tt Kingolwira @400 sq m and Mw amapuli @350
\uu Kingolwira @800 sq m; stores @400 sq m, and guard house @96 sq m; Mw amapuli @400 sq m and guard house @96 sq m.
\vv Fish Feed mill: one in mainland to boost fish production at farmers level through PPP
\ww Fish Feed mill: one in mainland to boost fish production at farmers level through PPP
\xx Fish Feed mill: one in mainland to boost fish production at farmers level through PPP
\yy Capacity 100 lt single door
\zz Binocular electric powered and 10x 40x and 100x
\aaa Staining reagents, slides
\bbb @TZS 231,300,000 for four groups for two years
\ccc 5 days training of 8 ToT @80000 for each ADC plus transport and training materials TZS 6800000
\ddd each 2 t-bytes
\eee 3 persons undertaking extension service to fishers 5 days amonth for 12 months @80000 plus transport (ADC)
\fff Prices exclude taxes
\ggg 3000km@ TZS 700000 for four vehicles
\hhh @ TZS 69390000
\iii Two facilitators for 5 days @ 120000; transport @2000000; for 250 farmers @25750
\jjj @TZS 17000000
\kkk An assortment of filters, aerators gear technology workshop machines - Fisheries Zanzibar
\lll including desing and equipping the nursery in Pemba - Fisheries Zanzibar
\mmm Purchase of reagents, equipment
\nnn Kingolwira @300 sq m; Mw amapuli @300 sq m
\ooo Equipment and machinery support to TAFICO and ZAFICO, includes installation and training. Exclusive of taxes
\ppp Salaries, running costs for up to one year, until PPP arrangement in place.
\qqq Salaries, running costs for up to one year, until PPP arrangement in place.
\rrr ZAR: an assortment of Tools and equipment @ 63,917,500; consumables @ 9050000
\sss 40 nurseries @500000
\ttt 100 pilot farmers to be supplied with seaweed seeds, ropes and rafts and transport to the plots @TZS10,000,000/plot
\uuu Exclusive of taxes

Detailed Table 3: Component 2.1, Page 1 of 3

	Unit	Quantities						Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)							
		2021	2022	2023	2024	2025	2026		Total	2021	2022	2023	2024	2025	2026	Total
I. Investment Costs																
A. C2.1.1. Regional multi-stakeholder innovation platforms																
Annual Regional seed platform meeting /a	meeting	10	10	10	10	10	5	55	3,243	33.0	33.1	33.0	33.0	33.0	16.5	181.5
Support at regional level for coordination support (Reg Admin) /b	meeting	10	10	10	10	10	5	55	3,243	33.0	33.1	33.0	33.0	33.0	16.5	181.5
Annual Regional and zonal seed situation consolidation /c	meeting	10	10	10	10	10	5	55	1,513	15.4	15.4	15.4	15.4	15.4	7.7	84.7
Technical studies on needs/issues (demand-driven)	lump sum	1	-	1	-	1	-	3	8,647	8.8	-	8.8	-	8.8	-	26.4
Contribution to seed information system/platform (offer/demad)	lump sum	10	10	10	10	10	10	60	4,323	43.9	44.1	44.0	44.0	44.0	44.0	264.0
Seed/innovation fairs /d	meeting	5	10	10	10	10	5	50	2,162	11.0	22.0	22.0	22.0	22.0	11.0	110.0
Regional seed producer and agrodealer association	meeting	-	5	5	-	2.5	2.5	15	4,323	-	22.0	22.0	-	11.0	11.0	66.0
Subtotal										145.0	169.6	178.3	147.4	167.2	106.7	914.2
B. C2.1.2. Promoting supply and access to improved seeds																
1. Enhancing partnerships with national/regional seed producers (TASTA) a																
1. Enhancing partnerships with national/regional seed producers (TASTA) and agri	meeting	1	1	1	1	1	1	6	6,485	6.6	6.6	6.6	6.6	6.6	6.6	39.6
2. Support to agro-dealers netw ork (10 /district) - Business plan	unit	1	-	-	-	-	-	1	1	0.0	-	-	-	-	-	0.0
3. Strengthen capacities theregional/district agrodealer distribution networ																
a. Technical & management training for agrodealers (30 pers x 1 w eek)	training	10	-	-	10	-	-	20	7,500	76.2	-	-	76.3	-	-	152.6
b. Technical and management re-training (30 pers -3 days)	training	-	10	10	-	10	10	40	3,000	-	30.6	30.5	-	30.5	30.5	122.2
c. TA specialized support district agrodealer netw ork development	pers month	1	-	-	1	-	0.5	2.5	15,132	15.4	-	-	15.4	-	7.7	38.5
d. National TA	pers month	2	1	1	2	1	1	8	5,404	11.0	5.5	5.5	11.0	5.5	5.5	44.0
Subtotal										102.6	36.1	36.1	102.7	36.0	43.7	357.2
4. Promoting futher development of last link (village shops)																
a. Technical and business support to village input shops (training and facilitation) -	unit	10	20	30	40	20	10	130	2,000	20.3	40.8	61.1	81.4	40.7	20.3	264.7
b. Grouped farmer access to inputs (training and facilitation)	unit	1	-	-	-	-	-	1	5,000	5.1	-	-	-	-	-	5.1
Subtotal										25.4	40.8	61.1	81.4	40.7	20.3	269.7
5. Information & awarness through agrodealer network																
a. Technical material (poster, sheets etc) for agrodealer (1000 each)	lump sum	40	40	40	40	40	40	240	324	13.2	13.2	13.2	13.2	13.2	13.2	79.1
b. Varietal demonstrations at agrodealer shop (2/dist./yr for 3 years)	lump sum	20	40	60	60	40	20	240	500	10.2	20.4	30.5	30.5	20.3	10.2	122.2
Subtotal										23.3	33.6	43.7	43.7	33.5	23.4	201.3
Subtotal										158.0	117.0	147.5	234.5	116.9	94.0	867.9

Detailed Table 3: Component 2.1, Page 2 of 3

C. C2.1.3. Promoting awareness and demand for improved seeds																
1. Regional Coordination																
1.a. Regional coordination /e	lump sum	10	-	-	10	-	-	20	2,162	22.0	-	-	22.0	-	-	44.0
1.b. Regional coordination /f	lump sum	10	10	10	10	10	5	55	1,297	13.2	13.2	13.2	13.2	13.2	6.6	72.6
Subtotal										35.2	13.2	13.2	35.2	13.2	6.6	116.6
2. District Facilitation																
2.a. District facilitation team /g	lump sum	20	-	-	20	-	-	40	1,081	22.0	-	-	22.0	-	-	44.0
2.b. District facilitation team /h	lump sum	50	100	150	150	100	50	600	1,200	61.0	122.3	183.3	183.2	122.1	61.0	732.9
Subtotal										83.0	122.3	183.3	205.2	122.1	61.0	776.9
3. Ward technical support																
3.a. Ward technical support linked to districts (5 Wards/district) /i	unit	100	100	100	100	-	-	400	432	43.9	44.0	44.0	44.0	-	-	175.9
3.b. Ward technical support linked to districts (5 Wards/district) /j	unit	50	100	150	150	100	50	600	900	45.7	91.7	137.5	137.4	91.6	45.8	549.7
3.c. Ward extension mobility and communication /k	unit	100	100	100	100	-	-	400	605	61.5	61.7	61.6	61.6	-	-	246.3
Subtotal										151.2	197.4	243.1	242.9	91.6	45.8	971.9
4. Small test																
4. Small test seed packages (2 packs 0.5 kg)/new beneficiary) /l	unit	50	100	150	175	125	-	600	540	27.4	55.0	82.5	96.2	68.7	-	329.8
5. On-farm demos																
5. Inputs for on-farm testing and demonstrations (at ward level) /m	unit	500	500	500	500	-	-	2,000	140	71.2	71.3	71.3	71.2	-	-	285.0
6. Lead Farmer Training																
6. Farmer leader training (2x 1 day / involved ward) /n	unit	200	200	200	200	-	-	800	500	101.7	101.9	101.8	101.8	-	-	407.2
7. Farmer leader equipment (1 leader /50 persons) -subsidy smartphone /o	unit	500	1,000	1,500	1,750	1,250	-	6,000	50	25.4	51.0	76.4	89.1	63.6	-	305.4
Subtotal										127.1	152.9	178.2	190.8	63.6	-	712.6
7. ESIA studies																
ICT platforms for dissemination of information on seed availability (improved varieties)	Study	1	-	-	-	-	-	1	7,000	7.1	-	-	-	-	-	7.1
8. Nutrition and Gender mainstreaming																
Gender mainstreaming and nutrition - TOT workshops Basic tools	workshop	0.5	-	-	-	-	-	0.5	60,520	30.8	-	-	-	-	-	30.8
Gender mainstreaming and nutrition - TOT /champions advanced tools	workshop	0.5	-	-	-	-	-	0.5	60,520	30.8	-	-	-	-	-	30.8
Gender mainstreaming and nutrition - workshops with groups /cooperatives	workshop	0.5	-	-	-	-	-	0.5	10,250	5.2	-	-	-	-	-	5.2
Nutrition education and campaigns, training manuals etc	lump sum	0.5	-	-	-	-	-	0.5	172,000	87.4	-	-	-	-	-	87.4
Subtotal										154.2	-	-	-	-	-	154.2
Subtotal										656.2	612.2	771.5	841.6	359.1	113.4	3,354.1
D. C2.1.4. Facilitating synergies with downstream value chain development /q																
1. 1.a. Mapping studies /r	Study	2	4	4	2	-	-	12	4,323	8.8	17.6	17.6	8.8	-	-	52.8
2. 1.b. Mapping studies /s	Study	-	1	-	1	-	1	3	10,808	-	11.0	-	11.0	-	11.0	33.0
3. 2. Promoting partnerships with agro-business and other VC actors	meeting	2	2	2	2	1	-	9	1,297	2.6	2.6	2.6	2.6	1.3	-	11.9
4. 3. Specialized technical services and management assistance to young entrepreneurs	pers month	1	2	2	2	2	1	10	8,647	8.8	17.6	17.6	17.6	17.6	8.8	88.0
5. 4. Disseminating technical and business information	lump sum	1	1	1	1	1	1	6	6,485	6.6	6.6	6.6	6.6	6.6	6.6	39.6
6. 5. Access to finance /t																
Partnership with TADB /u	lump sum									7.0	57.0	57.0	57.0	57.0	57.0	292.0
Financial literacy training of programme beneficiaries	lump sum									10.5	5.3	5.3	5.3	5.3	5.3	36.8
Evaluation of TADB partnership	lump sum	-	-	-	-	-	0.5	0.5	15,000	-	-	-	-	-	7.5	7.5
Subtotal										17.5	62.3	62.3	62.3	62.3	69.8	336.3
Subtotal										44.3	117.8	106.7	108.9	87.8	96.1	561.6
Total										1,003.5	1,016.6	1,204.0	1,332.4	730.9	410.3	5,697.8

Detailed Table 3: Component 2.1, Page 3 of 3

-
- \a One meeting per region
 - \b 10 regions per year
 - \c Done by TASTA/MAFC
 - \d One per region (on rotational basis)
 - \e PC/pack
 - \f Operational coordination
 - \g Bi-weekly work meeting; 3 year support /district; portable PC
 - \h Annual support/cordination
 - \i 2 Tablet-smartphone/w ard
 - \j Operational/Ward/yr
 - \k 5 wards/district
 - \l .000 packs
 - \m 5/w ard/year
 - \n 50 persons
 - \o Smartphone subsidy for efficient technical information dissemination (ICT), e-learning and data collection network
 - \p e-w aste
 - \q e.g. contract farming, market linkages, youth entrepreneurship
 - \r Regional
 - \s Value chain
 - \t Cross-cutting for both C2.1 and C2.2
 - \u

f Includes agribusiness and financial inclusion expert (5 days @ USD 700); Senior agrifinance and financial inclusion expert (15 days @ USD 700/day); USD 100,000 for TA to TADB.

Detailed Table 4: Component 2.2, Page 1 of 2

	Unit	Quantities							Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)						
		2021	2022	2023	2024	2025	2026	Total		2021	2022	2023	2024	2025	2026	Total
I. Investment Costs																
A. 2.2.1. Reducing post-harvest losses /a																
1. Ice making plants for mainland /b	number	2	3	-	-	-	-	5	76,271	157.1	236.7	-	-	-	-	393.8
2. Ice Making Plant for Zanzibar ZAFICO /c	number	1	-	-	-	-	-	1	84,745	87.3	-	-	-	-	-	87.3
3. Operations																
Power 50 Kw h/t+15% /d	unit	13,800	13,800	13,800	13,800	13,800	13,800	82,800	0.2	2.8	2.8	2.8	2.8	2.8	2.8	16.6
Water /e	metric tonne	6	6	6	6	6	6	36	1,200	7.4	7.4	7.4	7.4	7.4	7.4	44.6
Salaries /f	number	6	6	6	6	6	6	36	2,940	18.2	18.2	18.2	18.2	18.2	18.2	109.2
Subtotal										28.4	28.5	28.4	28.4	28.4	28.4	170.4
4. Two cold chain/rooms (40 tons) in Kilwa and Pangani (mainland), for 15,700 youths	number	1	1	-	-	-	-	2	50,000	51.5	51.7	-	-	-	-	103.2
5. Operations																
Power 130 kWh/day /h	unit	187,200	187,200	-	-	-	-	374,400	0.195	37.1	37.1	-	-	-	-	74.3
Salaries /i	pers year	2	2	2	2	2	2	12	1,340	2.8	2.8	2.8	2.8	2.8	2.8	16.6
Subtotal										39.9	39.9	2.8	2.8	2.8	2.8	90.9
6. Operations - private sector contribution																
Power 130 kWh/day /j	unit	-	-	187,200	187,200	187,200	187,200	748,800	0.195	-	-	37.6	37.6	37.6	37.6	150.4
Salaries /k	pers year	-	-	2	2	2	2	8	1,340	-	-	2.8	2.8	2.8	2.8	11.1
Subtotal										-	-	40.4	40.4	40.3	40.3	161.4
7. Construction of drying and processing facilities																
Construction of 80 drying Dagaa drying racks (for 3000 women) total 8,000 m sq m	number	10	30	30	10	-	-	80	1,513	15.4	46.3	46.3	15.4	-	-	123.5
Construction of 10 solar tent drying facilities, for 500 women, total 4000 sq m. /m	number	2	4	4	-	-	-	10	15,132	30.9	61.7	61.7	-	-	-	154.3
Purchase of 4 electric driers for small pelagic with the capacity of 20 tones per day	number	2	-	2	-	-	-	4	10,808	22.0	-	22.0	-	-	-	44.1
Construct of 5 solar tent drying facilities, for 500 women, total 3000 sq m. (Fish cc	unit	1	2	2	-	-	-	5	86,468	88.2	176.4	176.4	-	-	-	441.0
Seaweed milling machines to process 5 tons/day	unit	-	5	-	-	-	-	5	40,000	-	204.0	-	-	-	-	204.0
Construction of fish market to handle 10 tons of fish/day. The area of the market is	unit	1	-	1	-	-	-	2	691,742	705.6	-	705.6	-	-	-	1,411.2
Transport system (10 tons freezer truck) one for ZAFICO and TAFICOP	number	1	-	3	-	-	-	4	100,000	102.0	-	306.0	-	-	-	408.0
Subtotal										964.1	488.4	1,318.1	15.4	-	-	2,786.0
8. Access to finance /p																
Partnership with TADB /q	lump sum									7.0	57.0	57.0	57.0	57.0	57.0	292.0
Financial literacy training of programme beneficiaries	lump sum									10.5	5.3	5.3	5.3	5.3	5.3	36.8
Evaluation of TADB partnership	lump sum	-	-	-	-	-	0.5	0.5	15,000	-	-	-	-	-	7.5	7.5
Subtotal										17.5	62.3	62.3	62.3	62.3	69.8	336.3

Detailed Table 4: Component 2.2, Page 1 of 2

9. ESIA studies																	
Ice plants for smallscale fishers x 8 (cap <50T/day)	Study	8	-	-	-	-	-	-	8	7,000	56.6	-	-	-	-	56.6	
Cold chain: Cold storage facilities (40 t/facility) x2, Refrigerated trucks x2	Study	2	-	-	-	-	-	-	2	7,000	14.1	-	-	-	-	14.1	
Electric driers for small pelagics	Study	4	-	-	-	-	-	-	4	7,000	28.3	-	-	-	-	28.3	
Construction of fish market at Kipumbwi, incl. storage and ice plant	Study	1	-	-	-	-	-	-	1	10,000	10.1	-	-	-	-	10.1	
Dagaa solar powered drying racks x80	Study	1	-	-	-	-	-	-	1	10,000	10.1	-	-	-	-	10.1	
Solar drying tents for seaweed and machines for grinding dried seaweed x10	Study	1	-	-	-	-	-	-	1	10,000	10.1	-	-	-	-	10.1	
Subtotal											<u>129.3</u>	-	-	-	-	<u>129.3</u>	
Subtotal											1,475.1	907.4	1,451.9	149.2	133.7	141.2	4,258.6
B. 2.2.2. Aquaculture field and business school																	
1. Establishment of two Fishers Field School (shamba darasa) in Unguja and Pemba	lump sum	-	2	-	-	-	-	-	2	100,000	-	202.8	-	-	-	-	202.8
2. Establishment of farmers field school for fish farmers to learn from their colleagues	lump sum	1	1	1	-	-	-	-	3	4,323	4.5	4.5	4.5	-	-	-	13.4
3. Gender mainstreaming and nutrition																	
Gender mainstreaming and nutrition - TOT workshops Basic tools	workshop	0.5	-	-	-	-	-	-	0.5	60,520	31.1	-	-	-	-	-	31.1
Gender mainstreaming and nutrition - TOT/champions advanced tools	workshop	0.5	-	-	-	-	-	-	0.5	60,520	31.1	-	-	-	-	-	31.1
Gender mainstreaming and nutrition - workshops with groups/cooperatives	workshop	0.5	-	-	-	-	-	-	0.5	10,250	5.3	-	-	-	-	-	5.3
Nutrition education and campaigns, training manuals etc	lump sum	0.5	-	-	-	-	-	-	0.5	172,000	88.4	-	-	-	-	-	88.4
Subtotal											<u>155.9</u>	-	-	-	-	-	<u>155.9</u>
Subtotal											160.3	207.3	4.5	-	-	-	372.0
C. 2.2.3. Sea weed processing and marketing																	
Solar drier/ Green house for seaweed and Anchovy for Zanzibar	number	-	2	2	-	-	-	-	4	38,135	-	76.3	76.3	-	-	-	152.5
Seaweed processing and marketing /t	lump sum	40	40	-	-	-	-	-	80	50,000	2,020.0	2,028.0	-	-	-	-	4,048.0
Subtotal											<u>2,020.0</u>	<u>2,104.2</u>	<u>76.3</u>	-	-	-	<u>4,200.5</u>
Total											<u>3,655.4</u>	<u>3,218.9</u>	<u>1,532.6</u>	<u>149.2</u>	<u>133.7</u>	<u>141.2</u>	<u>8,831.2</u>

\a Cold chain and drying infrastructures in landing sites and fish markets

\b (block and flake ice) producing 6 Tonnes/ day. 10 hours of operation (Fish cooperative societies through MLF mainland). Prices exclusive of taxes

\c Prices exclusive of taxes

\d (Fish cooperative societies through MLF mainland) (Fish cooperative societies through MLF mainland)

\e 5,000 tons @ TZS 800/pday (5 days operations) (Fish cooperative societies through MLF mainland)

\f Operating engineer @TZS 2,400,000 Manager @TZS 2400000, other workers @TZS 200000 (Fish cooperative societies through MLF mainland)

\g Prices exclusive of taxes

\h (Fish cooperative societies through MLF mainland)

\i Manager @TZS 2400000; assistant @700000 (Fish cooperative societies through MLF mainland)

\j (Fish cooperative societies through MLF mainland)

\k Manager @TZS 2400000; assistant @700000 (Fish cooperative societies through MLF mainland)

\l No running costs) (Fish cooperative societies through MLF mainland)

\m (Fish cooperative societies through MLF mainland)

\n Fish cooperative societies through MLF mainland

\o (Fish cooperative plus District Council)

\p Cross-cutting for both C2.1 and C2.2

\q

\r Includes agribusiness and financial inclusion expert (5 days @ USD 700); Senior agrifinance and financial inclusion expert (15 days @ USD 700/day); USD 100,000 for TA to TADB.

\s includes rehabilitation of 5 ponds, 15x30m and tanks (Department of Fisheries Zanzibar) and a workshop plus equipment

\t @TZS 10000000

\u 100 sq m 80 lines of drying the weed

Detailed Table 5: Component 3.1, Page 1 of 2

	Unit	Quantities						Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)							
		2021	2022	2023	2024	2025	2026		Total	2021	2022	2023	2024	2025	2026	Total
I. Investment Costs																
A. C3.1.1. Coordination and Management																
1. Setting-up and operation of PCU Office																
Inception and programme start up workshop	lump sum	1	-	-	-	-	-	1	50,000	50.4	-	-	-	-	-	50.4
Office equipments /a	lump sum									50.4	10.1	10.1	10.1	10.1	10.1	101.0
Procurement of 3 motor vehicles	unit	3	-	-	-	-	-	3	57,500	174.0	-	-	-	-	-	174.0
Vehicle maintenance and operation	per year	1	1	1	1	1	1	6	30,000	30.3	30.4	30.3	30.3	30.3	30.3	181.9
Laptop	unit	8	-	-	-	-	-	8	1,500	12.1	-	-	-	-	-	12.1
Stationary	set	1	1	1	1	1	1	6	30,000	30.3	30.4	30.3	30.3	30.3	30.3	181.9
Renovation of programme office	lump sum									30.3	-	-	-	-	-	30.3
Renovation of programme office - Zanzibar	lump sum									30.3	-	-	-	-	-	30.3
Subtotal										408.1	70.9	70.8	70.7	70.7	70.7	761.9
2. Programme Baseline Survey																
Conduct baseline survey /b	lump sum	1	-	-	-	-	-	1	150,000	151.3	-	-	-	-	-	151.3
3. Preparation of Programme Reports																
Preparation of Annual Plans and Budget	lump sum	1	1	1	1	1	1	6	20,000	20.2	20.2	20.2	20.2	20.2	20.2	121.3
Programme financial audit	lump sum	1	1	1	1	1	1	6	25,000	25.2	25.3	25.3	25.3	25.3	25.3	151.6
Subtotal										45.4	45.6	45.5	45.5	45.5	45.5	272.8
Subtotal										604.8	116.4	116.3	116.2	116.2	116.2	1,186.0
B. C3.1.2. Monitoring and evaluation																
1. Preparation of Programme Implementation Tools																
Preparations of Programme Implementation Manual	unit	1	-	-	-	-	-	1	60,000	60.6	-	-	-	-	-	60.6
Establishment of M & E System and Manual	unit	1	-	-	-	-	-	1	50,000	50.5	-	-	-	-	-	50.5
Subtotal										111.1	-	-	-	-	-	111.1
2. Supervision missions																
Joint mission (IFAD & GoT)	lump sum	1	1	1	1	1	1	6	50,000	50.5	50.7	50.6	50.6	50.6	50.6	303.6
M & E by Steering Committee	lump sum	1	1	1	1	1	1	6	50,000	50.5	50.7	50.6	50.6	50.6	50.6	303.6
PCU Field Visit	lump sum	1	1	1	1	1	1	6	40,000	40.4	40.6	40.5	40.5	40.5	40.5	242.9
Subtotal										141.4	142.0	141.8	141.7	141.6	141.6	850.0
3. Medium Term Review, Endline Impact Study and Thematic Studies																
Medium Term Review	lump sum	-	-	1	-	-	-	1	50,000	-	-	50.6	-	-	-	50.6
Endline Impact Study	Study	-	-	-	-	-	1	1	100,000	-	-	-	-	-	101.1	101.1
Thematic studies	lump sum	-	1	1	1	-	-	3	50,000	-	50.7	50.6	50.6	-	-	151.9
Social Inclusion Specialist Consultant	lump sum	1	1	1	-	-	-	3	15,000	15.2	15.2	15.2	-	-	-	45.6
Subtotal										15.2	65.9	116.5	50.6	-	101.1	349.3
4. Steering and Technical Committee Meetings																
Conduct biannual Steering Committee meetings	lump sum	1	1	1	1	1	1	6	20,000	20.2	20.3	20.3	20.2	20.2	20.2	121.4
Conduct quarterly Technical Committee meetings	lump sum	1	1	1	1	1	1	6	25,000	25.3	25.3	25.3	25.3	25.3	25.3	151.8
Subtotal										45.5	45.6	45.6	45.5	45.5	45.5	273.2

Detailed Table 5: Component 3.1, Page 2 of 2

5. Programme advocacy, publicity and sensitization.																
Policy engagement of decision-makers /c	workshop	-	1	1	1	-	-	3	30,000	-	30.4	30.4	30.4	-	-	91.2
Documentaries in local radio and TV station	lump sum	1	1	1	1	1	1	6	10,000	10.1	10.1	10.1	10.1	10.1	10.1	60.7
Purchase of media tools	lump sum	1	1	1	1	1	1	6	20,000	20.2	20.3	20.3	20.2	20.2	20.2	121.4
Subtotal										30.3	60.8	60.8	60.7	30.3	30.3	273.3
6. Programme Completion Review																
Preparation of Implementation Completion Report	lump sum	-	-	-	-	-	1	1	75,000	-	-	-	-	-	75.9	75.9
7. ESMS, SOPs, Supervision and monitoring of ESMPs; Annual ESC Reviews; Study										30.3	40.6	40.5	35.4	30.3	25.3	202.4
Subtotal										373.7	354.9	405.1	333.9	247.8	419.8	2,135.2
C. C3.1.3. Communication and Knowledge Management																
Procurement of 50 motorcycles for District Focal Persons Fisheries and Agriculture	lump sum	50	-	-	-	-	-	50	2,000	101.0	-	-	-	-	-	101.0
Laptops for 50 focal persons in Districts	unit	50	-	-	-	-	-	50	1,500	75.8	-	-	-	-	-	75.8
Digital platform, dashboards, GIS tools and digital data collection and transmission	lump sum	0.6	0.1	0.1	0.1	0.1	-	1	100,000	60.6	10.1	10.1	10.1	10.1	-	101.1
Capacity building and M&E meetings for district facilitation teams	lump sum	0.2	0.2	0.2	0.2	0.2	-	1	50,000	10.1	10.1	10.1	10.1	10.1	-	50.6
M&E surveys /d	lump sum	-	1	1	-	-	-	2	50,000	-	50.7	50.6	-	-	-	101.3
Subtotal										247.5	71.0	70.9	20.2	20.2	-	429.8
Total Investment Costs										1,225.9	542.3	592.3	470.4	384.2	535.9	3,751.0
II. Recurrent Costs																
A. Coordination and Management																
Recurrent costs (internet, telephone)	per year	1	1	1	1	1	1	6	10,000	10.1	10.1	10.1	10.1	10.1	10.1	60.7
B. Salaries																
Coordinator	pers year	1	1	1	1	1	1	6	42,000	42.4	42.6	42.5	42.5	42.5	42.5	255.0
Coordinator - Zanzibar	pers year	1	1	1	1	1	1	6	42,000	42.4	42.6	42.5	42.5	42.5	42.5	255.0
Value Chain Specialist	pers year	1	1	1	1	1	1	6	36,000	36.4	36.5	36.5	36.4	36.4	36.4	218.6
M&E Officer	pers year	1	1	1	1	1	1	6	36,000	36.4	36.5	36.5	36.4	36.4	36.4	218.6
Finance Officer	pers year	1	1	1	1	1	1	6	36,000	36.4	36.5	36.5	36.4	36.4	36.4	218.6
Finance Officer - Zanzibar	pers year	1	1	1	1	1	1	6	36,000	36.4	36.5	36.5	36.4	36.4	36.4	218.6
Business VS	pers year	1	1	1	1	1	1	6	36,000	36.4	36.5	36.5	36.4	36.4	36.4	218.6
ESC Specialist	pers year	1	1	1	1	0.5	0.5	5	36,000	36.4	36.5	36.5	36.4	18.2	18.2	182.2
Supporting staff	pers year	2	2	2	2	2	2	12	12,000	24.2	24.3	24.3	24.3	24.3	24.3	145.7
Subtotal										327.2	328.5	328.1	327.9	309.5	309.5	1,930.8
C. Operation and maintenance																
Motorbike O&M/e	per year	1	1	1	1	1	1	6	30,000	30.2	30.3	30.2	30.2	30.2	30.2	181.4
Office running cost /f	per year	1	1	1	1	1	1	6	10,000	10.0	10.0	10.0	10.0	10.0	10.0	60.0
Subtotal										40.2	40.3	40.2	40.2	40.2	40.2	241.4
Total Recurrent Costs										377.5	378.9	378.5	378.2	359.9	359.9	2,232.9
Total										1,603.5	921.2	970.8	848.6	744.1	895.8	5,983.9

\a i.e. Laptop, Tabs, Desktop, Scanners, Printers, ACs, furniture.

\b Both mainland and Zanzibar

\c Linking Steering Committees and Interministerial meetings

\d Core indicator surveys for baseline, MTR and endline studies.

\e 50 mbikes @ 1 litre per 50 km= 10 litres or 500km per month @ \$1.08 plus maintenance.

\f Communication, internet, stationary, software licenses.

Detailed Table 5: Component 3.2, Page 1 of 1

	Unit	Quantities						Cost (US\$)	Totals Including Contingencies (US\$ '000)							
		2021	2022	2023	2024	2025	2026		Total	2021	2021	2022	2023	2024	2025	2026
I. Investment Costs																
A. C3.2. Emergency recovery and resilience post COVID-19																
Emergency recovery and resilience post COVID-19	lump sum	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Total									-	-	-	-	-	-	-	-

- END -

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 4: Economic and Financial Analysis

Mission Dates: 31 Mays-26 June 2020

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East and Southern Africa Division
Programme Management Department

UNITED REPUBLIC OF TANZANIA
Agriculture and Fisheries Development Project
Project Design Report (PDR)
Annex 4: Economic and Financial Analysis

Table of Contents

I. INTRODUCTION.....	4
II. KEY ASSUMPTIONS.....	4
III. PROJECT BENEFITS	4
IV. FINANCIAL AND ECONOMIC MODELS - Agriculture.....	5
V. FINANCIAL AND ECONOMIC MODELS – Fisheries and Aquaculture	6
VI. Project Level Analysis – Financial and Economic.....	9
VII. Sensitivity Analysis.....	9

List of Tables

Table 1: Certified seed production (metric tonnes)	5
Table 2: Share of certified production by ASA and private sector, in the project area.....	5
Table 3: Cumulative area using improved seed for cropping (in ha)	6
Table 4: Crop activity financial indicators	6
Table 5a: Deep-sea vessels (18m) key financial indicators, after financing.....	7
Table 5b: Deep-sea vessels (25m) key financial indicators, after financing.....	7
Table 6: Area of ponds and rate of growth in production of fingerlings and fish, by type,	8
Table 7: ADC Financial Indicators	8
Table 8: FIRR and EIRR for Tilapia Fish Grow-out ponds.....	9
Table 9: Financial and Economic Switching Value.....	9
Table 10: Sensitivity analysis of financial results	9
Table 11: Sensitivity analysis of economic results	10

Appendices:.....	11
Appendix 1: Agriculture Dashboard	12
Appendix 2: Aquaculture Dashboard.....	13
Appendix 3: Conversion Factors.....	14
Appendix 4: Financial and Economic Prices	15
Appendix 5: Crop Aggregation Model	16
Appendix 6: Maize Financial Crop Model.....	18
Appendix 7: Sunflower Financial Crop Model	19
Appendix 8: Beans Financial Crop Model.....	20
Appendix 9: Pulses Financial Crop Model	21
Appendix 10: Crop Model Summary.....	22
Appendix 11: Farm Model	23

Appendix 12: ASA Model – Seed multiplication	24
Appendix 13: Fish Aggregating Devices (FADs).....	25
Appendix 14: Deep-Sea Fishing Vessels 18m – Key Financial Indicators, after financing	26
Appendix 15: Deep-Sea Fishing Vessels 18m – Key Financial Indicators, after financing	26
Appendix 16: ADCs Financial Indicators.....	27
Appendix 17: Tilapia Fish Grow-Out Ponds	28
Appendix 18: Ice-making Plants	29
Appendix 19: Incremental benefits	30
Appendix 20: Financial Costs	31
Appendix 21: Economic values	32
Appendix 22: Programme-Level Financial Analysis	33
Appendix 23: Programme-Level Economic Analysis.....	34
Appendix 24: Sensitivity Analysis – Financial	35
Appendix 25: Sensitivity Analysis – Economic	36

I. INTRODUCTION

1. This annex presents the *ex-ante* economic and financial analysis (EFA) of the project during a remote-based (virtual) mission. The analysis makes an effort to draw a causal link between project activities and targeted outcomes, by capturing highlights of the benefits associated with investing in seed production in agriculture and fisheries and aquaculture sectors in deep-sea, coastal and inland areas, while considering sensitivity to specific project-related risks.

II. KEY ASSUMPTIONS

2. **Data sources and general assumptions.** The data used in the analysis was collected with the aid of interview questions prepared by the remote-based and in-country, field-based PDT mission members, who also executed the guiding questions, during the field mission of July 2020. During the field mission, stakeholder meetings were held with community groups, producer organisations, agrodealers, private sector seed companies and local farm enterprises as well as regional and local government officials, while respecting protocols on social distancing. The government technical team, mission estimates and other projects in Tanzania also served as sources of information and data for the analysis.
3. **Prices.** Input and output prices are in constant 2020 terms. Financial prices were collected during the remote-based mission in July-August 2019 and their economic values were calculated by using a standard conversion factor (SCF) of 1.12 for imported goods, an SCF of 0.89 for exported agricultural products, a shadow wage rate factor of 0.95 and a shadow conversion factor of 1.11. Family labour was valued using published and publically available information on wage rates.¹
4. **Discount rate.** Mission findings reported commercial bank lending rates of 19%, on deposits a rate of 8%, which suggests an interest rate spread of 9%. According to the World Bank, the average interest rate spread in Tanzania for the past 5 years was 6.7%. The analysis uses a discount rate of 9% for the financial analysis and a 6% discount rate for the economic analysis, as commonly used in international development projects.

III. PROJECT BENEFITS

5. **AFDP quantifiable benefits.** Two main technical components of the Project are: (i) enhanced productivity of crop seeds, fisheries and aquaculture, (ii) improved market access, value addition and private sector development. Component three covers project management and coordination.
6. The principal quantifiable benefits of the project are:
 - a. greater integration of smallholder seed producers and agro-dealers into wholesale and retail seed value chains;
 - b. smallholder farmers adopting improved seeds, resulting in increased yields of food crops and farmed fish, and a reduction in the 'yield gap';
 - c. improved pre- and post-harvest handling of crop seed and fish on-farm and off-farm, in markets, resulting in reduced losses;
 - d. increased crop and fish consumption;
 - e. improved access to financial services by members of farmer organizations and rural entrepreneurs; and
 - f. adoption of sustainable fishing practices and technologies to reduce fishing pressure in coastal waters.

¹ <https://africapay.org/tanzania/salary/minimum-wages/6185-mainland-agricultural-services>

Information gaps for some of the quantifiable benefits remain and highlighted in this document for further elaboration during implementation.

IV. FINANCIAL AND ECONOMIC MODELS - Agriculture

7. **Seed production.** The project supports three prominent state and parastatal institutions in the field of seed production and multiplication - TARI, ASA and TOSCI. TARI as the main producer of pre-basic seed, ASA for basic and certified seed and TOSCI as the seed-certifying agency.
8. **ASA and private sector.** The objective of the project is to assist ASA to crowd-in the private sector to produce seed for crops types and locations that are failed by the market due to the cost of outreach or lack of appetite for improved seed by smallholder farmers, since most seed producers focus on commercial farmers. Improved access to genetic material by the private sector seed producers through ASA will stimulate the provision of improved climate smart varieties to smallholder farmers through private agrodealers and village shops. The analysis demonstrates the benefit of an initial subsidy and eventual phasing out of the government (project) subsidy to ASA over the lifespan of the project, and the gradual uptake by the private sector – culminating in a total of 13,000 metric tonnes of certified seed by the end of the project’s implementation.²

Table 1: Certified seed production (metric tonnes)

Certified seed	2017	2018	2019	2020	Progression				
					15%	25%	25%	25%	25%
					2021	2022	2023	2024	2025
Maize OPV			600	1,250	2,689	3,164	4,219	5,625	7,500
Sunflower /a			350	700	1,076	1,266	1,688	2,250	3,000
Beans			400	600	717	844	1,125	1,500	2,000
Other pulses			50	75	179	211	281	375	500
Total (tonnes)			1,400	2,625	4,662	5,484	7,313	9,750	13,000

9. The cost of production and revenue per tonne of seed (maize, sunflower, beans and pulses) is factored into the model. Using a financial discount rate of 9%, the financial analysis returns a figure of 4% for the financial internal rate of return (FIRR), a benefit-cost ratio (BCR) of 0.96 and switching values of 4% for benefits and -4% for costs. The investment entails high upfront cost in public goods with major benefits experienced more at the farm level. In contrast, the economic internal rate of return (EIRR) returns a positive figure of 9%, when using a discount rate of 6% with economic prices.

Table 2: Share of certified production by ASA and private sector, in the project area

Certified seed (tonnes)	2019	2020	2021	2022	2023	2024	2025
Total certified seed (tons)	822	1500	4662	5484	7313	9750	13000
Private seed production (tons)	100	500	2000	3500	5500	7750	11000
<i>% share of production</i>	<i>12%</i>	<i>33%</i>	<i>43%</i>	<i>64%</i>	<i>75%</i>	<i>79%</i>	<i>85%</i>
ASA contribution (tons)	722	1000	2662	1984	1813	2000	2000
<i>% share of production</i>	<i>88%</i>	<i>67%</i>	<i>57%</i>	<i>36%</i>	<i>25%</i>	<i>21%</i>	<i>15%</i>

10. **Crop production.** Approximately 300,000 households are predicted to have benefited from improved certified seed by the end of the project, using it on over 500,000 ha of arable land. The below table illustrates the areas cultivated using improved seed, by crop, by year.

² Benefits from certified seed in the fifth year are realised in the following agricultural sixth year or 2026.

Table 3: Cumulative area using improved seed for cropping (in ha)

	<u>Yr-1</u>	<u>Yr-2</u>	<u>Yr-3</u>	<u>Yr-4</u>	<u>Yr-5</u>	<u>Yr-6</u>
Maize	12,000	37,000	90,780	142,060	201,440	260,160
Sunflower	11,667	35,000	70,867	101,400	134,333	173,467
Beans	6,000	15,000	25,755	32,415	40,290	52,035
Pulses	938	2,344	5,700	8,719	12,581	16,256
Total area cropped (ha)						501,918
Average are cropped by hh (ha)						1.67
Total no of beneficiary hh						300,550

11. **Crop productivity.** A minimal increase in input is reflected in the crop production models, which rely on improved seed as the key change in production. Output increases for all crops is calculated using a 20-25% increase in output per hectare, when compared with the without-project (WOP) scenario, which in this case uses published data, including FAO stats for Tanzania, and mission estimates. Seed demand is estimated using an adoption rate that differs by crop (between 20-50%), seed losses, and amount of seed set-aside each year by the farmer, renewal rates every 3-5 years and area cultivated. The financial calculations return a Net Present Value (NPV) of USD 113 per hectare for maize, for sunflower USD 198 per hectare, for beans USD 150 per hectare and for pulses USD 31 per hectare. The IRR does returns a figure 23% for maize, 50% for sunflower, 34% for beans and 18% for beans, per hectare.

Table 4: Crop activity financial indicators

Crop	Yields (kg/ha)			Production (gross) revenue			Income without labour (USD/ha)		
	WOP	WP	Incram.	WOP	WP	Incram.	WOP	WP	Incram.
Maize	1,460	1,825	25%	391	489	25%	353	392	11%
Sunflower	1,033	1,291	25%	286	357	25%	260	305	17%
Beans	950	1,140	20%	493	591	20%	449	547	22%
Pulses	850	1,063	25%	367	459	25%	264	327	24%
Crop	Return on family labour			FIRR	NPV	Benefit			
	WOP	WP	Incram.	WP	WP	WP			
Maize	6.82	7.79	14%	23%	113	2.21			
Sunflower	4.21	4.85	15%	50%	198	2.02			
Beans	12.15	10.63	-12%	34%	150	2.70			
Pulses	5.94	5.06	-15%	18%	31	1.94			

12. While no investments by the project are made directly at the farm level, the uptake in improved seed by end-users is an important aspect of the projects ability to generate benefits for the projects justification and is therefore included in the analysis. While the project adopts an adoption rate of 40% for seed, sensitivity analysis suggests an implementation rate of 55% is needed for activities to make a positive return. At a programme level, this has an impact of lowering the FIRR from 19% to 16%.
13. **Farm model.** On the basis of a 1.67 ha plot size, the farm model estimates the potential impact on household income, as a result of adopting one of the projects key tenets – increased uptake of certified seed by smallholder farmers. Improved seed handling and storage, in between years when seed is renewed, will go a long way to ensure farmers are equipped with high quality genetic material for planting in successive years. The model estimates a 20% increase in household income by year 6, once the final year of improved seed by the project is utilised. The estimated FIRR is 61%, the NPV is USD 926 and BCR is at 2.98.

V. FINANCIAL AND ECONOMIC MODELS – Fisheries and Aquaculture

14. **Deep Sea Fishing Vessels – 18m and 25m.** The Government of Tanzania (GoT) has made clear that deep-sea fishing vessels are a key priority for harnessing the country’s seas to its benefit. There is no fleet of deep-sea vessels in the country at present and so this enterprise activity is totally new to the government and to fishers on the mainland and in Zanzibar. The analysis based its calculations on assumptions provided by the two main beneficiaries of the investments: TAFICO and ZAFICO, as well as information and estimates from mission members. The calculations use 25% of the proposed new venture as a counterfactual argument for the without-project scenario, to represent the potential opportunity cost of operating a smaller operation with lower investment need and overheads costs.
15. For the 18-metre vessel, the FIRR before financing is a modest 28% over a 10-year discount period and 32% over a 20-year discount period. Both are provided to understand the impact of operations over the long-term. The analysis assumes 100% grant funding, as requested by the GoT for financing of the vessels by the project, with some contribution through a PPP (Public Private Partnership) arrangement. While the details of the model for the PPP arrangements remains undefined, the analysis assumes a 20% contribution by the beneficiary in the form on a long-term loan. A combination of loan, and crowding in of the private sector, has a positive impact on the cash flow of operations in the early years, as operation reach for growth in financial terms.

Table 5a: Deep-sea vessels (18m) key financial indicators, after financing.

Key Financial Indicators After Financing	<u>10-years</u>	<u>20-years</u>
FIRR After Financing	25%	34%
NPV	747,592	3,013,197
NPVb	5,036,829	9,603,008
NPVc	1,652,125	2,181,918
BCR	3.05	4.40
Switching value (benefit)	-0.67	-0.77
Switching value (cost)	2.05	3.40

16. A similar outcome unfolds for the 25-metre deep-sea vessels, when all four of the vessels are used to aggregate financial benefits in the analysis. The table below summarizes the estimated returns for the 25-metre vessels, based on data from mission team members and the government technical team.

Table 5b: Deep-sea vessels (25m) key financial indicators, after financing.

Key Financial Indicators After Financing	<u>10-years</u>	<u>20-years</u>
FIRR After Financing	31%	40%
NPV	1,436,706	8,988,461
NPVb	9,219,709	17,482,377
NPVc	3,319,277	4,219,838
BCR	2.78	4.14
Switching value (benefit)	-0.64	-0.76
Switching value (cost)	1.78	3.14

17. **Fish Aggregation Devices (FAD).** This is an important part of the projects outreach to artisanal fishers along coastal waters. In total 90 devices are budgeted for, with each device expected to catch around 6 metric tonnes of tuna fish per year or 550 tonnes in total. These devices help fishers to reduce their search for fish, reducing fuel costs and time taken to make a catch. A model based on parameters by end beneficiaries and mission estimates used the cost of devices, including the cost of device installation to depict a 25% improvement in productivity

when compared to the WOP scenario. Against the WOP scenario, the model returns a FIRR figure of 19.3% and an NPV of USD 1,355,764.

18. **Aquaculture Development Centers (ADC).** The model captures the financial and economic benefits of all three centers into one model, with investment costs derived from the Costab files. Maintaining brood stock and ensuring the continued growth of fingerlings is a key aspect of the services that the ADCs will provide to small aquaculture farmers, to ensure they receive better inputs and the incentives to utilise idle ponds.
19. The model takes the total potential area under command for use as nursery ponds at 12,200 sq m and 104,000 sq m for grow-out ponds. These figures are interlinked, with 30-40-30 percent increases in the first three years of the project interventions, as per the table below. Another key assumption of the model is the stocking of 200 fingerlings per sq m, in two cycles per month, for 12 months of the year and a food conversion ratio of 1.6. For the grow-out ponds, a stocking density of four units per sq m and a FCR of 1.5 is used.

Table 6: Area of ponds and rate of growth in production of fingerlings and fish, by type,

Area of ponds producing fingerlings/fish, by type, per year					
Sq m of ponds	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
% increase per year	30%	40%	30%		
Cumulative %	30%	70%	100%	100%	100%
Breeding ponds	4,200	9,800	14,000	14,000	14,000
Broodstock ponds	9,000	21,000	30,000	30,000	30,000
Nursery ponds (fingerlings)	3,660	8,540	12,200	12,200	12,200
Grow-out ponds (fish)	31,200	72,800	104,000	104,000	104,000
Total	48,060	112,140	160,200	160,200	160,200

Note: Highlighted (in bold) areas are focus of ADC production and connection with aquaculture farmers.

20. The activity requires sound financial management with additional working capital to finance operations on a long-term viable basis. In its current form, while using a discount rate of 9%, the model returns a FIRR of 10% and an NPV of USD 3,584,443, after financing.

Table 7: ADC Financial Indicators

Key Financial Indicators After Financing	<u>20-years</u>
FIRR After Financing	10%
NPV	3,584,443
NPVb	26,349,202
NPVc	17,076,022
BCR	1.54
Switching value (benefit)	-0.35
Switching value (cost)	0.54
Discount rate (%)	0.09

21. **Tilapia Grow-out Ponds.** As with the take-up of improved seed by crop farmers for improved crop productivity, benefits of investments in aquaculture are captured downstream by the adoption of higher quality fingerlings by fish farmers with existing ponds. The model assumes that improved availability of improved inputs will incentivise existing farmers to rekindle idle ponds operating at 10% capacity for commercial purposes. While the project aims at supplying approximately 25 million fingerlings by 2025, the model assumes a total of 104,000 sq m of fish ponds becoming economic active once more by adopting the improved inputs that include feed and fingerlings of Tilapia. The analysis assumes an average pond size of 40x50m, or around 57 ponds in total.
22. The two boxes below show how the financial analysis deducts home consumption figures from the sales revenue, while the economic analysis includes home consumption by putting an economic value on the level of consumption. This explains the exceptional difference in the

two. Home consumption is calculated at approximately six fish per member of the household, including extended family, plus food loss.

Table 8: FIRR and EIRR for Tilapia Fish Grow-out ponds

Internal rate of Return (EIRR)	10.2%
Net Present Value (NPV) at 0.09	71,951
Benefit - cost ratio	0.9

Internal rate of Return (EIRR)	48.6%
Net Present Value (NPV) at 0.06	2,953,201
Benefit - cost ratio	1.4

23. **Ice-making facility.** In total, six ice-making facilities producing six tonnes of ice per day are envisaged under the project. These plants will be located at or near the landing sites, to ensure post-harvest loss reduction – a key benefit of the investments, more so than the gains from making ice. The mission estimates that while 40% post-harvest losses may be reduced, the additional revenue where none existed before, justifies the absence of any figures in the WOP scenario. As a result, before financing (by the project), the FIRR analysis returns a figure of 17.5% and an NPV of USD 141,522 over a 10-year discount period or after financing 31.4% FIRR and USD 146,454.

VI. Project Level Analysis – Financial and Economic

24. The financial project-level analysis returns a FIRR of 17% and an NPV of USD 43.9 million, while the economic project-level analysis returns an EIRR of 15% and an NPV of USD 69.2 million. Financial and economic switching values are available in the below tables.

Table 9: Financial and Economic Switching Value

Financial Switching values	Appraisal	Switching	% change
Incremental benefits	28,399	-15,569	-155%
Incremental costs	-15,569	28,399	-282%
BCR	-1.82		

Economic Switching values	Appraisal	Switching	% change
Incremental benefits	86,915	17,744	-80%
Incremental costs	17,744	86,915	390%
BCR	4.90		

VII. Sensitivity Analysis

25. The analysis uses 170 different scenarios to test the robustness of the project against standard risks associated with increases in cost, reduction in benefits, time lags and reduced adoption rates, and on the upside, it tests for improved benefits or reduction in costs. Using a financial discount rate, the minimum adoption rate needed for a positive returns appears as 32% while using an social discount rate, the adoption rate is 23%. The project appears capable of achieving such a figure; however, a time lag of one or two years would make positive returns a difficult prospect.
26. Using the financial discount rate of 6% and 9%, the following results are obtained:

Table 10: Sensitivity analysis of financial results

Net cash flow	9% ('000 USD)	
	IRR @ 0.09	NPV @ 0.09
Base scenario	9%	18
Costs+10%	9%	1,575
Costs+20%	10%	3,132
Costs+50%	11%	7,802
Benefits +10%	9%	-1,537
Benefits +20%	9%	-3,093
Benefits -10%	9%	1,573
Benefits -20%	10%	3,128
Benefits -50%	12%	7,794
1 year timelag in benefits	9%	-2,022
2 year timelag in benefits	8%	-3,858
Adoption rate of crop farming (@ 20%)	-1%	-43,555
Adoption rate of crop farming (@ 40%)	5%	-7,127
Adoption rate of crop farming (@ 60%)	9%	25,312
Adoption rate of crop farming (@ 80%)	12%	51,196
Break-even adoption rate of 32% implem	6%	0

Table 11: Sensitivity analysis of economic results

Net cash flow	6% ('000 USD)	
	IRR @ 0.06	NPV @ 0.06
Base scenario	6%	58
Costs+10%	6%	-1,716
Costs+20%	6%	-3,491
Costs+50%	5%	-8,814
Benefits +10%	6%	1,838
Benefits +20%	6%	3,618
Benefits -10%	6%	-1,722
Benefits -20%	5%	-3,502
Benefits -50%	4%	-8,843
1 year timelag in benefits	5%	-5,859
2 year timelag in benefits	4%	-11,431
Adoption rate of crop farming (@ 20%)	-1%	-43,555
Adoption rate of crop farming (@ 40%)	5%	-7,127
Adoption rate of crop farming (@ 60%)	9%	25,312
Adoption rate of crop farming (@ 80%)	12%	51,196
Break-even adoption rate of 23% implem	6%	0

Appendices:

Appendix 1: Agriculture Dashboard

Crop	Average area cropped per h/h	No. of beneficiary farmers	Estimated area cropped in 2019/2020 (ha)	Estimated area cropped in 2025 (ha)	Seeding rate kg/ha	Seed Tonnes required	Adoption rate	Use of HYV	Seed loss rate	OPV seed renewal
Maize	0.55	3,454,629	1,900,046	172,040	0.025	4,301	30%	20-25%	20%	3
Sunflower	0.17	3,426,735	582,545	130,333	0.015	1,955	50%	10-15%	20%	3
Beans	0.11	3,514,545	386,600	34,220	0.05	1,711	35%	-	20%	4
Other pulses	0.09	3,541,778	318,760	26,067	0.015	391	20%	-	20%	5

	OPV (tonnes)	Hybrid (tonnes)	Losses (tonnes)	Total (tonnes)	Rounded (tonnes)	Total needed (tonnes)
Maize	3,656	2,581	1,247	7,484	7,500	
Sunflower	1,760	587	469	2,816	3,000	
Beans	1,711		342	2,053	2,000	
Other pulses	391		78	469	500	
Maize (%)	0.57	0.43				

Certified seed (tonnes)	2019	2020	2021	2022	2023	2024	2025
Total certified seed (tons)	822	1500	4662	5484	7313	9750	13000
Private seed production (tons)	100	500	2000	3500	5500	7750	11000
<i>% share of production</i>	12%	33%	43%	64%	75%	79%	85%
ASA contribution (tons)	722	1000	2662	1984	1813	2000	2000
<i>% share of production</i>	88%	67%	57%	36%	25%	21%	15%

Appendix 2: Aquaculture Dashboard

Area of ponds producing fingerlings/fish, by type, per year						Number of fingerlings/fish per year					
Sq m of ponds	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Stocking density (no.)	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
% increase per year	30%	40%	30%								
Cumulative %	30%	70%	100%	100%	100%						
Breeding ponds	4,200	9,800	14,000	14,000	14,000	4					
Broodstock ponds	9,000	21,000	30,000	30,000	30,000	4					
Nursary ponds (fingerlings)	3,660	8,540	12,200	12,200	12,200	200	17,568,000	40,992,000	58,560,000	58,560,000	58,560,000
Grow-out ponds (fish)	31,200	72,800	104,000	104,000	104,000	4	249,600	582,400	832,000	832,000	832,000
Total	48,060	112,140	160,200	160,200	160,200						
Area of ponds, by type, by location						# fingerlings produced at ADC on	17,568,000	40,992,000	58,560,000	58,560,000	58,560,000
Sq m of ponds	Kingowira	Mwamapuli	Rumbabagi			40-55% mortality rate	10,540,800	24,595,200	26,352,000	26,352,000	26,352,000
Nursery ponds	6,800	1,800	3,600			# fingerling Retained at ADC	2,995,200	6,988,800	9,984,000	9,984,000	9,984,000
Growout ponds	28,000	48,000	28,000			# fingerlings to farmers	7,545,600	17,606,400	16,368,000	16,368,000	16,368,000
						Number of farmers	2,120	2,438	2,852	3,423	4,279
						Number of fingerlings /farmer	3,559	7,222	5,739	4,782	3,825

No of production cycles per year, grow-out pond 2
 No of production cycles per month, fingerlings 2
 No. of months of production 12

Appendix 3: Conversion Factors

CONVERSION FACTORS

Official exchange rate	US\$ 1.0=	2,313 TZS
Shadow exchange rate	SER=	2,579
Market exchange rate		
Labour CF:	0.95	
Standard CF:	0.89	1.12

Total Agri-imports US\$	4,175,360
Total Agri-Exports US\$	4,917,346
Exchange rate SDG/USD	2,313
Import duties*	25%
Export duties	0%
Shadow Exchange Rate	2,579
Shadow Exchange rate Factor	1.11

*<https://www.tra.go.tz/images/EAC-CET-2017.pdf> for fish

Tanzania Food Import-Export (2018)*	Export	Import
Animal	417,934	86,581
Vegetable	829,173	1,073,215
Food products	1,183,658	764,528
Hides and skins	21,248	45,296
Agricultural raw materials	145,501	348,845
	2,319,834	1,856,896
	4,917,346	4,175,360

* <https://www.worldbank.org/CountryProfile/en/Country/TZA/Year/2018/TradeFlow/EXPIMP/Partner/all/Product/Total>

Figures for Tanzania	2014	2015	2016	2017	2018	%
Interest rate spread (%)	0.06	0.06	0.05	0.06	0.09	0.068
Deposit interest rate (%)	0.10	0.10	0.01	0.01	0.08	0.060

Source: World Bank Data

T-Bonds TZS* 13.50%

Source: <http://cbonds.com/emissions/issue/758081>

Appendix 4: Financial and Economic Prices

		<i>June 2020</i>					
Official Exchange rate	TZS/USD	2,313					
Shadow exchange rate	TZS/USD	2,579					
Shadow exchange rate factor		1.11					
Labour CF		0.95					
Standard CF		0.89					
Project premium							
Prices	Unit	WP			WP		
		TZS			USD		
		Financial	CF	Economic	Financial	Economic	
Outputs selling value							
Basic seed - sale value per tonne							
Maize	tonne	4,000,000	0.89	3,571,429	1,729	1,729	1,928
Sunflower	tonne	5,000,000	0.89	4,464,286	2,162	2,162	2,410
Beans	tonne	5,000,000	0.89	4,464,286	2,162	2,162	2,410
Pulses	tonne	4,000,000	0.89	3,571,429	1,729	1,729	1,928
Certified seed - sale value per tonne							
Maize	tonne	2,500,000	0.89	2,232,143	1,081	1,081	1,205
Sunflower	tonne	4,000,000	0.89	3,571,429	1,729	1,729	1,928
Beans	tonne	4,000,000	0.89	3,571,429	1,729	1,729	1,928
Pulses	tonne	3,000,000	0.89	2,678,571	1,297	1,297	1,446
Certified seed /kg							
Maize	Kg	2,500	0.89	2,232	1.08		1.20
Sunflower	Kg	4,000	0.89	3,571	1.73		1.93
Beans	Kg	4,000	0.89	3,571	1.73		1.93
Pulses	Kg	3,000	0.89	2,679	1.30		1.45
Local seed (Market or farmer preservation)							
		50%		At the beginning of the cropping season			
Maize	kg	1,163	0.89	1,038	0.50	0.50	0.56
Sunflower	kg	1,200	0.89	1,071	0.52	0.52	0.58
Beans	kg	2,250	0.89	2,009	0.97	0.97	1.08
Pulses	kg	1,500	0.89	1,339	0.65	0.65	0.72
Output (farmer sales)							
Field Crops							
Maize	kg	775	0.89	692	0.34	0.34	0.37
Sunflower	kg	800	0.89	714	0.35	0.35	0.39
Beans	kg	1,500	0.89	1,339	0.65	0.65	0.72
Pulses	kg	1,000	0.89	893	0.43	0.43	0.48
Fisheries							
Tuna - domestic	tonne	20,000,000	0.89	17,857,143	8,647	8,647	9,639
Inputs							
Basic seed - production cost per tonne - WP							
Maize	tonne	4,250,000	1.00	4,250,000	1,312	1,312	1,463
Sunflower	tonne	3,000,000	1.00	3,000,000	1,441	1,441	1,606
Beans	tonne	3,300,000	1.00	3,300,000	1,427	1,427	1,591
Pulses	tonne	3,150,000	1.00	3,150,000	1,434	1,434	1,599
Certified seed - sale value per tonne - WP							
Maize	tonne	3,187,500	1.00	3,187,500	1,378	1,378	1,536
Sunflower	tonne	2,250,000	1.00	2,250,000	973	973	1,084
Beans	tonne	2,475,000	1.00	2,475,000	1,070	1,070	1,193
Pulses	tonne	2,362,500	1.00	2,362,500	1,021	1,021	1,139
Local Farmer Seed - WOP							
Maize - local	kg	1,594	1.00	1,594	0.69	0.69	0.77
Sunflower - local	kg	1,125	1.00	1,125	0.49	0.49	0.54
Beans - local	kg	1,238	1.00	1,238	0.91	0.91	1.01
Certified Seed by farmer - WP							
Maize - OPV	kg	3,188	1.00	3,188	1.38	1.38	1.54
Sunflower - OPV	kg	2,250	1.00	2,250	0.63	0.63	0.70
Beans - OPV	kg	2,475	1.00	2,475	1.63	1.63	1.82
Fertilizer							
Organic manure	ls	50,000	1.00	50,000	38.91	39	43.38
Tools & equipment							
Tools	unit	27,000	1.12	30,240	11.67	11.67	13.01
Sacks	unit	600	1.12	672	0.26	0.26	0.29
Land (rent)	ha	1,000					
Labour							
Skilled labour	TZS	4,615	0.88	4,061	1.76	1.76	1.96
Hired Labour*	TZS	3,846	0.88	3,384	1.46	1.46	1.63
Family Labour	TZS	3,077	0.88	2,708	1.17	1.17	1.30

* <https://africapay.org/tanzania/salary/minimum-wages/6185-mainland-agricultural-services>

Crop	Implementation rate	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7				
Maize	270,000	55%	148,500	<u>Maize</u>	12,000	37,000	90,780	142,060	201,440	260,160		
Ha/hh	0.9				6,600	-357,429	-138,820	-15,624	12,161	230,770	230,770	135,358
					13,750	0	-744,644	-289,209	-32,549	25,336	480,771	480,771
					29,579	0	0	-1,601,878	-622,147	-70,020	54,504	1,034,235
					28,204	0	0	0	-1,527,413	-593,226	-66,765	51,970
					32,659	0	0	0	0	-1,768,678	-686,929	-77,310
					32,296					0	-1,749,019	-679,294
				<u>Total - Maize</u>		-357,429	-883,464	-1,906,710	-2,169,947	-2,175,816	-1,736,668	945,729
Sunflower	150,000	55%	82,500	<u>Sunflower</u>	11,667	35,000	70,867	101,400	134,333	173,467		
Ha/hh	0.5				6,417	-197,804	3,307	89,301	60,178	261,289	261,289	146,172
					12,833	0	-395,608	6,614	178,602	120,355	522,577	522,577
					19,727	0	0	-608,107	10,166	274,536	185,003	803,276
					16,793	0	0	0	-517,682	8,655	233,713	157,493
					18,113	0	0	0	0	-558,373	9,335	252,083
					21,523						-663,492	11,092
				<u>Total - Sunflower</u>		-197,804	-392,301	-512,192	-268,736	106,462	548,425	1,892,694
Beans	45,000	55%	24,750	<u>Beans</u>	6,000	15,000	25,755	32,415	40,290	52,035		
Ha/hh	0.15				3,300	-297,897	61,810	136,173	210,536	-74,808	210,536	210,536
					4,950	0	-446,846	92,714	204,259	315,804	-112,212	315,804
					5,915	0	0	-533,981	110,794	244,090	377,385	-134,093
					3,663	0	0	0	-330,666	68,609	151,152	233,695
					4,331	0	0	0	0	-390,990	81,125	178,727
					6,460						-583,134	120,992
				<u>Total - Beans</u>		-297,897	-385,036	-305,094	194,923	162,704	124,852	925,660
Pulses	36,000	55%	19,800	<u>Pulses</u>	938	2,344	5,700	8,719	12,581	16,256		
Ha/hh	0.12				516	-26,949	-6,852	-131	6,590	-65	13,311	13,311
					773	0	-40,423	-10,278	-197	9,885	-97	19,966
					1,846	0	0	-96,476	-24,531	-470	23,591	-232
					1,660	0	0	0	-86,775	-22,064	-423	21,219
					2,124	0	0	0	0	-111,028	-28,231	-541
					2,021						-105,639	-26,861
				<u>Total - Pulses</u>		-26,949	-47,275	-106,886	-104,913	-123,743	-97,488	26,862
				Total field crop benefits		-1,708,077	-2,830,881	-2,348,674	-2,030,393	-1,160,878	3,790,945	
				Costs (C2.1)		13,011,598	8,879,970	9,848,748	2,032,716	2,037,264	1,690,936	
				Net Benefits		-14,719,675	-11,710,851	-12,197,422	-4,063,110	-3,198,143	2,100,010	
				Discount rate (%)		0.09						
				FIRR (%)		9%						
				NPV (\$)		-345,880						

Appendix 6: Maize Financial Crop Model

YIELDS AND INPUTS (in unit, for one hectare)						FINANCIAL BUDGET (in USD)					
Dry/Rainy						Dry/Rainy					
	Unit	WOP 1 to 20	WP 1	2 to 10	11 to 20	Unit price (fin)	WOP 1 to 20	WP 1	2 to 10	11 to 20	
Yields						Revenue					
Maize	kg	1,460	1,533	1,825	1,825	0.34	489	514	611	611	
Home consumption	kg	292	307	365	365	0.34	98	103	122	122	
						Total sales revenue					
							391	411	489	489	
Production Costs						Investment costs					
Investment costs						Investment costs					
Maize - local seed	kg	25			25	Maize - local seed	0.50	13	0	0	13
Maize - Improved seec	kg		25	25		Maize - Improved seec	1.08		27	27	0
Operating costs						Operating costs					
Tools	#	0.2	0.2	0.2	0.2	Tools	11.67	2	2	2	2
Storage/sacks	#	15	15	18	18	Storage/sacks	0.26	4	4	5	5
Fertilizer (organic/Urea)	ls	0.5	2	2	2	Fertilizer (organic/Urea)	38.91	19	78	78	78
						Sub-total Input Costs					
							38	111	112	97	
						Income Before Labour Costs					
							353	300	377	392	
Labour						Labour costs					
Land preparation	pers.day	15	15	15	15	Land preparation	1.46	22	22	22	22
Ploughing	pers.day	20	20	20	20	Ploughing	1.46	29	29	29	29
Seeding	pers.day	6	6	6	6	Seeding	1.17	7	7	7	7
Weeding	pers.day	30	30	30	30	Weeding	1.17	35	35	35	35
Harvesting	pers.day	10	10	12	12	Harvesting	1.46	14	15	18	18
Total						Sub Total					
							108	108	111	111	
<i>Hired labour only</i>						Sub-total operating costs					
							146	219	223	209	
<i>Family labour only</i>						Income After Labour Costs					
							246	191	266	281	
<i>Incremental hire</i>						Incremental					
								-54	21	35	
						<i>Return on family lab. per day</i>					
							6.82	5.32	7.39	7.79	

Financial Discount Rate	9%
FIRR	23%
NPV (in USD) @ 0.09	113
NPVb (in USD) @ 0.09	4,300
NPVc (in USD) @ 0.09	1,945
B/C Ratio	2.21
Switching value Benefits	-0.55
Switching value Costs	1.21

Appendix 8: Beans Financial Crop Model

YIELDS AND INPUTS (in unit, for one hectare)						FINANCIAL BUDGET (in USD)					
Dry/Rainy						Dry/Rainy					
	Unit	WOP 1 to 20	WP 1	2 to 10	11 to 20		Unit price (fin)	WOP 1 to 20	WP 1	2 to 10	11 to 20
Yields						Revenue					
Beans	kg	950	998	1,140	1,140	Beans	0.65	616	647	739	739
Home consumption	kg	190	200	228	228	Home consumption	0.65	123	129	148	148
						Total sales revenue		493	518	591	591
Production Costs						Investment costs					
Investment costs						Operating costs					
Beans - local seed	kg	40		50	50	Beans - local seed	0.97	39			
Beans - Improved seec	kg		50			Beans - Improved se	1.73	0	86		
Operating costs						Sub-total Input Costs					
Tools	#	0.2	0.2	0.2	0.2			44	130	44	44
Storage/sacks	#	10	10	11	11	Income Before Labour Costs					
Fertilizer	ls	0	1	1	1			449	387	547	547
Labour						Labour costs					
Land preparation	pers.day	10	15	15	15	Land preparation	1.46	15	22	22	22
Ploughing	pers.day	15	20	20	20	Ploughing	1.46	22	29	29	29
Seeding	pers.day	8	8	8	8	Seeding	1.17	9	9	9	9
Weeding (hand-hoeing)	pers.day	20	30	30	30	Weeding (hand-hoeir)	1.17	23	35	35	35
Harvesting	pers.day	27	29	33	33	Harvesting	1.46	40	42	48	48
Total		80	102	106	106	St. Total		109	137	143	143
Hired labour only		52	64	68	68	Sub-total operating costs		153	268	188	188
Family labour only		28	38	38	38	Income After Labour Costs		340	250	404	404
Incremental hire					15	Incremental			-90	64	64
						<i>Return on family labour</i>		12.15	6.57	10.63	10.63

Financial Discount Rate	9%
FIRR	34%
NPV (in USD) @ 0.09	150
NPVb (in USD) @ 0.09	5,170
NPVc (in USD) @ 0.09	1,916
B/C Ratio	2.70
Sw itching value Benefits	-0.63
Sw itching value Costs	1.70

Appendix 9: Pulses Financial Crop Model

YIELDS AND INPUTS (in unit, for one hectare)						FINANCIAL BUDGET (in USD)					
Dry/Rainy						Dry/Rainy					
	Unit	WOP 1 to 20	WP 1	2 to 10	11 to 20		Unit price (fin)	WOP 1 to 20	WP 1	2 to 10	11 to 20
Yields						Revenue					
			5%	25%	25%						
Pulses	kg	850	893	1,063	1,063	Pulses	0.43	367	386	459	459
Home consumption	kg	170	179	213	213	Home consumption	0.43	73	77	92	92
Production Costs						Total gross revenue					
Investment costs											
Pulses - local seed	kg	40		40	40			294	309	367	367
Pulses - Improved seed	kg		40			Investment costs					
Fertil Organic & P	LS		0.3	0.3	0.3	Pulses - local seed	0.65	26	0	26	26
Operating costs						Pulses - Improved see	1.30	0	52		
Tools	#	0.2	0.2	0.2	0.2	Fertilizer (Organ & P)	38.91	0	10	10	10
Storage/sacks	#	9	9	11	11	Operating costs					
						Tools	11.67	2	2	2	2
						Storage/sacks	0.26	2	2	3	3
						Sub-total Input Costs					
								30	66	41	41
						Income Before Labour Costs					
								264	242	327	327
Labour						Labour costs					
Land preparation	pers.day	12	15	15	15	Land preparation	1.46	18	22	22	22
Ploughing	pers.day	15	20	20	20	Ploughing	1.46	22	29	29	29
Seeding	pers.day	8	8	8	8	Seeding	1.17	9	9	9	9
Weeding (hand-hoeing)	pers.day	20	30	30	30	Weeding (hand-hoein	1.17	23	35	35	35
Harvesting/Treshing	pers.day	17	22	27	27	Harvesting/Treshing	1.46	25	33	39	39
Total		72	95	100	100	Su Total					
Hired labour only		44	57	62	62			97	128	135	135
Family labour only		28	38	38	38	Sub-total operating costs					
Incremental hire								128	195	175	175
						Income After Labour Costs					
						Incremental			-52	26	26
						Return on family labour		5.94	3.00	5.06	5.06

Financial Discount Rate	12%
FIRR	18%
NPV (in USD) @ 0.12	31
NPVb (in USD) @ 0.12	2,627
NPVc (in USD) @ 0.12	1,353
B/C Ratio	1.94
Switching value Benefits	-0.48
Switching value Costs	0.94

Appendix 10: Crop Model Summary

Crop	Yields (kg/ha)			Production (gross) revenue			Income without labour (USD/ha)		
	WOP	WP	Incram.	WOP	WP	Incram.	WOP	WP	Incram.
Maize	1,460	1,825	25%	391	489	25%	353	392	11%
Sunflower	1,033	1,291	25%	286	357	25%	260	305	17%
Beans	950	1,140	20%	493	591	20%	449	547	22%
Pulses	850	1,063	25%	367	459	25%	264	327	24%
Crop	Return on family labour			FIRR	NPV	Benefit			
	WOP	WP	Incram.	WP	WP	WP			
Maize	6.82	7.79	14%	23%	113	2.21			
Sunflower	4.21	4.85	15%	50%	198	2.02			
Beans	12.15	10.63	-12%	34%	150	2.70			
Pulses	5.94	5.06	-15%	18%	31	1.94			

Appendix 11: Farm Model

YIELDS AND INPUTS (per)

	Unit price (fin)	Dry/Rainy				Cropping density
		WOP 1 to 20	WP 1	2 to 10	11 to 20	
Revenue						
Maize	0.34	440	462	550	550	0.9
Home consumption	0.34	88	92	110	110	
Sunflow er	0.35	179	188	223	223	0.5
Home consumption	0.35	36	38	45	45	
Beans	0.65	92	97	111	111	0.15
Home consumption	0.65	18	19	22	22	
Pulses	0.43	44	46	55	55	0.12
Home consumption	0.43	9	9	11	11	
Total sales revenue		755	793	940	940	1.67
Home consumption		151	159	188	188	
Investment costs						
Maize - local seed	0.50	11	0	0	11	
Maize - Improved seed	1.08	0	24	24	0	
Sunflow er - local seed	0.52	4	0	0	4	
Sunflow er - Improved seed	1.73	0	13	13	0	
Beans - local seed	0.97	6	0	0	0	
Beans - Improved seed	1.73	0	13	0	0	
Pulses - local seed	0.65	3	0	3	3	
Pulses - Improved seed	1.30	0	6	0	0	
Operating costs						
Tools	11.67	4	4	4	4	
Storage/sacks - maize	0.26	3	4	4	4	
Storage/sacks - sunflow er	0.26	1	1	2	2	
Storage/sacks - beans	0.26	0	0	0	0	
Storage/sacks - pulses	0.26	0	0	0	0	
Fertilizer - maize	38.91	18	70	70	70	
Fertilizer - sunflow er	38.91	6	19	19	19	
Fertilizer - beans	38.91	0	6	6	6	
Sub-total Input Costs		57	161	146	124	
Income Before Labour Costs		698	632	793	815	
Labour costs						
Maize		97	97	100	100	
Sunflow er		54	55	56	56	
Beans		16	21	22	22	
Pulses		13	16	17	17	
Sub Total		181	189	195	195	
Sub-total operating costs		238	351	341	319	
Income After Labour Costs		518	443	598	620	
Incremental			-75	81	103	
<i>Return on family labour</i>	per day	4.04	2.99	4.04	4.19	

Financial Discount Rate	9%
FIRR	53%
NPV (in USD) @ 0.09	517
NPVb (in USD) @ 0.09	8,255
NPVc (in USD) @ 0.09	3,014
B/C Ratio	2.74
Sw itching value Benefits	-0.63
Sw itching value Costs	1.74

Appendix 12: ASA Model – Seed multiplication

YIELDS AND INPUTS (in unit, for one hectare)					FINANCIAL BUDGET (in USD)							
Dry/Rainy					Dry/Rainy							
Unit	WOP	WP	1	2 to 10	11 to 20	Unit price (fin)	WOP	WP	1	2 to 10	11 to 20	
	1 to 20	1	2 to 10	11 to 20		1 to 20	1	2 to 10	11 to 20			
Production Costs					Seed production revenue							
Investment costs					Revenue							
Seed production by ASA					100%							
Basic seed - ASA					Reserve 120%							
Maize	tonnes	20	54	131	131	Maize	1,729	34,587	93,385	226,546	226,546	
Sunflower	tonnes	12	22	78	78	Sunflower	2,162	25,940	47,557	168,612	168,612	
Beans	tonnes	22	36	117	117	Beans	2,162	47,557	77,821	252,918	252,918	
Pulses	tonnes	3	6	17	17	Pulses	1,729	5,188	10,376	29,399	29,399	
Certified Seed - ASA+PS					Sub-total							
Maize	tonnes	600	1,250	7,500	7,500			113,273	229,140	677,475	677,475	
Sunflower	tonnes	350	700	3,000	3,000	Production subsidy						
Beans	tonnes	400	600	2,000	2,000	Subsidy % 0.80						
Pulses	tonnes	50	75	500	500	Certified seed						
		1,400	2,625	13,000	13,000	Maize	1,081	0%	80%	1,080,847	8,106,355	8,106,355
ASA's contribution					%							
		0.88	0.67			Sunflower	1,729			968,439	5,188,067	5,188,067
PS's contribution					%							
		0.12	0.33			Beans	1,729			830,091	3,458,712	3,458,712
ASA's contribution					100%							
Maize	tonnes	528	838	1,125	1,125	Pulses	1,297			77,821	648,508	648,508
Sunflower	tonnes	308	469	450	450	Sub-total						
Beans	tonnes	352	402	300	300			0	2,957,198	17,401,643	17,401,643	
Pulses	tonnes	44	50	75	75	Total gross revenue						
PS's contribution					%							
Maize	tonnes	72	413	6,375	6,375			113,273	3,266,304	18,079,118	18,079,118	
Sunflower	tonnes	42	231	2,550	2,550	Investment costs						
Beans	tonnes	48	198	1,700	1,700	Production costs						
Pulses	tonnes	6	25	425	425	Basic seed						
Investment costs					120%							
Irrigation	ha					Maize	1,312	31,488	85,018	171,872	171,872	
Buildings: construction	%					Sunflower	1,441	20,750	38,042	112,398	112,398	
Plant, farm machinery	%					Beans	1,427	37,673	61,646	166,959	166,959	
Mechanical workshop	%					Pulses	1,434	5,162	10,325	24,378	24,378	
Vehicles	%					Sub-total						
Capacity building	%							95,074	195,031	475,607	475,607	
		0.025				Production Costs						
		50,000				0% 100% 100% 100%						
Investment costs					Certified seed							
						Maize	1,378	0	1,722,601	10,335,603	10,335,603	
						Sunflower	973	0	680,934	2,918,288	2,918,288	
						Beans	1,070	0	642,023	2,140,078	2,140,078	
						Pulses	1,021	0	76,605	510,700	510,700	
						Sub-total						
								3,122,163	15,904,669	15,904,669		
						Total operating costs						
								95,074	3,317,194	16,380,276	16,380,276	
						Sub-total						
						Irrigation						
						Buildings: construction/renovation						
						Plant, farm machinery & equipment						
						Mechanical workshop accessories						
						Vehicles						
						Capacity building						
						Sub-total investment costs						
									3,381,212			
						Total costs						
								95,074	6,698,406	16,380,276	16,380,276	
						Cash flow						
								\$ 18,199	-3,432,101	1,698,842	1,698,842	
						Incremental						
									-3,450,301	1,680,643	1,680,643	
						0						
						Financial Discount Rate 9%						
						FIRR 4%						
						NPV (in USD) @ 0.09 -5,123,875						
						NPVb (in USD) @ 0.09 123,408,674						
						NPVc (in USD) @ 0.09 128,366,417						
						B/C Ratio 0.96						
						Switching value Benefits 0.04						
						Switching value Costs -0.04						

Appendix 13: Fish Aggregating Devices (FADs)

	Value	Unit								
No of FADs	90	unit	100%							
Construction cost per FAD	8,000	\$								
Installation cost per FAD	30,000	\$								
Volume of catch per FAD	6	ton/year								
Volume of catch for all 90 FADs	550	ton/year								
Price of tuna fish on market	7,000	per tonne								
Value of catch per FAD	3,850,000	\$ per year								
Total value of catch per FAD	49,500	kg/year								
Total value of catch per FAD	50	tons/year								
Total value of catch for all 90 FADs	346,500,000	\$								
Ice	43.00	\$/tonne								
Handling equipment	0.15	%								
Transportation	0.20	%								
Labour	0.25	%								
Maintenance	0.05	%								
FADs constructed			10	30	30	10	10			
FADs installed			1	1	1	1	1			
OUTPUT	Value	Unit	Without Project	With Project						
				Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-20
Revenue										
Sales										
Main product with ice/FADs	3,850,000	\$	3,080,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000
INPUT	Value	Unit	Without Project	With Project						
				Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-20
Investment costs										
Construction of FADs	8,000	lump sum								
Installation of FADs	30,000	lump sum								
Sub-total investment costs			0	1,031,579	1,014,044	782,009	205,998	225,615	33,034	
Running Costs										
Ice	23,650	lump sum		23,650	23,650	23,650	23,650	23,650	23,650	23,650
Handling equipment	577,500	lump sum	277,200	577,500	577,500	577,500	577,500	577,500	577,500	577,500
Fuel	770,000	lump sum	770,000	770,000	770,000	770,000	770,000	770,000	770,000	770,000
Maintenance	192,500	lump sum	192,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500
Labour	962,500	\$ per year	962,500	962,500	962,500	962,500	962,500	962,500	962,500	962,500
Sub-total running costs			2,202,200	2,526,150	2,526,150	2,526,150	2,526,150	2,526,150	2,526,150	2,526,150
Total investment and running costs			2,202,200	3,557,729	3,540,194	3,308,159	2,732,148	2,751,765	2,559,184	2,526,150
GROSS MARGIN			877,800	292,271	309,806	541,841	1,117,852	1,098,235	1,290,816	1,323,850
incremental				-585,529	-567,994	-335,959	240,052	220,435	413,016	446,050
	0.09 NPV	1,355,764								
	IRR	19.3%								

Phasing	Year	Efficiency ratio				Yr-5	Yr-6	Yr-20
		25%	50%	75%	90%			
FADs	Yr-1	1	1	1	1	1	413,016	446,050
	Yr-2	-585,529	-567,994	-335,959	240,052	220,435	446,050	
	Yr-3		-585,529	-567,994	-335,959	240,052	446,050	
	Yr-4			-585,529	-567,994	-335,959	446,050	
	Yr-5				-585,529	-567,994	446,050	
	Yr-6					-585,529	446,050	
Total Benefit:		-585,529	-1,153,523	-1,489,482	-1,249,431	-1,028,996	-30,451	2,230,250

Appendix 14: Deep-Seas Fishing Vessels 18m – Key Financial Indicators, after financing

Key Financial Indicators After Financing	10-years	20-years
FIRR After Financing	25%	34%
NPV	747,592	3,013,197
NPVb	5,036,829	9,603,008
NPVc	1,652,125	2,181,918
BCR	3.05	4.40
Switching value (benefit)	-0.67	-0.77
Switching value (cost)	2.05	3.40
Total lifetime fiscal earnings	6,449,870	
Total import substitution	3,259,899	
Foreign currency earnings	9,709,768	

PHASING

No of 18 m vessels (4)

Year	WP				
	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
	2	2			
Yr-1		-303,615	-382,193	-421,476	-299,770
Yr-2		0	-303,615	-382,193	-421,476
Total Benefits		-303,615	-685,808	-803,669	-721,246

Appendix 15: Deep-Seas Fishing Vessels 18m – Key Financial Indicators, after financing

Key Financial Indicators After Financing	10-years	20-years
FIRR After Financing	31%	40%
NPV	1,436,706	8,988,461
NPVb	9,219,709	17,482,377
NPVc	3,319,277	4,219,838
BCR	2.78	4.14
Switching value (benefit)	-0.64	-0.76
Switching value (cost)	1.78	3.14
Total lifetime fiscal earnings	11,669,281	
Total import substitution	5,517,997	
Foreign currency earnings	17,187,278	

Phasing

No of 25 m vessels (4)

Year	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
	2	2			
Yr-1		-394,657	-576,203	-635,324	-324,836
Yr-2		0	-394,657	-576,203	-635,324
Total Benefits		-394,657	-970,860	-1,211,527	-960,160

Appendix 16: ADCs Financial Indicators

Key Financial Indicators After Financing	<u>20-years</u>
FIRR After Financing	10%
NPV	3,584,443
NPVb	26,349,202
NPVc	17,076,022
BCR	1.54
Switching value (benefit)	-0.35
Switching value (cost)	0.54
Discount rate (%)	0.09
Total lifetime fiscal earnings	18,029,386
Total import substitution	16,149,602
Foreign currency earnings	34,178,988
Own funds	

PHASING

Area (sq m)	12200						
Phasing	Year	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-20
ADCs		30%	70%	100%	0	0	
	3660	252,705	-896,570	-1,304,372	-1,055,731	-806,642	998,058
	4880		336,940	-1,195,426	-1,739,162	-1,407,641	1,325,490
	12200			252,705	-896,570	-1,304,372	988,487
					0	0	0
						0	0
Total Benefits		252,705	-559,629	-2,247,092	-3,691,463	-3,518,655	3,312,035

Appendix 17: Tilapia Fish Grow-Out Ponds

Technology	Production of all male broodstock using ponds						
Investment	1,200,096 USD	1,200,096 USD	(including working capital for first cycle)				
Main output	80,000 fish produced annually						
Description	Each pond is 40m x 50m (or 2 ha) in size, stocked with 20-30 fingerlings per sqm, per cycle, using earthen ponds.						
Production Parameters							
Total production area	104,000 sqm	No. of cycles/year:	2	USD1=TZN 2,313			
Stocking density	4 per sqm		per cycle	per year			
Weight of fish:	0.25 g	Production (fish)	416,000	832,000	100% adoption r		
Production	104,000 kg/sq m						
Mortality rate:	5%						
		Per Production Cycle			Per Year		
	Unit	No. of units	Unit costs (USD)	Total amount (USD)	No. of units	Unit costs (USD)	Total amount (USD)
Output (Revenue)							
Tilapia fish	no.	395,200	0.86	339,872	790,400	0.86	679,744
Total Output (Revenue)		395,200	0	339,872	790,400	0.00	679,744
Intermediate Inputs							
Total operating & maintenance costs (fingerlings, feed, elect	lump sum	416,000	0.13	54,080	790,400	0.1	102,752
Total Intermediate Inputs				54,080			102,752
Value Added /a				285,792			576,992
Value Added per unit of primary output				0.7			0.7
Hired Labour	pers.month	520	53	27,392	1,040	53	54,784
Sub-total Hired Labour	pers.month	520		27,392	1,040		54,784
Gross Margin /b				258,400			522,208
Interest charges	1.50% /c			7,332			7,332
Taxes							104,442
Gross Profit				251,068			410,434
Wear & Tear (maintenance)				54,746			109,491
Net Profit				196,322			300,943
Net Profit per unit of primary output				0.50			0.38
Family labour (valued at USD 120 /p.m.)	pers.month	3	120	360	6	120	720
Return to family labour (per person month)				65,441			50,157
Return to total labour (per person month)				428			340
Investment Costs, Annual Depreciation, Maintenance and Repair							
Item	Unit Cost (USD)	Useful life (years)	No. of units	Invest. Cost (USD)	Wear & tear (USD)	Maintenance and Repair	
						% of inv.cost	USD p.a.
Buildings/structures							
Land cost / ha			57	0			0
Buildings/structures	3,120	20	57	177,840	8,892		0
Building including rectangular tanks and	1,872	20	57	106,704	5,335	0	0
Water systems	8,320	10	57	474,240	47,424		0
Equipment/machinery							
Equipment (other items)	2,080	5	57	118,560	23,712	0	0
Vehicles / loader	4,160	10	58	241,280	24,128	0	0
				0			0
Total assets				1,118,624			
Working capital per cycle /d				81,472			
Total				1,200,096	109,491		0

/a Value of output - value of intermediate inputs; excluding wages, salaries and hired labour.

/b Value of output - total variable costs (including hired labour).

/c per month - applied 150% of working capital for no. of months: 12

/d Intermediate inputs + hired labour.

Internal rate of Return (IRR)	10.2%
Net Present Value (NPV) at 0.09	71,951
Benefit - cost ratio	0.9

Area (sq m) 104,000

Phasing	Year	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-20
Grow -out Ponds		30%	70%	100%	0	0	
	31,200	-309,499	50,530	50,530	50,530	50,530	50,530
	41,600		-412,665	67,373	67,373	67,373	67,373
	104,000			-329,742	30,287	30,287	30,287
Total Bene		-309,499	-362,136	-211,840	148,189	148,189	148,189

Appendix 18: Ice-making Plants

NPV (in USD) @ 0.09 146,454
 FIRR 31.4%

Switching Values	Appraisal Value	Switching Value	% Change
Incremental Revenues	868,814	722,359	-16.9%
Incremental Inflows	1,119,092	972,637	-13.1%
Incremental Production Costs	727,292	873,747	20.1%
Incremental Investments	250,278	396,733	58.5%
Total Incremental Outflows	841,297	987,751	17.4%

PHASING

Phasing	Year	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
Ice-making		3	3		0	0
	Yr-1	43,364	-570,312	162,654	167,810	172,966
	Yr-2		43,364	-570,312	162,654	167,810
	Total Benefits	43,364	-526,948	-407,659	330,463	340,775

Appendix 19: Incremental benefits

		Yr-1 2021	Yr-2 2022	Yr-3 2023	Yr-4 2024	Yr-5 2025	Yr-6 2026	Yr-7 2027	Yr-8 2028	Yr-9 2029	Yr-10 2030	Yr-11 2031	Yr-12 2032	Yr-13 2033	Yr-14 2034	Yr-15 2035	Yr-16 2036	Yr-17 2037	Yr-18 2038	Yr-19 2039	Yr-20 2040
Crop farming	'000 USD		-14,720	-11,711	-12,197	-4,063	-3,198	2,100	6,498	7,367	8,520	8,625	8,619	8,608	7,630	8,216	9,335	8,302	7,223	8,933	9,029
FADs	'000 USD	-586	-1,154	-1,489	-1,249	-1,029	-30	984	1,766	1,972	2,197	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230
ASA	'000 USD	-3,450	-7,555	-4,025	-1,699	160	1,437	1,586	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681	1,681
Ice-making plant	'000 USD	217	-527	-408	330	341	380	414	414	414	414										
Vessels																					
18M	'000 USD		-304	-686	-804	-721	-342	313	1,019	1,911	2,799	3,316	3,491	3,425	3,379	3,347	3,324	3,309	3,298	3,290	3,284
25M	'000 USD		-395	-971	-1,212	-960	-35	1,443	2,844	2,835	3,185	4,708	5,435	4,918	5,111	6,487	6,209	6,015	7,119	6,652	6,325
Total catch																					
18M	tonnes		16	40	120	320	468	600	640	800	640	640	600	600	600	600	600	600	600	600	600
25M	tonnes		48	112	320	720	936	1080	1152	720	1152	1080	720	1296	1296	720	1296	1296	720	1296	1296
			64	152	440	1,040	1,404	1,680	1,792	1,520	1,792	1,792	1,680	1,320	1,896	1,896	1,320	1,896	1,896	1,320	1,896
ADCs																					
Kingolwira	'000 USD		253	-560	-2,247	-3,691	-3,519	-2,480	-1,213	72	1,058	1,748	2,231	2,569	2,805	2,971	3,087	3,168	3,225	3,265	3,293
Grow-out Ponds																					
400 ponds			-362	168	168	168	168	168	168	168	168	168	-772	168	168	168	168	168	168	168	168
Total Benefits		-3,819	-24,762	-19,680	-18,909	-9,796	-5,140	4,527	13,176	16,419	20,021	22,477	22,914	23,599	23,005	25,100	26,035	24,874	24,944	26,219	26,010

Appendix 20: Financial Costs

(USD '000)

	2021	2022	2023	2024	2025	2026	Total
I. Investment costs							
1. Enhanced productivity of crop seeds, fisheries and aquaculture	17,639	16,076	13,480	4,179	3,103	1,839	56,316
2. Improved market access, value addition and private sector development	4,659	4,236	2,737	1,482	865	552	14,529
Total Investment Costs	22,298	20,311	16,217	5,660	3,968	2,391	70,845
II. Recurrent Costs							
3. Project Management and Coordination	1,533	850	900	828	724	896	5,731
Total Recurrent Costs	1,533	850	900	828	724	896	5,731
Total Investment and Recurrent Costs	23,831	21,161	17,117	6,488	4,692	3,287	76,576
Total Investment and Recurrent Costs - Net of Project Costs	-6,625	-4,049	-5,547	475	-264	43	-15,965
DEDUCTED COSTS							
C1.1.	13,012	8,880	9,849	2,033	2,037	1,691	
FADs	1,032	1,014	782	206	226	33	
ASA	3,381	7,196	3,632	2,146	1,066		
ADC	7,132	4,815	2,343	155	154	46	
1. Fishing Vessels	4,216	414	4,584				
2. Vessel operation costs for TAFICO	39	1,009	1,016	1,016	1,016	1,016	
3. Vessel operation costs for ZAFICO	8	292	458	458	458	458	
Ice-making	1637	1591					
Sub-total	30,456	25,210	22,664	6,013	4,956	3,243	

Appendix 21: Economic values

(USD '000)

	2021	2022	2023	2024	2025	2026	Total
I. Investment costs							
1. Enhanced productivity of crop seeds, fisheries and aquaculture	15,249	14,142	11,643	3,821	2,769	1,597	49,221
2. Improved market access, value addition and private sector development	4,112	3,708	2,543	1,269	748	487	12,866
Total Investment Costs	19,361	17,849	14,187	5,089	3,517	2,084	62,087
II. Recurrent Costs							
3. Project Management and Coordination	1,390	809	859	790	688	859	5,395
Total Recurrent Costs	1,390	809	859	790	688	859	5,395
Total Investment and Recurrent Costs	20,751	18,658	15,046	5,879	4,205	2,943	67,482
Total Investment and Recurrent Costs - Net of Project Costs	-8,361	-5,254	-7,618	-134	-751	-301	-22,418

DEDUCTED COSTS

C1.1.	13,012	8,880	9,849	2,033	2,037	1,691	
FADs	1,032	1,014	782	206	226	33	
ASA	3,381	7,196	3,632	2,146	1,066	0	
ADC	7,132	4,815	2,343	155	154	46	
1. Fishing Vessels	4,216	414	4,584	0	0	0	
2. Vessel operation costs for TAFICO	39	1,009	1,016	1,016	1,016	1,016	
3. Vessel operation costs for ZAFICO	8	292	458	458	458	458	
Ice-making	293	293					
Sub-total	29,111	23,912	22,664	6,013	4,956	3,243	

Appendix 22: Programme-Level Financial Analysis

	Yr-1 2021	Yr-2 2022	Yr-3 2023	Yr-4 2024	Yr-5 2025	Yr-6 2026	Yr-7 2027	Yr-8 2028	Yr-9 2029	Yr-10 2030	Yr-11 2031	Yr-12 2032	Yr-13 2033	Yr-14 2034	Yr-15 2035	Yr-16 2036	Yr-17 2037	Yr-18 2038	Yr-19 2039	Yr-20 2040
Project Benefits																				
Total Project Benefits	-3,819	-24,762	-19,680	-18,909	-9,796	-5,140	4,527	13,176	16,419	20,021	22,477	22,914	23,599	23,005	25,100	26,035	24,874	24,944	26,219	26,010
Project Costs																				
Investment and Recurrent Costs	-6,625	-4,049	-5,547	475	-264	43														
Other Costs																				
Maintenance and fees							-199	-320	-487	-472	-480	-479	-479	-479	-479	-479	-479	-479	-479	-479
Total Project Costs	-6,625	-4,049	-5,547	475	-264	43	-199	-320	-487	-472	-480	-479	-479	-479	-479	-479	-479	-479	-479	-479
TOTAL PROJECT NET INCREMENTAL BENEFITS	2,806	-20,714	-14,134	-19,384	-9,532	-5,183	4,726	13,496	16,905	20,493	22,957	23,393	24,078	23,484	25,579	26,514	25,353	25,423	26,698	26,489

NPV (in USD '000) @ 0.09

43,968

FIRR

17%

Financial discount rate

9%

Project benefit stream	-3,819	-24,762	-19,680	-18,909	-9,796	-5,140	4,527	13,176	16,419	20,021	22,477	22,914	23,599	23,005	25,100	26,035	24,874	24,944	26,219	26,010
NPV/b (in USD '000) @ 0.09	28,399																			
Project cost stream	-6,625	-4,049	-5,547	475	-264	43	-199	-320	-487	-472	-480	-479	-479	-479	-479	-479	-479	-479	-479	-479
NPV/c (in USD '000) @ 0.09	-15,569																			
Project net incremental benefits	2,806	-20,714	-14,134	-19,384	-9,532	-5,183	4,726	13,496	16,905	20,493	22,957	23,393	24,078	23,484	25,579	26,514	25,353	25,423	26,698	26,489
NPV (in USD '000) @ 0.09	43,968																			
Break-Even Year	2,574	-14,860	-25,774	-39,506	-45,702	-48,792	-46,207	-39,434	-31,650	-22,994	-14,097	-5,780	2,074	9,101	16,124	22,802	28,660	34,049	39,242	43,968

Economic Switching values	Appraisal	Switching	% change
Incremental benefits	28,399	-15,569	-155%
Incremental costs	-15,569	28,399	-282%
BCR	-1.82		

Inc.
Costs 100% *cost*
Benefits 100% *ben*

Financial discount rate	FIRR	Enter 1 for financial prices
Social discount rate	EIRR	Enter 2 for economic prices
	FIRR	0.09
	EIRR	0.06

Adoption rates	100%
Crops	100%
ASA	100%
ADCs	100%
Grow-out ponds	100%
Ice-making	100%

Appendix 23: Programme-Level Economic Analysis

	Yr-1 2021	Yr-2 2022	Yr-3 2023	Yr-4 2024	Yr-5 2025	Yr-6 2026	Yr-7 2027	Yr-8 2028	Yr-9 2029	Yr-10 2030	Yr-11 2031	Yr-12 2032	Yr-13 2033	Yr-14 2034	Yr-15 2035	Yr-16 2036	Yr-17 2037	Yr-18 2038	Yr-19 2039	Yr-20 2040
Project Benefits																				
Total Project Benefits	-3,328	-9,694	-10,720	-9,386	-8,583	-4,444	5,164	12,273	15,245	18,801	21,185	21,524	22,254	21,540	23,601	24,616	23,343	23,293	24,755	24,505
Project Costs																				
Investment and Recurrent Costs	5,385	5,713	2,247	1,463	1,220	1,039														
Other Costs																				
Maintenance and fees							162	333	400	444	481	512	512	512	512	512	512	512	512	512
Total Project Costs	5,385	5,713	2,247	1,463	1,220	1,039	162	333	400	444	481	512	512	512	512	512	512	512	512	512
TOTAL PROJECT NET INCREMENTAL BENEFITS	-8,713	-15,407	-12,968	-10,849	-9,802	-5,483	5,003	11,940	14,845	18,356	20,704	21,012	21,742	21,028	23,089	24,104	22,831	22,781	24,243	23,993
NPV (in USD '000) @ 0.06	69,171																			
ERR	15%																			
Social discount rate	6%																			
Project benefit stream	-3,328	-9,694	-10,720	-9,386	-8,583	-4,444	5,164	12,273	15,245	18,801	21,185	21,524	22,254	21,540	23,601	24,616	23,343	23,293	24,755	24,505
NPV/b (in USD '000) @ 0.06	86,915																			
Project cost stream	5,385	5,713	2,247	1,463	1,220	1,039	162	333	400	444	481	512	512	512	512	512	512	512	512	512
NPV/c (in USD '000) @ 0.06	17,744																			
Project net incremental benefits	-8,713	-15,407	-12,968	-10,849	-9,802	-5,483	5,003	11,940	14,845	18,356	20,704	21,012	21,742	21,028	23,089	24,104	22,831	22,781	24,243	23,993
NPV (in USD '000) @ 0.06	69,171																			
Break-Even Year	-8,220	-21,932	-32,820	-41,414	-48,738	-52,604	-49,277	-41,785	-32,999	-22,749	-11,842	-1,400	8,794	18,095	27,729	37,217	45,696	53,677	61,690	69,171

Economic Switching values	Appraisal	Switching	% change
Incremental benefits	86,915	17,744	-80%
Incremental costs	17,744	86,915	390%
BCR	4.90		

Inc.
Costs 100% cost
Benefits 100% ben

Financial discount rate	FIRR	2	Enter 1 for financial prices
Social discount rate	EIRR		Enter 2 for economic prices
	FIRR		0.09
	EIRR		0.06

Appendix 24: Sensitivity Analysis – Financial

Project Year	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20
Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Benefits	-3,819	-24,762	-19,680	-18,909	-9,796	-5,140	4,527	13,176	16,419	20,021	22,477	22,914	23,599	23,005	25,100	26,035	24,874	24,944	26,219	26,010
Benefits +10%	-4,201	-27,239	-21,648	-20,800	-10,776	-5,654	4,980	14,493	18,061	22,023	24,724	25,205	25,959	25,306	27,610	28,639	27,361	27,438	28,840	28,611
Benefits +20%	-4,583	-29,715	-23,616	-22,691	-11,755	-6,168	5,432	15,811	19,702	24,025	26,972	27,496	28,319	27,606	30,120	31,242	29,848	29,932	31,462	31,212
Benefits -10%	-3,437	-22,286	-17,712	-17,018	-8,817	-4,626	4,074	11,858	14,777	18,019	20,229	20,622	21,239	20,705	22,590	23,432	22,386	22,449	23,597	23,409
Benefits -20%	-3,055	-19,810	-15,744	-15,127	-7,837	-4,112	3,622	10,541	13,135	16,017	17,981	18,331	18,879	18,404	20,080	20,828	19,899	19,955	20,975	20,808
Benefits -50%	-1,910	-12,381	-9,840	-9,455	-4,898	-2,570	2,263	6,588	8,209	10,010	11,238	11,457	11,800	11,503	12,550	13,018	12,437	12,472	13,109	13,005
Project Costs	-6,625	-4,049	-5,547	475	-264	43	-199	-320	-487	-472	-480	-479	-479	-479	-479	-479	-479	-479	-479	-479
Costs +10%	-7,287	-4,454	-6,101	523	-290	48	-219	-352	-535	-520	-528	-527	-527	-527	-527	-527	-527	-527	-527	-527
Costs +20%	-7,950	-4,859	-6,656	570	-317	52	-238	-384	-584	-567	-576	-575	-575	-575	-575	-575	-575	-575	-575	-575
Costs +50%	-9,937	-6,073	-8,320	713	-396	65	-298	-480	-730	-709	-720	-718	-718	-718	-718	-718	-718	-718	-718	-718
Net cash flow																				
Base scenario	2,806	-20,714	-14,134	-19,384	-9,532	-5,183	4,726	13,496	16,905	20,493	22,957	23,393	24,078	23,484	25,579	26,514	25,353	25,423	26,698	26,489
Costs+10%	3,468	-20,309	-13,579	-19,432	-9,506	-5,187	4,746	13,528	16,954	20,540	23,005	23,440	24,126	23,532	25,627	26,562	25,400	25,471	26,745	26,537
Costs+20%	4,131	-19,904	-13,024	-19,479	-9,479	-5,192	4,765	13,560	17,003	20,588	23,053	23,488	24,174	23,580	25,675	26,610	25,448	25,518	26,793	26,585
Costs+50%	6,118	-18,689	-11,361	-19,622	-9,400	-5,205	4,825	13,656	17,149	20,729	23,197	23,632	24,318	23,724	25,819	26,754	25,592	25,662	26,937	26,728
Benefits +10%	2,424	-23,190	-16,102	-21,275	-10,512	-5,697	5,178	14,813	18,547	22,495	25,205	25,684	26,438	25,785	28,089	29,118	27,840	27,917	29,319	29,090
Benefits +20%	2,042	-25,666	-18,070	-23,166	-11,491	-6,211	5,631	16,131	20,189	24,497	27,452	27,975	28,798	28,085	30,599	31,721	30,327	30,411	31,941	31,691
Benefits -10%	3,188	-18,237	-12,166	-17,493	-8,553	-4,669	4,273	12,178	15,263	18,491	20,709	21,101	21,718	21,184	23,069	23,911	22,865	22,928	24,076	23,888
Benefits -20%	3,570	-15,761	-10,198	-15,603	-7,573	-4,155	3,820	10,861	13,622	16,489	18,462	18,810	19,358	18,883	20,559	21,307	20,378	20,434	21,454	21,287
Benefits -50%	4,715	-8,332	-4,294	-9,930	-4,634	-2,613	2,462	6,908	8,696	10,483	11,719	11,936	12,279	11,982	13,029	13,497	12,916	12,951	13,588	13,484
1 year timelag in benefits	6,625	230	-19,216	-20,156	-18,645	-9,839	-4,941	4,847	13,662	16,891	20,501	22,956	23,393	24,078	23,484	25,579	26,514	25,353	25,423	26,698
2 year timelag in benefits	6,625	4,049	1,728	-25,238	-19,416	-18,952	-9,597	-4,819	5,014	13,648	16,899	20,500	22,956	23,393	24,078	23,484	25,579	26,514	25,353	25,423
Adoption rate of crop farming (@ 20%)																				
Adoption rate of crop farming (@ 40%)																				
Adoption rate of crop farming (@ 60%)																				
Adoption rate of crop farming (@ 80%)																				
Break-even adoption rate of 23% implementation																				

9% ('000 USD)	
IRR @ 0.09	NPV @ 0.09
17%	43,968
17%	45,525
18%	47,082
19%	51,753
16%	46,808
16%	49,648
17%	41,128
18%	38,289
16%	29,769
17%	37,366
18%	31,274
-1%	-43,555
5%	-7,127
9%	25,312
12%	51,196
6%	0

Net cash flow	9% ('000 USD)	
	IRR @ 0.09	NPV @ 0.09
Base scenario	17%	43,968
Costs+10%	17%	45,525
Costs+20%	18%	47,082
Costs+50%	19%	51,753
Benefits +10%	16%	46,808
Benefits +20%	16%	49,648
Benefits -10%	17%	41,128
Benefits -20%	18%	38,289
Benefits -50%	23%	29,769
1 year timelag in benefits	17%	37,366
2 year timelag in benefits	18%	31,274
Adoption rate of crop farming (@ 20%)	-1%	-43,555
Adoption rate of crop farming (@ 40%)	5%	-7,127
Adoption rate of crop farming (@ 60%)	9%	25,312
Adoption rate of crop farming (@ 80%)	12%	51,196
Break-even adoption rate of 23% implem	6%	0

Appendix 25: Sensitivity Analysis – Economic

Project Year	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12	Yr-13	Yr-14	Yr-15	Yr-16	Yr-17	Yr-18	Yr-19	Yr-20	
Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
Benefits	-3,328	-9,694	-10,720	-9,386	-8,583	-4,444	5,164	12,273	15,245	18,801	21,185	21,524	22,254	21,540	23,601	24,616	23,343	23,293	24,755	24,505	
Benefits +10%	-3,661	-10,664	-11,792	-10,325	-9,441	-4,888	5,681	13,500	16,770	20,681	23,303	23,676	24,480	23,694	25,961	27,077	25,678	25,622	27,231	26,956	
Benefits +20%	-3,994	-11,633	-12,864	-11,263	-10,299	-5,333	6,197	14,728	18,294	22,561	25,422	25,829	26,705	25,848	28,321	29,539	28,012	27,952	29,706	29,407	
Benefits -10%	-2,995	-8,725	-9,648	-8,448	-7,724	-4,000	4,648	11,046	13,721	16,920	19,066	19,371	20,029	19,386	21,241	22,154	21,009	20,964	22,280	22,055	
Benefits -20%	-2,662	-7,755	-8,576	-7,509	-6,866	-3,555	4,132	9,818	12,196	15,040	16,948	17,219	17,803	17,232	18,880	19,693	18,675	18,634	19,804	19,604	
Benefits -50%	-1,664	-4,847	-5,360	-4,693	-4,291	-2,222	2,582	6,137	7,623	9,400	10,592	10,762	11,127	10,770	11,800	12,308	11,672	11,646	12,378	12,253	
Project Costs	5,385	5,713	2,247	1,463	1,220	1,039	162	333	400	444	481	512	512	512	512	512	512	512	512	512	
Costs +10%	5,924	6,284	2,472	1,609	1,342	1,143	178	366	440	489	529	563	563	563	563	563	563	563	563	563	
Costs +20%	6,462	6,855	2,697	1,756	1,464	1,247	194	400	480	533	577	614	614	614	614	614	614	614	614	614	
Costs +50%	8,078	8,569	3,371	2,195	1,830	1,559	242	499	601	666	721	768	768	768	768	768	768	768	768	768	
Net cash flow																					
Base scenario	-8,713	-15,407	-12,968	-10,849	-9,802	-5,483	5,003	11,940	14,845	18,356	20,704	21,012	21,742	21,028	23,089	24,104	22,831	22,781	24,243	23,993	
Costs+10%	-9,252	-15,978	-13,192	-10,996	-9,924	-5,587	4,987	11,907	14,805	18,312	20,656	20,961	21,691	20,977	23,037	24,052	22,780	22,730	24,192	23,942	
Costs+20%	-9,790	-16,550	-13,417	-11,142	-10,046	-5,691	4,971	11,874	14,765	18,267	20,608	20,909	21,640	20,926	22,986	24,001	22,729	22,679	24,141	23,891	
Costs+50%	-11,406	-18,264	-14,091	-11,581	-10,412	-6,003	4,922	11,774	14,645	18,134	20,464	20,756	21,486	20,772	22,833	23,848	22,575	22,525	23,987	23,737	
Benefits +10%	-9,046	-16,377	-14,040	-11,788	-10,660	-5,928	5,519	13,167	16,369	20,236	22,823	23,164	23,968	23,182	25,449	26,565	25,166	25,110	26,719	26,444	
Benefits +20%	-9,379	-17,346	-15,112	-12,727	-11,519	-6,372	6,036	14,395	17,894	22,116	24,941	25,317	26,193	25,336	27,809	29,027	27,500	27,440	29,194	28,895	
Benefits -10%	-8,380	-14,438	-11,896	-9,911	-8,944	-5,039	4,486	10,713	13,320	16,476	18,586	18,859	19,517	18,874	20,729	21,642	20,497	20,452	21,768	21,543	
Benefits -20%	-8,047	-13,468	-10,824	-8,972	-8,086	-4,594	3,970	9,486	11,796	14,596	16,467	16,707	17,291	16,720	18,368	19,181	18,163	18,122	19,292	19,092	
Benefits -50%	-7,049	-10,560	-7,607	-6,156	-5,511	-3,261	2,421	5,804	7,222	8,956	10,112	10,250	10,615	10,258	11,288	11,796	11,160	11,134	11,866	11,741	
1 year timelag in benefits	-5,385	-9,041	-11,942	-12,183	-10,606	-9,622	-4,606	4,831	11,873	14,801	18,320	20,673	21,012	21,742	21,028	23,089	24,104	22,831	22,781	24,243	
2 year timelag in benefits	-5,385	-5,713	-5,575	-11,157	-11,940	-10,425	-8,744	-4,777	4,764	11,829	14,764	18,289	20,673	21,012	21,742	21,028	23,089	24,104	22,831	22,781	
Adoption rate of crop farming (@ 20%)																				-1%	
Adoption rate of crop farming (@ 40%)																					5%
Adoption rate of crop farming (@ 60%)																					9%
Adoption rate of crop farming (@ 80%)																					12%
Break-even adoption rate of 23% implementation																					6%

	6% ('000 USD)	
	IRR @ 0.06	NPV @ 0.06
Net cash flow		
Base scenario	15%	69,171
Costs+10%	15%	67,397
Costs+20%	14%	65,622
Costs+50%	13%	60,299
Benefits +10%	16%	77,862
Benefits +20%	16%	86,554
Benefits -10%	15%	60,479
Benefits -20%	14%	51,788
Benefits -50%	12%	25,714
1 year timelag in benefits	14%	57,043
2 year timelag in benefits	13%	45,528
Adoption rate of crop farming (@ 20%)	-1%	-43,555
Adoption rate of crop farming (@ 40%)	5%	-7,127
Adoption rate of crop farming (@ 60%)	9%	25,312
Adoption rate of crop farming (@ 80%)	12%	51,196
Break-even adoption rate of 23% implem	6%	0

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 5: Social Environment and Climate Assessment (SECAP) Review Note

Mission Dates: 31 Mays-26 June 2020

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Project No. 2000001519

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East and Southern Africa Division
Programme Management Department

PDR Annex 5 Social Environment and Climate Assessment

1. Introduction

1. This SECAP review note presents an overview of the main environmental and natural resource management and social issues in the programme area and identifies any significant impacts and social concerns likely to be associated with the programme. The SECAP note has been developed in line with IFAD's SECAP guidelines and Government of Tanzania's laws. The review note integrates IFAD's mainstreaming themes such as gender, youth, nutrition as well as evaluates associated risks and provides mitigation actions. It also undertakes a policy, legislation and institutional analysis of supportive national frameworks and provides guidance on assessments and studies that are required to mitigate negative impacts and enhance positive ones.

2. Two design missions were organised in the first semester of 2020. The first design mission for the development of the Programme Concept Note took place from 24 February – 7 March 2020. During the first design mission, consultative meetings on environment, climate and social issues, including safeguards, were held between IFAD environment specialists and counterparts from the Government of Tanzania. These counterparts included Ministry of Livestock and Fisheries, Ministry of Agriculture, Prime Minister Office, Ministry of Water and Sanitation and Ministry of Finance and Planning. In the midst of the global COVID 19 pandemic, the second remote design mission for the development of the Programme Design Report was organised between 01 June 2020 to 25 June 2020. The main findings presented in this SECAP review note are based on primary and secondary data analysis and an exhaustive review of available literature on targeted value chains in Tanzania. The design team conducted several teleconference meetings with development partners, research institutions and relevant line ministries.

2. Situational analysis and potential project impacts

2.2 Socio-economic and nutritional assessment

3. **Overall poverty situation:** With a Human Development Index score of 0.538, Tanzania is currently ranked 154th out of 189 countries. This is an increase of 45.3% since 1990. The 2012 National Household Budget Survey shows that overall; the percentage of people living in poverty has declined from 33% in 2007 to 28% in 2012. However, the rural areas have about 84% of the poor, and in 2012, 33% of the rural population lived below the poverty line, compared to 22% for the urban areas. Life expectancy at birth is 60 years; the male literacy rate is 75% and female is 60%. Around 1.6 million people are living with HIV in Tanzania, representing 6% of the population¹.

4. Key characteristics of poverty in Tanzania include the following: i) poverty is very much higher in rural than urban areas; ii) poverty is less demonstrated in households engaged in non-farm business ii) inter-generational transmission of poverty is a particular challenge; and iv) many non-poor households are clustered just above the poverty line, so are vulnerable to falling into poverty in the case of a shock. Fertility rates remain high, giving annual population growth of 2.7%, making it difficult to achieve sufficient per child investments in health and education, and lowering the savings rate of the country. Life expectancy at birth is 60 years; male literacy rate is 75% and female is 60%.

5. According to the 2018 Tanzania National Nutrition Survey (TNNS), 31.7 percent of children under 5 years old in Tanzania are stunted and the stunting rate is twice as high in the poorest quintile than in the richest (40 percent compared to 19 per cent). This is linked to an inadequate diet which high in calories and very low in protein and essential nutrients. Only 9 percent of Tanzanian children aged 6-23 months are fed in line with minimum acceptable standards regarding frequency and diversity (TDHS 2015/16)

¹ Tanzania Human Development Report 2017

6. **Gender and women empowerment.** Tanzania is positioned 150th out of 160 countries in the 2019 Gender Inequality Index (UNDP, 2019). The Gender Development Index (GDI) and the Gender Inequality Index (GII) both show that women are disadvantaged in access to education, health services and economic opportunities. Women play a crucial role in the agricultural sector, representing 52 percent of the labour force (World Bank, 2015). However, the contribution of women in the rural Tanzanian economy is underestimated. Especially, women face the dual issues of reliance on natural resources for livelihoods and food security, and political, social, and economic obstacles to adaptation. Female farmers tend to own smaller plots, have lower yields and less access to improved technologies, productive resources and access to finances. Fishing has been traditionally considered as a man's job. Women have restricted access to productive assets (boats, equipment) but dominate different stages of the fisheries value chains. Across the country women are vital to small-scale aquaculture projects. Tanzanian women face barriers compared to men in accessing credit, agriculture inputs, land ownership, and labor. Additionally, they are customarily encouraged to focus on subsistence farming, family, and child-rearing activities (total fertility rate is high at 5.1). Women earn less than men and are more likely to be self-employed as they do not have equal opportunities for accessing secondary education and paid employment. Despite progress on laws and policies supporting women empowerment, implementation challenges remain making women in Tanzania vulnerable in all aspect of their lives. Dominant masculine norms and the discriminatory attitude toward women persist in Tanzanian society. Other gender related challenges include Gender Based Violence (GBV) such as 'sex for fish' among fishing communities is rampant, teenage pregnancies and Female Genital Mutilation practiced in certain parts of the country.

7. The proposed programme will benefit women through: (i) enhanced access to crops and fisheries-based production and value addition systems (ii) access to improved nutrition from bio-fortified bean and from greater fisheries output; (iii) reduction in fieldwork and household resilience due to increased yield per hectare and greater efficiency of fisheries production and increased decision making and representation in programme activities.

8. **Youth.** Tanzania's population is largely young, accounting for 67 percent of the labour force and are mainly self-employed in informal and formal sectors (URT, 2016). Youth unemployment stands at 11.5 percent. The agricultural sector employs 22.9 percent of Tanzanian working youth. Every year estimated 800,000 youths enter the labor market with limited educational attainments. By 2030 it is projected that each year 1.6 million Tanzanians will enter the labor market. In addition, the youth population is projected to increase by 50 percent by 2050. This demographic dividend has tremendous potential to transform the supply and demand of food, and will impact the agri-food industry. As the largest employer in the country, agriculture will remain an entry point for job creation, inclusive growth and poverty reduction. Youth involvement in agriculture, fisheries and aquaculture is hampered by, limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies and mind sets where for example youth perceive fishing as an occupation for the old. The proposed programme will support youth by: (i) improving opportunities for micro-enterprises in processing, storage and value addition of crops and fish products; (ii) enhancing their capacity as outgrowers for seed companies in multiplication as well as greater emphasis on Quality Declared Seed production (QDS) and fish farming, (iii) access to finance and land and (iv) capacity building on entrepreneurship and business development training, business skills and technical courses in seeds and fisheries equipping youth with tools and confidence to make sound financial decisions, in turn enabling them to manage financial services and helping them work towards mindset shifts will be key.

9. **Nutrition.** The 2019 State of Food and Agriculture in the World reports that the number of undernourished people increased from 13.6 million in 2004-2006 to 17.6 million in 2014-2016, although the prevalence of undernourished people decreased from 34.4 percent to 30.7 percent during the same period². At the national level, the country has been food self-sufficient in most years, but with significant

² FAO, 2019. The State of Food and Agriculture in the World.

variations at the regional, district and household levels. The 2015-16 Tanzania Demographic and Health Survey and Malaria Indicator Survey reports that 34 percent of children under the age of five years are stunted or short for their age, which is a condition reflecting cumulative effect of chronic malnutrition. Around 5 percent of children are wasted or too thin for their height, which reflects the level of acute malnutrition while, at the other extreme, 4 percent are overweight or over-nourished and 14 percent of children are underweight or too thin for their age. In addition, adult population also face a malnutrition burden: 37.2 percent of women of reproductive age have anaemia, with more adolescents likely to be at risk due to high incidence of teenage pregnancies, 6.1 percent of adult women have diabetes, compared to 6 percent of men; and 12.7 percent of women and 4 percent of men have obesity. This is linked to an inadequate diet which high in calories and very low in protein and essential nutrients.

10. The crop and fish value chains identified are extremely relevant for increasing food security and nutrition. Maize accounts for 40 percent of caloric intake nationally and comprises an average of 16 percent of national household food expenditures. More than 30 percent of the animal protein consumed in Tanzania comes from fish. Fish products also enrich daily food intake with macronutrients such as lipids, proteins and essential amino and fatty acids. AFDP takes advantage of IFAD's extensive portfolio of projects and tools on gender, social inclusion and nutrition. AFDP is designed within the framework of nutrition-sensitive investments³ and will influence nutrition through the following pathways: (i) Production of nutritious foods, including biofortified maize and beans, sunflower, seaweed and high value fish species (eg dagaa); (ii) enhance food availability, production and utilization through the adoption of high quality seeds and fingerlings; (iii) support processing and marketing of fish and sunflower with labour saving technologies; (iv) providing opportunities for income diversification, of; and (iv) Women economic empowerment to access more profitable markets and improved decision making.

2.2 Environment and climate context, trends and implications

2.2.1 Environmental context and implication for the project

11. Currently, approximately 70 percent of Tanzanian population live in rural areas and depend on the country's natural capital in form of freshwater, productive land, forests, marine ecosystems and biodiversity. However, rapid population and economic growth cause degradation of ecosystems and habitats. Hence, overexploitation and degradation will negatively affect rural livelihoods.

Crop production context

12. Agricultural production is dominated by small-scale, subsistence farmers, with an average farm size ranging from 0.2 and 2 ha. Agricultural productivity is challenged by over-reliance on rainfall, utilisation of traditional equipment, unsustainable production methods, poor access to inputs and low capacity of the extension services to deal with climate change issues (CIAT, 2017)⁴. The utilisation of agricultural inputs is low compared to regional averages. In Tanzania, farmers use an average of 9 kg per ha of fertilizers compared to 16 kg for Southern African Development Community (SADC) countries (URT, 2015).

13. The project is targeting areas located in climate-sensitive agro-ecological zones. These areas cover central zone including Manyara, Singida, Dodoma, Tabora, Shinyanga; Easter zone covering Morogoro; costal zones covering Pwani and Tanga, and Lake zones including Geita, Mwanza and Kagera (see below map). These areas are considered as arid or semi-arid lands. They are characterized by low precipitation (less than 800 mm per annum), annual precipitation to potential evapotranspiration (P/PET) ratio between 0.5 to 0.65, fragile ecosystems, extreme weather conditions,

³ FAO. 2015. Key Recommendations for Improving Nutrition through Agriculture and Food Systems. Available at: www.fao.org/3/a-i4922e.pdf

⁴ CIAT, World Bank, 2017. Climate-Smart Agriculture in Tanzania. CSA Profile for Africa Series. International Center for Tropical Agriculture (CIAT); World Bank, Washington, D.C, 25p.

steady reduction of the coastal areas covered by mangroves and forests⁸. Capture fisheries in marine and inland waters require further efforts on controlling the increasing numbers of vessels and fishers. If not managed properly, the situation may lead to a "tragedy of the commons". (URT, 2016).

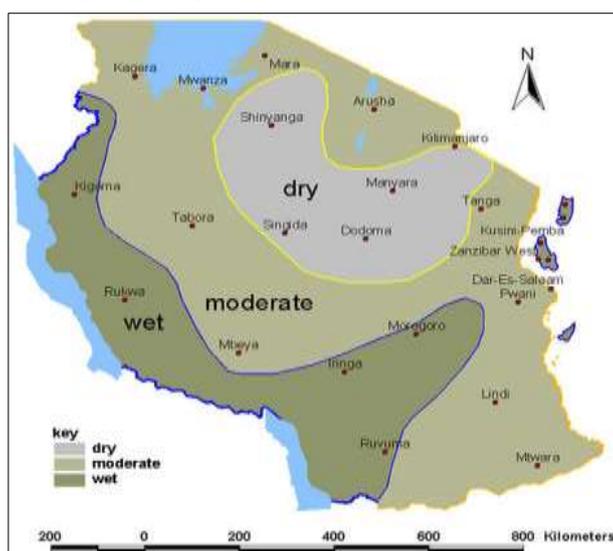
17. Aquaculture is an emerging industry dominated by small-scale farmers, especially women, producing fish for household consumption and domestic markets (URT, 2015). Increasing warming ocean and freshwater temperatures and sedimentation after heavy rains are threatening livelihoods and food supply depending on coastal and inland fisheries. In addition, sea level rise is putting coastal infrastructure, coastal populations (about 25 percent of the total population), and coastal ecosystems at risk of inundation, salinization and storm surge⁹.

2.2.2 Climate change and impacts

18. Tanzania is vulnerable to increased climate variability and climate change over most parts of the country. Rising temperatures, longer dry spells, more intense heavy rainfall and sea level rise hinder poverty alleviation and rural development. Increasing temperatures were observed notably over highland areas while late rainfall onset and early cessation, decreasing rainfall amount and seasonal shift in rainfall patterns are becoming more common nationwide. Selected value chains are highly sensitive to rainfall deficit and rising temperature, which lead to food shortages and also contribute to threatening the food security of local populations. Agricultural productivity is also hindered by weather conditions and extreme events such drought, floods, crop diseases and pests.

19. The arid and semi-arid drylands (ASALs) in the north-east, specifically those in Arusha and Manyara regions (also popularly known as the Maasai Steppe), are the driest experiencing short and unreliable rainfall. The central ASALs that extend over Dodoma, Singida, Shinyanga, and less over Mwanza and Tabora regions, follow the unimodal rainfall pattern that prevails between December and March, covering a crop-growing period of 70-90 days. Together these two sub-regions include the driest parts of the country. The south-eastern semi-arid areas, which include parts of Morogoro, Lindi and Mtwara regions, experience unpredictable but adequate October-December and March-May rainfall.

Figure 2: Map of the driest areas of Tanzania



Source: URT, 2014

⁸ World Bank, 2019, Tanzania Country Environmental Analysis, Environmental Trends and Threats, and Pathways to Improved Sustainability.

⁹ United Republic of Tanzania (URT). 2014. Second national communication to the United Nations Framework Convention on Climate Change.

20. Overall, these areas are characterized by a combination of low precipitation (less than 800 mm per annum), extreme weather conditions – with a long, hot dry season and short wet season, fragile ecosystems, low water-holding capacity of soils, high levels of evaporation, and significant variation in vegetation.

21. Over the last 40 years, Tanzania has experienced increased weather variability, with extreme weather events, notably floods and droughts occurring more frequently both within and between seasons. Rural inhabitants are facing prolonged dry spells with a delayed onset and increased intensity of the wet season combined to unpredictability of rainfall which cause crop failure and water stress.

22. The country has experienced severe and recurrent droughts, which have caused devastating impacts, particularly in agriculture, water, energy and livestock sectors. The most recent devastating droughts include those of 2003, 2005, 2011, 2014 and 2016. The severity of drought is exacerbated in the semi-arid regions of Tanzania where estimations show that 61% of land in these areas is likely to be degraded. These areas include some parts of Dodoma, Shinyanga, Manyara, Singida, Simiyu, Geita and Kilimanjaro regions, which are characterized by extreme seasonal conditions with relatively low rainfall, a long dry seasons and high seasonal rainfall and temperature fluctuations.

23. The climate models project increases in temperature with high variation from zone to zone. More warming is projected over the Western side of the country, whereby a warming of up to 3.40 C is projected by 2100. A warming of less than 1.76 °C for 2050 and 3.28 °C for 2100 is projected over parts of the northern coast regions and north-eastern highlands. A warming in excess of 1.77 °C for 2050 and 3.3 °C for 2100 are projected over the Lake Victoria zone and central Tanzania zone. A warming in excess of 1.39 °C for 2050 and 3.18 °C for 2100 are projected for the southern coast including Mtwara and Lindi regions. A decrease of up to 7% by 2050 is expected in the Southern Coast Zone and an increase of annual rainfall of about 9.5% by 2100

24. Climate change scenarios for Tanzania expect increased rainfalls in most parts of the country, especially over coastal regions, parts of north-eastern highlands, northern regions, western and southern parts of the Lake Victoria basin where rainfall is projected to increase in the range of 0.15 to 0.45 mm/day. The south-western highlands, eastern parts of Lake Nyasa, and Western regions are projected to experience decreased rainfall in the range of 0.15 to 0.3 mm/day¹⁰. Rainfall projections indicate that some parts of the country may experience an increase in mean annual rainfall of up to 18 to 28% by 2100, particularly over the Lake Victoria Basin and North-Eastern Highland.

Coastal and Marine ecosystems and related climate change impacts

25. The Western Indian Ocean (WIO) region is characterized by high diversity in both species and ecosystems and considered as the world's second richest marine biodiversity hotspot. The Intergovernmental Panel on climate Change Fifth Report (IPCC AR 5) highlights that oceans accumulated 90 % of the heat resulting from global warming during the last four decades¹¹. During 1901-2012, WIO experienced anomalous warming of up to 1.2 °C, compared to an increase of 0.7 °C in other parts of the Indian Ocean. The sea surface temperatures (SST) in the WIO increased at a rate faster than any other region of tropical oceans, with notably an increase of 0.60 °C from 1950 to 2009. Projected changes include an additional increase of 1° C by 2100.

26. Furthermore, sea level along all Indian Ocean coasts has increased since 1960s with an average of 12.9 cm, except for Zanzibar that shows a decrease. Expected increases shall range from 16 cm to 42 cm. The situation is also exacerbated by increases in tropical cyclones; storm surges and

¹⁰ URT, 2014. The Second Communication to the United Nations Framework Convention on Climate Change (UNFCCC), Vice President Office, Tanzania.

¹¹ Roxy & al., 2014, *The curious case of Indian Ocean Warming*, American Meteorological Society, 8501-8509

flooding that are aggravated by unpredictable heavy rainfall over the land¹². In particular, threats to coastal livelihoods consist of coral bleaching, general decrease in coral cover and changing coral communities. The effects of sea level rise include increased sedimentation and influences on coastal fish species due to the loss of intertidal areas which act as important nursery areas for both resident and migratory species.

27. Overharvesting and clearing for agricultural use or coastal development have significantly affected mangrove forests, which has declined by 20 % to 30 % over the past few decades. The loss of mangrove forests has led to decreased estuarine biodiversity and shoreline protection from extreme weather events and increased sedimentation and erosion, which have negative impacts on seaweed farming taking place in shallow intertidal areas.

28. Furthermore, climate change is expected to affect the marine environment extensively by modifying the physical and chemical properties of seawater, including temperature, salinity, current, vertical stratification and oxygen concentration¹³. The main impacts of climate change on Tanzanian fisheries are the destruction or degradation of fish spawning and nursery grounds and feeding areas. Rising sea surface temperature and ocean acidification are considered as major threats to coral reefs. However, coral reefs may have the capacity to adapt to changing temperatures more quickly than expected by changing their species composition rather than disappearing. This will also affect associated fish fauna that will change towards more generalist species.

29. During the last two decades, due to El Nino events, WIO experienced three major warming events (1982/83, 1997/98 and 2015/16) that devastated the health of coral reefs and fish communities. For instance, the anomalously high sea temperature of 1997/98 led to mortality of 50 % to 90 % of coral and coincided with low primary production in the WIO and a shift in Tuna stocks¹⁴. As a result, 62 % of fish species declined in abundance within three years after a loss of more than 10 % of coral cover.

30. In addition, increased acidity in the ocean may cause dramatic changes to phytoplankton and hence reduce WIO primary productivity. Scientists stress that largescale distribution of the dominant species of tunas is associated with phytoplankton availability and abundance. It is expected that further changes will put additional stress on fisheries resources.

31. **Seaweed.** In late 1980s, seaweed farming was introduced in Tanzania with two main species, *Eucheuma denticulatum* (spinosum) and *Kappaphycus alvarezii* (cottonii), both native of Western Indian Ocean region. At a large extent, seaweed are cultivated at small-scale level. Despite higher production of spinosum, cottonii gets higher price but its production has been declining substantially over the last decade, due to increasing sea surface temperatures and longer hot seasons¹⁵. Farmers have experienced serious problems of die-off and ice-ice diseases resulting into decreased production.

32. However, the canopies of farmed seaweeds have the potential to reduce wave energy and hence may serve as live coastal protection structures buffering against coastal erosion. By nature, seaweed species are strongly autotrophic, generating far more organic matter through photosynthesis

¹² Van der Lingen and Hampton I., 2018, Chapter 11: Climate Change impacts, vulnerabilities and adaptations: Southeast Atlantic and southwest Indian Ocean Marine Fisheries; within FAO, 2018, Impacts of climate change on fisheries and aquaculture Synthesis of current knowledge, adaptation and mitigation options.

¹³ Gruber, N., 2011, Warming up, turning sour, losing breath: ocean biogeochemistry under global change. *Philosophical Transactions of the Royal Society A*, 369(1943): 1980–1996.

¹⁴ Moustahfid H, Marsac F., Gangopadhyay A., 2018, Chapter 12: Climate change impacts, vulnerabilities and adaptations: Western Indian Ocean marine fisheries, within FAO, 2018, Impacts of climate change on fisheries and aquaculture Synthesis of current knowledge, adaptation and mitigation options.

¹⁵ Duarte CM, Wu J, Xiao X, Bruhn A and Krause-Jensen D (2017) Can Seaweed Farming Play a Role in Climate Change Mitigation and Adaptation? *Front. Mar. Sci.* 4:100. doi: 10.3389/fmars.2017.00100

than consumed by respiration in the ecosystem, and are thus responsible for much of CO₂ capture in marine vegetated habitats¹⁶. Hence, seaweed farming contributes to carbon sequestration.

Crop Production climate-related risks

33. With regard to the three selected crop seed value chain (maize, beans and sunflower), climate projections may affect their yields. While increasing temperatures may benefit rain-fed maize production in the highland, maize production is sensitive to daytime high temperatures above 30 °C. Heat stress during flowering and grain filling stages results in decreased grain count and weight, resulting in low crop yield and quality¹⁷. With elevated temperature (above 35 °C), it is expected that maize will not only suffers from temperature stress, but also becomes sensitive to moisture availability. Rain-fed agriculture combined with potential variations in rainfall distribution under climate change may not be able to meet increasing water demand¹⁸. Hence, maize seed production in semi-arid areas of central zones of Tanzania shall face a decrease of 8-13 percent by 2050 due to increased heat stress, drying, soil erosion and land degradation. In semi-arid areas, water and heat stress are projected to temporally decrease the length of the growing season while spatially shrinking the suitable areas for agricultural production.

34. With regard to bean production, similar trends are expected with yield decreases of 5-9 percent by 2050¹⁹. The negative effects of climate change on beans production are rainfall variability and soil moisture content rather than rising temperature. Based on climate change scenarios, estimations of suitable areas indicate that lowland areas may lose up to 20% of the current beans production but highland areas may gain up to 57% in bean productivity by the middle of the century²⁰.

35. Furthermore, climate change is likely to reduce yields in sunflower seeds, which are sensitive to dry spells and droughts. Under current climate conditions and with the application of optimum nutrient, pest and disease management options, farmers can achieve yields of 3-4 tonnes per ha. Based on climate change scenarios, yields may drop to 2-3 tonnes per ha²¹.

Aquaculture climate-related risks

36. For inland small-scale aquaculture systems, increasing seasonal and annual variability in precipitation and resulting flood and drought extremes are likely to be the major threats to aquaculture development. In addition, reduced annual rainfall and changes may lead to potential conflict with other agricultural, industrial and domestic users in water-scarce areas. It expected that smaller ponds might retain less water and dry up faster. Hence, small-scale farmers may suffer from shortened growing seasons and reduced harvests of inferior fish. The decreasing water levels stimulate early maturation and spawning of some important farmed species, resulting in over-crowding, loss of economic returns and a narrower choice of species for aquaculture²².

2.3 Target group profiles

37. Smallholder farmers producing at subsistence level. Smallholder crop farming and fishing are important for economic opportunities especially to the poorest households. These households can have very little land around their dwelling and few, productive assets. A significant proportion of these

¹⁶ ibid

¹⁷ Adhikari U., Nejadhashemi A. Pouyan & Woznicki S. A., 2015, Climate change and eastern Africa: a review of impact on major crops, Food and Energy Security 2015; 4(2): 110–132

¹⁸ ibid

¹⁹ USAID, 2018, Climate change in Tanzania, Country risk profile. This document was prepared under the Climate Change Adaptation, Thought Leadership and Assessments (ATLAS).

²⁰ Adhikari U., Nejadhashemi A. Pouyan & Woznicki S. A., 2015, Climate change and eastern Africa: a review of impact on major crops, Food and Energy Security 2015; 4(2): 110–132

²¹ Groot A. D. & al, 2019, Sunflower in Tanzania, Climate change risks and opportunities, Wageningen Environmental Research. The assessment was carried out in the context of the Climate Resilient Agribusiness for Tomorrow (CRAFT) project.

²² Handisyde, N.T. et al. 2006. The effects of climate change on world aquaculture: a global perspective. Final Technical Report, DFID Aquaculture and Fish Genetics Research Programme, Stirling Institute of Aquaculture, Stirling, U.K.

households are likely to be women-headed households with children under five years who are likely to have malnutrition. The number of dependents may be higher than average and include members who are vulnerable, adolescents, persons with HIV, persons with disabilities, children out of school. These households depend for their livelihoods on casual labour, trading groceries and other small trades. Most of these farmers often fall short of their monthly income needs and live at or below the poverty line. Coping mechanisms include reliance on traditional safety nets such as borrowing from family, friends, SACCO savings and 'merry go rounds' where each person contributes a part of their daily earnings and each day a different person receives the sum collected on a revolving basis.

38. Smallholder farmers are considered as the core target of the programme. Farmers in this category are involved in subsistence crop farming and fishing with low level of production. These farmers lack access quality seeds and other inputs to increase their production for consumption and to make their production market-oriented. As they rely on rainfed agriculture, these farmers are exposed to climate variability and change. In the semi-arid areas of Tanzania, these farmers face increasing droughts and dry spells which impact negatively on crop yields. These farmers own an average of ≤ 2 ha of land or one to two ponds or equivalent and have no access to proper extension services and improved-quality seeds and inputs for market-oriented production. Most women and youth have no access to their own land. Still, despite their agricultural production, smallholder households often fall short of their monthly income needs. Most households live at or below the poverty line. Only a few smallholders are involved in farmer organizations; about 10 percent are a member of a planting, weeding, and harvesting group and 1 percent are part of a producers' group. In addition, apart from mobile money, very few have bank accounts or links to knowledge and advice. Only 10 percent of smallholders in Tanzania, for example, personally have a bank account registered in their own name. For smallholders to access knowledgeable resources, they need to be able to tap into networking channels that are new to them, and these channels need to be able to provide accurate information to farmers in a format/language that they can easily understand. In addition, they generally do not have access to formal financial services with most relying on family income. They may be members of informal or financial organizations at village level, but they are usually reluctant to borrow due to limited business skills.

39. Coral reefs support the livelihoods of coastal communities, especially the ones engaged in marine fisheries. Climate change affects health of coral reef and contributes to decline in fish production. In addition, overfishing, coastal development damage coastal ecosystems. These beneficiaries will be expected /supported to be members of Farmer Organizations and will benefit from improved access to quality improved seeds, fingerlings, linkage to access to finances, enhanced technical assistance, new technologies (such as new gears for artisan fisheries, seaweed deep sea farming targeting the youth, extension services through FFFs/FBS and enhanced collective marketing through FOs). Other benefits will include labour, energy and time saving technologies and incentives to encourage women participation such as seaweed solar tents, investments in infrastructure and technologies for value addition and postharvest encouraging women and youth participation. This category represents about 80% of the total number of beneficiaries and will include 50% women and 30% youth who will be reached through Component 1 and 2. In terms of nutrition, malnutrition and stunting are more exacerbated amongst poorer and vulnerable small holders given the limited variety of food available. These households (HHs) will be targeted to improve household consumption, dietary diversity and community practices regarding nutritious foods.

40. Medium sized farmers, fishers and enterprises, producers and involved in commercial activities. Comprised of economically active/entrepreneurial small and medium holders requiring support for surplus production and entrepreneurship activities. These will include rural HHs already engaged in crop (seed), aquaculture and fish farming and production. These households consume what they grow, trade goods for other necessities, and sell their crops or fish for income. Specific opportunities and products will be developed to meet the interests and capacities of women and youth of different ages including support towards access to finance and land. This group will include existing SMSE agro-dealers, rural aquaculture and fish entrepreneurs, fish and aquaculture farmers, those in fish and

seaweed processing, storage, ice-making and marketing comprised of individuals wishing to engage in levels of the aquaculture and fisheries value chains for economic gain but require external support to do so.

41. Beneficiaries in this group engage actively in seed, aquaculture or fish production as semi-commercial farmers than their subsistence counterparts with a market purpose. Specialized farmers may have some assets and/or are organized into formally established and legally registered operational and viable producers and/or processors cooperatives or organizations. These farmers may have a market-oriented approach but lacking entrepreneurial/management skills to farm as a business but have limited access to extension services, financial services and limited access to more commercial markets. This category will comprise of 50% women and 30% youth. This group may include a better – off target but may lack adequate nutrition education and awareness to improve their nutrition. Nutrition education and campaigns will be integrated in the programme to improve nutrition.

3. Institutional analysis

Theme	Institutional framework	Policies and Strategies
Gender	<ul style="list-style-type: none"> Ministry of Community Development, Gender and Children 	<ul style="list-style-type: none"> National Strategy for Gender Development (2008)
Youth	<ul style="list-style-type: none"> Ministry of Labour, Employment and Youth Development, Ministry of Information, Culture, Youth and Sports 	<ul style="list-style-type: none"> National Youth Development Policy (2007)
Nutrition	Ministry of Health and Social Welfare	<ul style="list-style-type: none"> National Nutrition Social and Behaviour Change Communication Strategy 2013 National Nutrition Implementation Plan (2012) TFNC Strategic Plan 2016/21 National Multi-sectoral Nutrition Action Plan (2016)
Environment	<ul style="list-style-type: none"> National Environment Management Council; Ministry of Water and Sanitation Ministry of Agriculture Ministry of Livestock and Fisheries 	<ul style="list-style-type: none"> National Environmental Policy (1997) National irrigation Master plan (2002) Environmental Management Act (2004) National Action Programme (NAP) to Combat Desertification (1999), National Agricultural Policy (Crops policy) (2013) National Fisheries Policy (2015)
Climate change	<ul style="list-style-type: none"> Vice President Office- Division of Environment 	<ul style="list-style-type: none"> National Adaptation Programme of Action (2007) National Climate Change Communication Strategy, 2012-2017 National Climate Change Strategy (2012) Agriculture Climate Resilience Plan 2014-2019 Second National Communication, UNFCCC (2014)

	<ul style="list-style-type: none"> • Intended Nationally Determined Contributions (2015)
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4. Environmental and social category (A)

42. The Programme is confirmed as SECAP Category A. Most of AFDP proposed interventions will have some significant impacts that can be readily mitigated or remedied and therefore fall into Category B. The deep sea fisheries interventions and associated processing activities will trigger an overall Category A status of the Programme which requires the preparation of an Environmental and Social Assessment (ESIA) and an Environmental and Social Management Plan, the purpose of which will be to facilitate the implementation of sustainable fishing operations. As part of the design process, Environmental and Social Management Framework (ESMF) has been undertaken. The report sets out the principles, rules, guidelines and procedures to assess environmental and social risks and impacts. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures and appropriate roles, responsibilities and capacity for managing, mitigating and monitoring environmental and social concerns related to the project. It includes adequate information on the areas in which activities are expected to be cited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and potential mitigation measures. It also includes adequate institutional mechanisms to allow the lead agencies to implement the recommended measures.

The impacts of tuna fisheries are sensitive not least because a number of tuna and tuna-like species are considered to be susceptible to overfishing, and moreover any impact on their stocks will extend over a large area, beyond territorial waters. Moreover, there is limited data available on fish stocks in the deep sea, sustainable yield and carrying capacities in URT waters. Hence, remedial actions will be recommended, through the preparation and implementation of a Tuna Fisheries Management Plan, will include (i) assessment and monitoring of tuna catches on a regular basis to ensure the stocks remain within sustainable levels. The management plan ensures that tuna fisheries are managed based on sound scientific data and knowledge (ii) defining an effective system of controlling fishing capacity through licensing procedures of vessels and gears, also to avoid by-catch (iii) mechanism for monitoring, control, surveillance and enforcement of fishing regulations to eliminate illegal, unregulated and unreported (IUU) activities, including on-board observer programs (iv) mechanisms for sustainable financing of the Tuna management plan through license fee, levy on catches, trust fund etc. (v) actions for post-harvest management to reduce losses and value addition (vi) capacity building of local fishery management institutions and building synergies and partnerships with regional and international programmes and institutions such as IOTC..

43. As such, the Programme is phased to include the implementation of the subprojects and interventions that fall under Category B, plus the ESIA studies for the deep sea fisheries interventions in Zanzibar and Mainland. As per national environmental regulations, the ESIA studies for Category A subprojects will be disclosed on IFAD website and national platforms during the National Environmental Management Council (NEMC) review for a period of 60 days”.

44. The second phase will be the implementation of the Category A projects. The programme budget reflects when (which year) the interventions and studies will be implemented/undertaken. AFDP aims at tackling the overexploitation of fisheries resources in the inland water bodies and the inshore waters (especially in the Indian Ocean) and degradation of marine resources as a consequence of destructive fishing practices. Hence, the programme’s interventions will focus on development of fish farming, improving small-scale fisheries and deep-sea fishing to reduce the existing high pressure on the coastal marine fisheries. AFDP will promote innovative and sustainable measures to preserve the coastal ecosystem such as: (i) support towards the development or updating of the Tuna Fisheries Management Plan; (ii) continuous catch assessment and monitoring to ensure sustainable stocks; (iii) enhancing artisanal fishing through adoption of sustainable fishing techniques (e.g. Fish aggregating Devices (FDAs)); (iv) strengthening the capacity of the Department of Fisheries and allied agencies responsible for fisheries management functions; and, (iv) limitation on the area occupied by fish ponds (with recommended individual ponds sizes measuring less than 0.2 ha) to avoid significant impacts through physical, biochemical or other alterations on the existing aquatic and terrestrial environment.

45. In addition, AFDP will promote: (i) adequate irrigation facilities (less than 100 ha), and technologies; (ii) use of water saving technologies; and (iii) integrated soil and water management. These interventions aim at sustaining seed multiplication and production and securing farmers access to quality seeds. In addition to high quality seeds of adapted varieties, the Programme will also promote and scale up farmers use of climate smart agriculture (CSA) practices and sustainable agricultural

resources (land, water and biodiversity) management. The programme will also promote renewable energy along the fishing value chain (e.g. solar dryers tents for dagaa).

46. The attached ESMF provides further guidance on the requirements of environmental, social and climate impact assessments for each subproject under the AFDP. The ESMF will be disclosed 120 days prior to presentation to IFAD Executive Board. The ESMF contains TORs for the Category A interventions and criteria for all proposed interventions, lists typical environmental, social, occupational health and safety, and climate-related risks and impacts, as well as community health and safety risks, which could result from the programme's interventions and activities, and proposes mitigation actions for these risks and impacts, that will be integrated across the programme.

47. In addition, the ESMF provide guidance on how to conduct the following safeguards instruments essential for the implementation process:

- **Integrated Pest Management Plan (IPMP)** will prevent, evaluate and mitigate the use of pesticides or pesticide breakdown products;
- **Stakeholder Engagement Plan (SEP)** will guide stakeholder consultations for the duration of the various interventions and subprojects;
- **Grievance Redress Mechanism (GRM)** aims at promoting a mutually constructive relationship and enhance the achievement of Programme's development objectives. The GRM is to ensure that complaints are directed and expeditiously addressed by the relevant agencies, which are to enhance responsiveness and accountability.

48. The PCU will include an Environmental, Social and Climate (ESC) Specialist who will report to the Programme Coordinator. The ESC Specialist will work closely with the District Facilitation Teams (DFTs), particularly the District Environment Management Officers (DEMO), the District Agriculture Officers (DAO), the District Fisheries Officers (DFO), and the District Community Development Officers (DCDO), as well as the Regional Environmental Officer.

5. Climate risk category

49. The programme is expected to be moderately sensitive to climate risks and thus requires integration of climate adaptation and mitigation issues into the enhanced production, distribution and utilisation of quality seeds as well as fisheries and aquaculture development. Tanzania is vulnerable to increased climate variability and climate change over most parts of the country, but especially in the target area. Increasing temperature were observed notably over highland areas while late rainfall onsets and early cessation, decreasing rainfall amount and seasonal shifts in rainfall patterns are becoming more common nationwide.

50. Seed production is facing increasing negative impacts of climate change such as late rainfall onset, shorter cropping seasons, prolonged drought periods, floods and proliferation of several new insect pests and diseases attacking the different crops. In order to mitigate and adapt to uncertainties associated with climate variability and change, the programme will contribute to the development and seed multiplication of appropriate locally adapted varieties and CSA practices that are more resilient to climate change, pests and diseases.

51. The impact of climate change in fisheries is mainly associated with destruction/degradation of fish nursery grounds, breeding and feeding areas. The rise of sea surface temperature causes the destruction of coral reefs, which is a critical habitat for fishes in the coastal environments. Sea level rise, which is associated with global warming may cause sea water to rise above optimal levels of some corals, The effects of sea level rise include increased sedimentation and influences on coastal fish species due to the loss of intertidal areas which act as important nursery areas for both resident and migratory species.

52. Overharvesting and clearing for agricultural use or coastal development have significantly affected mangrove forests, which has declined by 20 % to 30 % over the past few decades. The loss

of mangrove forests has led to decreased estuarine biodiversity and shoreline protection from extreme weather events and increased sedimentation and erosion, which have negative impacts on seaweed farming taking place in shallow intertidal areas.

53. The Indian Ocean has extensive stocks of migratory species (e.g. skipjack, yellowfin and big eye tunas, and other large pelagic fish such as shark, swordfish and marlins, etc.). However, in 2016, the Ministry of Livestock and Fishery²³ expressed concerns about the status of some of the Indian Ocean stocks of migratory species. More recent data from IOTC suggests that the Yellowfin Tuna is overfished, while there is still some capacity to fish the other main Tuna species, especially the Skipjack Tuna, which is not overfished and currently not subject to overfishing. Albacore Tuna and Bigeye tuna are not overfished but subject to overfishing. The status of tuna-like species are mostly unknown as there is inadequate data. In addition, climate change can affect fisheries through different way such as coral reef bleaching, changes in water temperatures, wind velocity, sea level increases and wave action. Changes in rainfall patterns and increase in sea surface temperatures affects water levels, aquatic ecosystems, fish breeding sites and species diversity; and fish performance which lead to low fisheries production (URT, 2016).

6. Recommendations for project design and implementation

54. The targeting approach and strategy will include considerations on how to prioritize pro-poor outcomes through geographical targeting, direct identification of beneficiaries and ensuring that the programme interventions respond to their needs. A social inclusion strategy will guide women empowerment, youth and nutrition interventions. The programme will undertake a gender analysis as part of the baseline to identify specific needs for women and men including youth in seeds and fisheries production in order to ensure (i) economic empowerment (ii) balanced workloads and (iii) increased voice and decision-making especially for women and youth.

55. The PDR defines the characteristics of the youth that the project intends to work with. In particular, the different challenges and potential interest of young women/men, youth with disabilities, minors/adults (considering that youth in Tanzania is defined between 15 and 35 years old), and other vulnerable groups such as those living with HIV and AIDS.

56. **Youth.** The design mission noted that youth involvement in agriculture, fisheries and aquaculture is hampered by limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies. Majority of youth do not have practical experience in the fishing and aquaculture sector and especially females, considering it as an occupation for older males. Others prefer engaging in office jobs instead of field activities and yet fisheries and aquaculture is a highly practical field and therefore training and exposure may incentivise youth. To address these barriers, AFDP will support youth by: (i) improving opportunities and skills for micro-enterprises in seed production and multiplication for maize, beans and sunflower; (ii) enhancing their capacity as out-growers for seed companies in multiplication as well as greater emphasis on local seed production (Quality Declared Seeds, etc.) (iii) enhancing access to financial services through youth financial products (iv) Linking farmers to markets through the provision of Market Information is an opportunity for youth as they have access and skills in new technologies and mobile devices. (v) working with youth entrepreneurs as wholesalers and retailers of seed and opportunities for youth to provide packaging material to seed companies (vi) Youth as transporters of seed from field to testing centres and markets is a challenge for farmers and they require support in this regard and (iv) increasing youth participation, representation, and decision-making in programme forums and committees.

²³ URT, 2016 The Tanzanian Fisheries Sector, challenges and opportunities, Ministry of Agriculture, Livestock and Fisheries, Dar es Salaam

57. **Nutrition.** The AFDP identifies the following pathways to reach the desired nutrition outcomes which will require a comprehensive situation analysis on nutrition context including nutrient gaps of the targeted beneficiaries. AFDP seeks to improve household food security and community nutrition practices to adopt nutritious foods intake. Specifically, the programme will apply the following nutrition pathways:

- (i) Increased food production for own consumption and local markets. This will include promotion of household consumption of safe and nutritious, such as bio-fortified maize and beans, sunflower, fish and seaweed, dissemination of agricultural practices/ technologies for increased production and productivity of nutritious food both for own consumption and sale of surplus; and promotion of agricultural practices to increase year round availability of food for the households and in local markets.
- (ii) Integrated Homestead Food Production for diet diversification and income generation; encouraging farmers to adopt kitchen gardens for production of nutrient-rich and nutritious foods, such as fruits and vegetables; and increase consumption of animal-sourced foods, including fish products.
- (iii) Reduce post-harvest losses. AFDP will explore private sector partnerships with a focus on nutrition e.g. for food fortification, technologies and training farmers for safe home storage, home processing and food preservation to increase shelf-life.
- (iv) Targeted nutrition education for household members and communities will be integrated through the programme interventions. Nutrition education for extension workers and integration of nutrition modules will be integrated in Farmers Field Schools. Community kitchens and cooking classes for nutrient retention and promotion of healthy diets and hygiene, health and Water, Sanitation and Hygiene (WASH) campaigns (where there will be Rehabilitation and maintenance of water sources). Social Behaviour Change Communication (SBCCC) campaigns will seek demystify socio cultural practices and myths associated with foods and encourage adoption of nutritious foods amongst key populations such as pregnant and lactating mothers, children under 5 years and adolescents.

58. ***Climate change adaptation and mitigation options along targeted value chains.*** In line with the adaptation priorities of the NDC, climate smart agriculture will be promoted in this programme. Outlined activities such as water and soil management in the seed sector and promotion of drought tolerant varieties will contribute to the adaptation efforts. The programme will support capacity building of smallholders in good agricultural, fisheries and aquaculture practices as well as climate resilient practices. In addition, the siting of fisheries and aquaculture ponds and infrastructure would also take into account climate change related risks. Soil fertility, coastal and water resources management would also be beneficial for the smallholders. In the fisheries and aquaculture sector, a special emphasis will be given to the post-harvest and waste management, and support to the development of a Marine Spatial Plan.

59. The following table presents additional climate adaptation and mitigation options that will be mainstreamed in programme interventions:

Table 1: Climate change adaptation and mitigation options along selected value chains

Value chains	Adaptation options	Mitigation options
Capture fisheries	<ul style="list-style-type: none"> • Diversify livelihoods / create income sources from activities other than fisheries • Train fishing staff to build understanding of the effects of climate change on fish distribution, storm tracks and fisheries yield • Research the effects of climate change on species distribution • Make contingency plans to deal with loss of catch due to storms or die-off events • Explicitly include adaptation within the Tuna fisheries management plan • Consider the effect of new weather patterns on the health and well-being of fishers • Access higher-value markets; shift/widen targeted species or increase fishing capacity/effort • Migrate fishing effort/strategies and processing/distribution facilities; • Weather warning systems; improved vessel stability/safety/communications • Cooling (indoor systems) or provide shade (e.g. trees) 	<ul style="list-style-type: none"> • Use of energy efficient technologies (fuel efficient vessels and boats, processing facilities, etc.) • Energy savings in cold storage (design and management) • Use of renewable energy (solar dryers for dagaa drying, etc.) • Rehabilitate/protect ecosystems, such as mangrove forests, wetlands, seagrass beds and salt marshes by limiting fishing therein and banning the use of damaging fishing techniques. • Reducing overfishing and excess capacity, including adjusting fleet composition, by supporting small-scale fisheries and controlling industrial fisheries
Seaweed	<ul style="list-style-type: none"> • Locating seaweed farms in areas under particular risk from climate change impacts, such as low-lying coastal areas, vulnerable to flooding during storms with increasing sea level, areas prone to exposure to acidified and/or oxygen –depleted waters, may provide a tactical approach to enhance the benefits of seaweed aquaculture for climate change adaptation 	<ul style="list-style-type: none"> • Reduction of methane emission from livestock (seaweed feed additive to ruminants) • Seaweed farming contributes to carbon sequestration
Crop seed	<ul style="list-style-type: none"> • Maize and beans varieties that are tolerant to drought, heat or water logging and are resistant to diseases and pests and insects, and to effectively contribute to mitigating climate change, • Introduce new varieties of existing crops, e.g. with greater drought or flood resistance • Practicing conservation agriculture and precision agriculture • Diversify agricultural activities within single farm units, e.g. introduction of agro-forestry systems, intercropping, etc... • Increase range of water sources (and collection/ storage facilities) • Re-schedule planting and harvesting dates depending on seasonal forecasts • Introduce new tillage and drainage methods to reduce soil erosion and keeping soil moisture • At farm level, identify alternative sources of water supply during drought • Make contingency plans to deal with loss of crops due to drought or flood • Early sowing enabled by improvements in sowing machinery or dry sowing techniques. • Use intercropping where appropriate 	<ul style="list-style-type: none"> • Reducing the emissions intensity along the agriculture value chains, including avoided land use changes driven by agriculture • Sequestering additional carbon in agriculture systems through proper site selection and land preparation (see appendix 2) on Good Agricultural Practices); • Reducing overall agricultural production (e.g. by reducing food loss and waste) or shifting away from high-carbon intensity agricultural products • water resources management

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

	<ul style="list-style-type: none"> • Make use of integrated systems involving livestock and/or aquaculture to improve resilience. • Change post-harvest practices, for example the extent to which grain may require drying and how products are stored after harvest. • Within FFS module, provide information to institutions and carry out awareness raising activities, especially on effects climate change, seasonal forecasts, etc. • Within FFS module, Train staff to build understanding of climate change / improve operational performance in dealing with climate risks • Work more closely with other users of water in the relevant catchments to ensure sustainable water supplies (establish water users associations when necessary) • Improve pest and disease control practices • Climate resilient plant genetic resource identification, conservation and dissemination 	
Aquaculture	<ul style="list-style-type: none"> • Improve aquaculture farm size, siting and design • use hatchery seed, protect broodstock and nursery habitats • Fish meal/oil replacement; better feed management; genetic improvement for alternative feeds; shift away from carnivorous species; culture of bivalves and seaweeds • Adapt production and handling techniques; move production zones, change species selection 	<ul style="list-style-type: none"> • Biosecurity enhancing practices/technologies/systems (e.g. use of specific pathogen free stocks, polyculture, green water technology, biofloc, recirculation systems).

7. Further studies needed

60. In parallel to the design mission, an Environment and Social Framework (ESMF) was conducted to examine the risks and impacts of project activities. The ESMF sets out the principles, rules, guidelines and procedures to assess environmental and social risks and impacts. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures and appropriate roles, responsibilities and capacity for managing, mitigating and monitoring environmental and social concerns related to the project. It includes adequate information on the areas in which activities are expected to be cited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and potential mitigation measures. It also includes adequate institutional mechanisms to allow the lead agencies to implement the recommended measures.

61. The ESMF has identified the following types of safeguards documentation required to be prepared for AFDP namely (*see below table 2 of required studies and further details within chapter 9 of the ESMF*):

- Environmental and social impact assessment studies (ESIAs) and Environmental and Social Impact Statements (ESISs) for Category A projects
- Project Briefs (PBs) - equivalent to SECAP's Category B Environmental and Social Management Plans) for Category B projects;
- Standard Operating Procedures (SOPs) and activity-specific management plans;
- Basic climate risk analysis (CRA)
- Integrated Pest Management Plan (IPMP) where agrochemicals are to be used;
- Grievance Redress Mechanism (GRM)
- Stakeholder Engagement Plan (SEP) to guide stakeholder consultations for the duration of the various interventions and subprojects.

62. As ESIA are done in tandem with the feasibility studies and design development, it is important that:

- Stakeholder concerns – particularly those of the communities and project affected persons - are addressed in the ESMPs, and if they are not, reasons for doing so should be explained;
- Communities shall also be informed about the Grievance Redress Mechanism (GRM) within the programme
- The subproject designs and activities should be presented to the target beneficiaries for their approval and acceptance.

63. All ESIAs are required to be undertaken by a NEMC-registered expert. The outcome of the ESIA studies will be the preparation of Environmental Impact Statements (EISs), which will be submitted to the ESC Specialist for review to ensure that all critical issues are properly addressed and the documents meet both NEMC's and IFAD's quality standards. The EISs will then be submitted to NEMC for review and approval. **ESIAs for Category A subprojects will be disclosed on the IFAD website and national platforms during the NEMC review for a period of 60 days”.**

64. Below is a table depicting the specific studies/ project briefs required for all AFDP interventions:

Table 2: Screening Categorisation for AFDP Interventions

Components and Interventions	Activity categorisation		No. of ESIA/PB Studies
	GoT/RGZ	SECAP	
Component 1. Enhanced productivity of crop seeds and fisheries			

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

Components and Interventions	Activity categorisation		No. of ESIA/PB Studies
	GoT/RGZ	SECAP	
Subcomponent 1.1: Crop seed systems development: National seed demand and supply coordination, Innovation development and Early Generation Seed production; Basic seed multiplication; Seed certification			
Irrigated fields as seed farms <100ha in size including: laboratory, seed dryer, processing plants, workshops for farm equipment maintenance, water reservoirs, and seed treatment and storage facilities for produced seed, and boreholes	B1	B	2 PB
Irrigation schemes for EGS approx. 25ha in size including: laboratory, workshops for farm equipment maintenance, water reservoirs, seed treatment and storage facilities, and boreholes.	B2	B	2 PB
Seed Testing Laboratories (infrastructure & equipment) Seed certification (field and lab control, electronic systems for seed authentication)	B1	B	3 PB
Subcomponent 1.2: Fisheries and aquaculture development: Development of sustainable marine fisheries production system; Increasing aquaculture productivity and output; Increasing mariculture productivity and output			
Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and storage >50T /day	A	A	1 ESIA
Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and storage <50T /day	A	A	1 ESIA
Support to artisanal fishing: provision of fishing gear to artisanal fishers (90 FADs)	B2	B	1 PB
Aquaculture demonstration centres at 3 ADC sites, incl borehole and one water supply system at Kingolwira	B1	B	3 PB
Additional Borehole at Boma Road for Kingolwira ADC	B1	B	1 PB
Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration farm	n/a	B	1 PB
Mariculture training centres x 2 (Unguja and Pemba) <360 students	n/a	B	2 PB
Component 2. Improved market access, value addition and private sector development			
Subcomponent 2.1: Quality seed use and business development: Zonal multi-stakeholder innovation platforms. Promoting offer and access to improved seeds. Promoting awareness and demand for improved seeds			
Distribution networks, linkages between agrodealers and farmers to facilitate access to improved seeds	n/a	C	0
Promotion of use of improved varieties and CSA practices (targeted support to extension)	n/a	C	0
Support FO for services for member access to inputs and markets	n/a	C	0
ICT platforms for dissemination of information on seed availability (improved varieties and quantities)	-	B	1 PB
Sub-component 2.2: Fish market development and value addition: Reducing post-harvest losses. Private-Public-Producer partnerships (4Ps) joint venture for deep sea fishing. Increasing value/income from aquaculture production			
Ice plants for smallscale fishers x 8 (cap <50T/day)	B1	B	8 PB
Cold chain: Cold storage facilities (40 t/facility) x2 and Refrigerated trucks x5	B1	B	2 PB
Construction of fish market at Kipumbwi, incl. storage and ice plant	B1	B	4 PB
Dagaa solar powered drying racks x80	n/a	B	1 PB
Solar drying tents for seaweed and machines for grinding dried seaweed x5	n/a	B	1 PB
Fish feed mills	n/a	B	1 PB
Component 3. Programme Management and Coordination			
Subcomponent 3.1: Policy engagement and institutional strengthening			
Institutional reforms in public institutions	n/a	C	0
Development of aquaparks (aquaculture cluster growth model)	n/a	C	0
Subcomponent 3.2: Programme Management and Coordination: Programme management, coordination, monitoring and evaluation (M&E), communication and knowledge management			
	n/a	C	0
Subcomponent 3.3: Emergency recovery and resilience post COVID-19			
	n/a	C	0

Components and Interventions	Activity categorisation		No. of ESIA/PB Studies
	GoT/RGZ	SECAP	
TOTAL NUMBER OF ESIAS AND PROJECT BRIEFS			36

8. Monitoring and evaluation

65. Key performance indicators for gender, youth, indigenous peoples, nutrition include :

- Participatory socio economic, nutrition gender and youth analysis at community level at the start of the project or baseline
- Agreed criteria for selection of beneficiaries who will receive different benefit packages promoting meaningful participation of youth and women in project and local governance processes
- Mechanisms for inclusion of all key groups in project related processes i.e. men and women of different socio-economic groups, gender and age
- Participatory assessment of other common social risks and barriers identified in project design that could compromise their participation in project activities; and
- Development of a project grievance mechanism for project beneficiaries know where to go for help and provide feedback on services as well as any challenges they face in participating in project activities
- Participatory planning and monitoring throughout the lifetime of the project, inclusive data collection, analysis and dissemination use of disaggregated data by socio-economic group, gender and age.
- Monitoring intended and unintended changes in in the project implementation in relation to gender inequality, youth and social cohesion.
- Allocation of funds in the Annual Work Plans and Budgets for targeted interventions for youth, women and vulnerable groups

66. Key performance monitoring requires that:

- The various safeguards instruments (ESIAs, Project Briefs, ESMPs, and IPMP) have been prepared to the required standard, within the required timelines;
- The safeguards instruments have been reviewed and approved by the responsible entities;
- Environmental, social and climate mitigation measures, have been/are being implemented and that mitigation measures are effective. This includes monitoring the implementation of the ESMPs and IPMP, and also the grievance redress mechanism(s);
- The community is participating in all stages of the environmental and social management and monitoring processes;
- PCU and relevant officers in the implementing agencies have been trained in accordance with the capacity building proposals;
- Reports are prepared and delivered as required.

67. A Preliminary Environment and Social Management is attached as appendix 1.

9. References

1. To gain a better understanding of challenges and opportunities along the targeted value chains, the design team conducted several meetings (including teleconference) with :
 - **Development partners:** African Development Bank (AfDB), Agence Française de Développement (AFD), FAO, World Bank (SWIOFISH), Embassy of Norway, Embassy of Sweden, Embassy of Japan, Koica, The Nature Conservancy Tanzania and Seychelles, Ministry of Environment -Seychelles
 - **Research institutions:** Indian Ocean Tuna Commission (IOTC), Tanzania Fisheries Research Institute (TAFIRI)
 - **Relevant line ministries:** Vice President Office (Division of Environment), Ministry Of Agriculture, Ministry of livestock and Fisheries, Ministry of Water and Sanitation, Ministry of

Community Development, Gender, Elderly and Children (MoHCDEC) and Ministry of Labour, Employment and Youth Development

2. Below is the list of articles that informed the present review note:

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10. Luhunga PM, Kijazi AL, Chang'a L, Kondowe A, Ng'ongolo H and Mtongori H (2018) Climate Change Projections for Tanzania Based on High-Resolution Regional Climate Models From the Coordinated Regional Climate Downscaling Experiment (CORDEX)-Africa. *Front. Environ. Sci.* 6:122. doi: 10.3389/fenvs.2018.00122
11. McGahey, D., Davies J., Hagelberg, N. and Ouedrougba, R., 2014, Pastoralism and the new green economy: a natural nexus, Nairobi, IUCN and UNEP. x+58p
12. Moustahfid H, Marsac F., Gangopadhyay A., 2018, Chapter 12: Climate change impacts, vulnerabilities and adaptations: Western Indian Ocean marine fisheries, within FAO, 2018, *Impacts of climate change on fisheries and aquaculture Synthesis of current knowledge, adaptation and mitigation options*.
13. Msuya F., 2011, Environmental changes and their impact on seaweed farming in Tanzania, *World Aquaculture* 71, 42:4 pp34-37
14. Musiimi et al 2016. National Survey and Segmentation of Smallholder Households in Tanzania available at <https://www.cgap.org/sites/default/files/Working-Paper-Smallholder-Survey-Tanzania-May-2016.pdf>
15. Roxy & al., 2014, The curious case of Indian Ocean Warming, *American Meteorological Society*, 8501-8509
16. URT-VPO (United Republic of Tanzania, Vice- President's Office). 2012b. National Climate Change Strategy. Dar es Salaam, Tanzania: Division of Environment, Vice President's Office.
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SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

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24. World Bank, 2019, Tanzania Country Environmental Analysis Environmental Trends and Threats, and Pathways to Improved Sustainability International Bank for Reconstruction and Development / The World Bank

Appendix 1: Preliminary Environment and Social Management Plan Matrix

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
<i>Environmental Risks and Impacts</i>						
<p>Abstraction of water for irrigation and aquaculture resulting in unavailability/reduction of water for downstream use in the case of river source, particularly in the dry season leading to threats to aquatic ecosystems.</p>	<ul style="list-style-type: none"> • Maintain environmental flow in river source • Adhere to permitted abstraction volume as stipulated in water user permits. 	<p>Meetings and site visits; consultations with farmers and surrounding communities</p>	<p>ASA, TARI, ADC Basin Water Boards</p>	<p>Water abstraction records at intakes and boreholes</p>	<p>Quarterly</p>	<p>Part of routine operating costs</p>
<p>Excavation activities and/or clearing of vegetation during construction of irrigation schemes, buildings/workshops, storage and processing facilities, leading to:</p> <ul style="list-style-type: none"> - Soil erosion, - Dust emissions, - Loss in biodiversity; - Resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources and/or sea 	<ul style="list-style-type: none"> • Minimise/prevent soil erosion by controlling earthworks, installing and maintaining drainage structures and erosion control measure; use zero-till/reduce till methods of land preparation. • Mitigation through restoration of the sites after works in accordance with contractors environmental and social management plans (CEMPS) • Any existing riparian vegetation should be maintained (not cleared) • Use zero-till/reduced till methods for land preparation • If mechanized clearing, where water is available, keep dust down by watering exposed/ worked surfaces • If possible, schedule clearing activities such that they avoid the height of the dry seasons. 	<p>Meetings and site visits</p>	<p>ASA, TARI, ADC</p>	<p>Site monitoring reports</p>	<p>Weekly or monthly during construction</p>	<p>Included in Programme implementation and routine operating costs</p>

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	<ul style="list-style-type: none"> Careful and continuous supervision of clearing activities so that only areas required for plot/fields are cleared. Monitor water quality 					
<p>Use of agrochemicals, leading to pollution due to leaching, seepage or transmission of agrochemicals through the soil into water sources; threats to aquatic ecosystems (ecology, fauna, flora, etc.)</p>	<ul style="list-style-type: none"> Prepare and implement an Agrochemical Management System, and an Integrated Pest Management Plan Minimise use of agrochemicals through adopting conservation agriculture techniques, explore organic/natural fertilizers, agrochemicals Manual removal of weeds Careful supervision of application of agrochemicals Use agrochemicals registered and approved by MOA/TPRI, WHO and FAO Train farmers/aquafarmers in proper use, handling, storage, and disposal of agrochemicals. Ensure agrochemical containers are disposed of as hazardous waste according to waste management regulations Keep records of agrochemicals used, application amounts. Monitor water quality in soils and water sources 	<p>Meetings and site visits; consultations with farmers and surrounding communities</p>	<p>ASA, TARI, TPRI</p>	<p>Agrochemical Management System documentation IPMP prepared Training records Records of agrochemicals stored and applied</p>	<p>AMS and IPMP in place at start up Subsequently quarterly monitoring</p>	<p>Included in Programme implementation and routine operating costs</p>

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
Over-watering of fields leading to water logging and salinization	<ul style="list-style-type: none"> Control water supplied to fields Fields should have slight gradients so as to allow drainage of excess water Maintain drainage canals and other drainage structures 	Meetings and site visits	ASA, TARI	Site visit reports, water consumption records	Monthly	Routine operating costs
Disposal of laboratory reagents, affecting functionality of septic tanks and sewage systems, and leading to chemical pollution of water courses and soil.	<ul style="list-style-type: none"> All effluent from laboratories to be treated to conform with Tanzania Bureau of Standards TZS 860: 2005 General Tolerance Limits for Municipal and Industrial Wastewaters prior to discharge into septic tanks, sewage systems or surface waters Wastewater quality testing 	Meetings and site visits	TOSCI, Municipal Councils, Water basin offices in respective areas	Maintenance records Water quality test results	Quarterly	Routine operating costs
Oil pollution from spills or leaks fuel, oils and lubricants from farm machinery, oily bilge water from vessels	<ul style="list-style-type: none"> Where fuel is stored in bulk, the fuel tank should be contained in a bund of 110% tank capacity Where fuel drums are used these should be stored on sump pallets. Establish procedures for fuel delivery; decanting/draining; use, storage; spill response; disposal of waste oil; handling of oil products Establish procedures for treatment of oily bilge water: use of oil/water separators and storage in waste oil collection tanks until vessel can dispose of it safely onshore. 	Meetings and site visits	ASA, TARI, ADC TAFICO, ZAFICO	SOPs prepared Site visit reports	SOPs prepared at start up Subsequently quarterly monitoring	Included in Programme implementation and routine operating costs
Overfishing from DSF vessels and unsustainable artisanal	<ul style="list-style-type: none"> Strengthen data reporting and monitoring Develop and implement deep sea tuna fishing management plans 	Meetings and site visits; consultations with artisanal fishers and coastal communities	DSFA TAFICO, ZAFICO MLF, MANRLF, IOTC	Catch records	Quarterly	Included in Programme implementation

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
fishing gears and increase in FADs	<ul style="list-style-type: none"> Capacity building of local fishery management institutions and systems. Partnerships and synergies with regional and international expertise institutions Develop FAD management strategies Promote sustainable fishing gears through gear exchange programmes 					and routine operating costs
Juvenile catch and bycatch of non-targeted species	<ul style="list-style-type: none"> Strengthen data reporting and monitoring Develop and implement deep sea tuna fishing management strategies Promote sustainable gears, with effective mesh-size controls; Promote selective fishing methods using baits 	Meetings and site visits; consultations with artisanal fishers and coastal communities	DSFA TAFICO, ZAFICO MLF, MANRLF	Bycatch and catch records	Quarterly	Included in Programme implementation and routine operating costs
Risk of escape of seaweed culture to open sea	<ul style="list-style-type: none"> Prepare biologically coupled hydrodynamic models to support the assessment of risk, understand carrying capacity of water bodies and select suitable sites for seaweed cultivation Seaweed farm management practices to enhance biosecurity measures. 	Meetings and site visits; consultations with sea weed farmers, artisanal fishers	MANRLF	Monitoring reports	Quarterly	Cost of model TBD Seaweed farm management part of routine operation costs
Social Risks and Impacts						

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
<p>Irrigation, aquaculture resulting in reduced availability of water for other ongoing and planned developments, causing conflict between communities and project interventions</p> <p>Competition for water sources with community sources</p>	<ul style="list-style-type: none"> • Ensure environmental flow is maintained to cater for human, livestock and ecological needs • Ensure community water sources are not compromised • Establish grievance redress mechanism to deal with conflicts • Creation of water users associations when necessary 	<p>Meetings and site visits; consultations with farmers and surrounding communities</p>	<p>ASA, TARI, ADC Basin Water offices</p>	<p>Water abstraction records</p> <p>Complaints received and resolved</p>	<p>Monthly</p>	<p>Routine operating costs</p>
<p>Poor application and handling of agrochemicals: touching, inhaling or ingesting toxic chemicals leading to dermatological or gastric ailments, or poisoning.</p>	<ul style="list-style-type: none"> • Develop agrochemical management system and IPMP describing handling, storage, use and disposal of all agrochemicals used on the schemes. • Train farmers in the handling, safe storage, application and disposal of all agrochemicals. 	<p>Meetings and site visits; consultations with farmers and surrounding communities</p>	<p>ASA, TARI, ADC TPRI</p>	<p>Agrochemical Management System documentation</p> <p>IPMP prepared</p> <p>Training records</p> <p>Records of agrochemicals stored and applied</p>	<p>AMS and IPMP in place at start up</p> <p>Subsequently quarterly monitoring</p>	<p>Included in Programme implementation and routine operating costs</p>
<p>Poor treatment application methods and improper storage leading to proliferation of aflatoxins and resulting health effects on community</p>	<ul style="list-style-type: none"> • Remove sources of contamination, promoting better agricultural and storage techniques (control moisture, temperature, and aeration) • Ensure adequate resources are available for testing and early diagnosis, and enforcing strict food safety standards, • Sensitisation of farmers and consumers about risks of aflatoxins • Create general awareness about personal protection 	<p>Meetings and site visits; consultations with farmers and surrounding communities</p>	<p>ASA, TARI</p>	<p>Site visit reports</p> <p>Records of sensitisation provided to farmers and consumers</p>	<p>Quarterly</p>	<p>Routine operating costs</p>

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	<ul style="list-style-type: none"> • Chemical decontamination or use of enterosorbents for contaminated grains • Promotion of post-harvest technologies (e.g. metal silos, hermetic bags, etc.) 					
Encroachment by deep sea and artisanal fishers into marine protected areas or sensitive coastal areas affecting marine biodiversity	<ul style="list-style-type: none"> • Establish buffer zones between marine protected areas and EEZ • Empowering fisheries cooperatives/ local communities in charge of management of natural resources 	Meetings and site visits; consultations with deep sea crews, fishers, artisanal fishers, and surrounding communities	DSFA TAFICO, ZAFICO	Incidences reported of encroachment into protected waters	Quarterly	Included in Programme implementation and routine operating costs
Conflicts in use of coastline for seaweed vs tourism and other activities using same resources	<ul style="list-style-type: none"> • Consultations between seaweed farmers, tourism operators, government offices and other key stakeholders to agree on how to use/share beach area. • Establish grievance redress mechanism to deal with conflicts • Develop Marine Spatial Plan designating specific zones for specific activities along coastline. 	Meetings and site visits; consultations with sea weed farmers, artisanal fishers, tourism stakeholders	PCU Department of Fisheries of MANRLF	Records of consultations Complaints received and resolved	Quarterly	Routine operating costs MSP cost TBD
Women may be marginalised from participating in seaweed cultivation if access to training is limited and if technologies make it difficult for women (eg if seaweed is to be grown in deeper water)	<ul style="list-style-type: none"> • Continuous consultations and dialogue between project implementors and potential women participants/ beneficiaries to establish how to overcome some of these difficulties. 	Meetings and site visits; consultations with women and youth targeted for seaweed farming	PCU Department of Fisheries of MANRLF	Consultation records	Quarterly	Included in Programme implementation costs
Inequitable labour and working conditions.	<ul style="list-style-type: none"> • Ensure labour and working conditions are in line with national labour laws and ILO core conventions: equal pay, non-discrimination 	Meetings and site visits	PCU Ministry of Labour and Employment (TZ), Ministry of Labour, Empowerment, Elderly,	Work/employment contracts	Quarterly	Routine operating costs

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

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			Youth, Women and Children (ZNZ)			
Gender based violence (GBV) i.e. transactional sex (fish for sex) and Intimate Partner Violence,	<ul style="list-style-type: none"> • Create awareness on prevention, handling and referral for all forms of GBV and child labour – integrated in the project activities 	Meetings and consultations	PCU, all Programme entities	Consultation records	Quarterly	Included in Programme implementation and routine operating costs
Preventing child labour along agricultural value chains	<ul style="list-style-type: none"> • sensitizes the PCU, implementing partners and collaborating partners on the risks of child labour along the proposed value chains and potential mitigation actions; • links the PCU, implementing and collaborating partners with the local ILO office and the Ministry of Labour, both in Mainland and Zanzibar, as well as with local/district level child labourfocal points; • (sensitization of the PCU’s Environment and Social Management Specialist to identify, report, and monitor cases of child abuse in programme sites and, • Awareness of beneficiaries and relevant stakeholders on how to report cases of child labour through the programme’s Grievance Redress Mechanism (GRM) and that identified cases are addressed in collaboration with the local ILO/Ministry of Labour offices and local administration. 	Training, meetings and consultations	PCU, ILO, Ministry of Labour	Consultations records, Complaints received and resolved	Quarterly	Included in Programme implementation and routine operating costs

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
ANNEX 8. SECAP REVIEW NOTE (OUTLINE)

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Retrogressive social norms prevent women and youth from participating and benefitting from project activities	<ul style="list-style-type: none"> • Use of GALS methodology and or other gender participatory methodologies to empower women and make women’s roles, needs and aspirations visible; and sensitizing smallholder farmers, women, men and youth to increase their participation • Increasing women’s access to knowledge, skills, inputs and finance through training, matching grants, exposure visits and GALS fairs • Increasing women and youth’s visibility as actors in the value chains through representation quotas 	Community dialogue and household focused interventions	PCU, all Programme entities	Consultation records	Quarterly	Included in Programme implementation and routine operating costs
Climate Risks and Impacts						
Pests and disease outbreaks, including locusts, fall army worm, fish diseases	<ul style="list-style-type: none"> • Establish early warning systems • FOs to be trained in accessing climate early warning systems • Encourage FOs to develop alternative livelihood means through safety nets • Develop and implement IPMP 	Meetings and site visits; consultations with farm workers and surrounding communities	ASA, TARI, ADC	Documentation on Early Warning Systems Training records	IPMP in place at start up Subsequently quarterly monitoring	Included in Programme implementation and routine operating costs
Excessive rain, wind or floods may damage project buildings and road and water infrastructure.	<ul style="list-style-type: none"> • Install and maintain drainage structures to regulate stormwater and runoff/run on 	Meetings and site visits	ASA, TARI, ADC	Site visit reports	Quarterly	Routine operating costs
Excessive rain, wind or floods may cause severe soil erosion	<ul style="list-style-type: none"> • Install and maintain drainage structures to regulate storm water and runoff/run on • Use zero-till/reduced till methods for land preparation 	Meetings and site visits	ASA, TARI, ADC	Site visit reports	Quarterly	Included in Programme implementation and routine operating costs

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES
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Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
Droughts and dry spells	<ul style="list-style-type: none"> • Selection of drought tolerant varieties for crop seed (maize, beans and sunflower) • Water-efficiency at farm level 	Consultations meetings with key stakeholders	TARI	Site visit reports Consultation records	Quarterly	Included in Programme implementation and routine operating costs
Sea water rise may affect project structures if located to close to the sea, and make seaweed farming difficult	<ul style="list-style-type: none"> • Careful siting and maintenance of structures based on predicted sea level rise 	Meetings and site visits; consultations with sea weed farmers	PCU Fisheries Department of MANRLF	Site visit reports	Quarterly	Included in Programme implementation and routine operating costs
FADs cut loose due to cyclones or severe wave action leading to ghost fishing	<ul style="list-style-type: none"> • Use of smart FADs include sonar and GPS capabilities so that the operator can remotely contact it via satellite to determine the location if cut loose. • Use of biodegradable materials for FADs • Monitor break away FADs 	Meetings and site visits; consultations with artisanal fishers	Fisheries department at Bagamoyo, Kilwa, Mafia and Pangani District Councils	Site visit reports Consultation records Reports of lost FADs	Quarterly	Included in Programme implementation and routine operating costs

Appendix 2: Outline of Good Agricultural Practices along crop seed production

<i>Types of GAP</i>	<i>example of considerations before adopting specific practice</i>
Site selection	<ul style="list-style-type: none"> ➤ Cultivation methods, erosion control measures, irrigation, flood control, pest and diseases and land history, suitability of previous crop rotation , etc.
Land preparation	<ul style="list-style-type: none"> ➤ Methods that ensure soil conservation, water resource management and environmental conservation such as: terracing, tillage, hoeing mulching, strengthen soil structure and avoid leaving the surface exposed to wind and rain at times of highest risk, proper spacing, etc.
Maintaining soil fertility	<ul style="list-style-type: none"> ➤ Maintaining soil organic matter through mulching and allowing plant stalks to rot in the field, crop rotation, aerate the soil, provide drainage if necessary, Application of compost, manure and inorganic fertilizer in correct amounts and timing and by methods that are appropriate to agronomic and environmental requirements , fertilizer storage, etc;
Water resources management	<ul style="list-style-type: none"> ➤ Maximize water infiltration and minimize unproductive efflux of surface water from watersheds. ➤ Manage ground and soil water by proper use, or avoidance of drainage where required. ➤ Adopt techniques to monitor crop and soil water status, accurately schedule ➤ When irrigating, prevent soil salinization by adopting water-saving measures. ➤ Establish permanent cover, or maintain or restore wetlands as needed. ➤ Manage water tables to prevent excessive extraction or accumulation, and provide adequate, safe and clean watering points for livestock.
Integrated pest management	<ul style="list-style-type: none"> ➤ Learning crop protection basics, define appropriate stages of interventions, biological, physical and chemical methods coupled with farming practices that prevent problems (e.g. association of crops, plot selection and layout, destruction of crop residue, Tilling, reasoned fertilization, resistance varieties,, etc.



Investing in rural people

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 6: First Annual Work Plan and Budget (AWPB)

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

A 1. 18 months Annual Work Plan and Budget										
Project Name: Agriculture and Fisheries Development Programme (AFDP)										
Principal Recipient: The United Republic of Tanzania (Tanzania)										
Currency: US\$										
# Budget line by Component, sub component and Activity	Unit	Total No. # of Units	Unit Costs (US\$)	Q1	Q2	Q3	Q4	Q5	Q6	Total (US\$)
A. C1.1.1. National seed demand and supply coordination										
1. Conduct zonal multi-stakeholder meetings for seeds actors along th	number	2.00	15,000	-	-	15,000.0	-	-	15,000.0	30,000.0
2. Intermediate technical stakeholder meetings (mid year)	number	2.00	2,000	-	-	2,000.0	-	-	2,000.0	4,000.0
3. ESIA Studies										
Irrigated fields as seed farms <100ha in size /a	Study	2.00	10,000	-	-	10,000.0	10,000.0	-	-	20,000.0
Irrigation schemes for EGS, each approx 25ha in size /b	Study	2.00	7,000	-	-	7,000.0	7,000.0	-	-	14,000.0
Seed Testing Laboratories (infrastructure & equipment) Seed certification (field and lab control, electronic systems for seed authentication)	Study	3.00	10,000	-	-	30,000.0	-	-	-	30,000.0
4. Information system on seed availability and access										
Develop digital platform for seed information system	lump sum	3.00	26,000	-	-	26,000.0	26,000.0	26,000.0	-	78,000.0
Annual updating of seed information system	lump sum	1.00	10,000	-	-	-	-	10,000.0	-	10,000.0
Specialized technical studies	lump sum	2.00	10,000	-	-	10,000.0	10,000.0	-	-	20,000.0
Other seed information diffusion - Prepare GAP and disseminate to LGAs	number	6.00	5,000	-	-	15,000.0	-	15,000.0	-	30,000.0
Other seed information diffusion - Conduct ToT Training to SMS at LGAs /c	number	10.00	4,500	-	-	22,500.0	-	22,500.0	-	45,000.0
Other seed information diffusion - National information diffusion /d	number	2.00	10,000	-	-	10,000.0	-	10,000.0	-	20,000.0
Other seed information diffusion - National information diffusion /e	number	12.00	5,000	-	-	30,000.0	-	30,000.0	-	60,000.0
6. Transport and communication equipment										
Vehicles for field extension activities (LGAs, ASA, TARI, TOSCI)	number	1.00	57,500	-	-	-	57,500.0	-	-	57,500.0
Laptop computer	number	2.00	1,500	-	-	3,000.0	-	-	-	3,000.0
Printer	number	2.00	1,500	-	-	3,000.0	-	-	-	3,000.0
Scanner	number	1.00	1,000	-	-	1,000.0	-	-	-	1,000.0
B. C1.1.2. Innovation development and Early Generation Seed produ										
1. Field activities										
Supplementary area for breeding and CSA research (maize, sunflower, beans)	hectare	10.00	3,000	-	-	15,000.0	-	15,000.0	-	30,000.0
Upgrade Irrigation systems for prebasic seed (15ha Ilonga, 10 ha Selian)	hectare	30.00	7,500	-	-	-	112,500.0	-	112,500.0	225,000.0
Field equipment tractor 95 hp	unit	3.00	42,400	-	-	-	84,800.0	-	42,400.0	127,200.0
Field equipment: implements (harrow, seeder, etc)	unit	3.00	72,000	-	-	-	144,000.0	72,000.0	-	216,000.0
Field equipment (trailer, other etc)	unit	3.00	29,660	-	-	-	59,320.0	29,660.0	-	88,980.0
2. Post-harvest Facilities										
Post-harvest seed treatment (2 t/day)	lump sum	1.00	67,796	-	-	-	-	-	67,796.0	67,796.0
Cold rooms for long term germplasm storage	unit	1.00	38,135	-	-	-	-	-	38,135.0	38,135.0
Warehouses for seed storage /g	unit	1.00	70,000	-	-	-	-	-	70,000.0	70,000.0
Seed grader	unit	1.00	30,000	-	-	-	-	-	30,000.0	30,000.0
3. Laboratories infra/equipment										
Basic seed labs (Ilonga, Selian)	unit	2.00	75,000	-	-	-	75,000.0	-	75,000.0	150,000.0
Green/screenhouses for breeding activities /h	unit	3.00	20,000	-	-	-	40,000.0	-	20,000.0	60,000.0
Upgrade scientific laboratory equipment (molecular biology, breeding, soil) /i	lump sum	0.00	929,430	-	-	-	-	-	-	-
4. Vehicles										
Vehicles for field research activities /j	number	4.00	57,500	-	-	-	115,000.0	115,000.0	-	230,000.0
Motobikes for field work	number	6.00	1,694	-	-	-	5,082.0	5,082.0	-	10,164.0
5. Research capacity strengthening										
PHD training (local and abroad universities) /k	per year	2.00	18,000	-	-	-	36,000.0	-	-	36,000.0
Specialised short-term scientific training /l	training	6.00	5,000	-	-	20,000.0	-	5,000.0	5,000.0	30,000.0
Participation at conferences and publications /m	workshop	5.00	5,000	-	-	15,000.0	-	5,000.0	5,000.0	25,000.0
Publications	set	5.00	1,000	-	-	-	2,000.0	-	3,000.0	5,000.0
6. Research costs										
Germplasm prospection and maintenance	per year	2.00	20,000	-	-	-	20,000.0	-	20,000.0	40,000.0
Germplasm characterisation/identification	per year	2.00	8,000	-	-	-	8,000.0	-	8,000.0	16,000.0
Strategic breeding activities for lowland/mid Maize	per year	4.00	10,000	-	-	-	30,000.0	-	10,000.0	40,000.0
Strategic breeding activities for lowland/mid Sunflower (OPV & hybrid)	per year	2.00	15,000	-	-	-	15,000.0	-	15,000.0	30,000.0
Strategic breeding activities for lowland/mid Beans	per year	2.00	15,000	-	-	-	15,000.0	-	15,000.0	30,000.0
Strategic breeding activities for lowland/mid pulses	per year	2.00	10,000	-	-	-	10,000.0	-	10,000.0	20,000.0
Other support to test adapted CSA practices	per year	2.00	15,000	-	-	-	15,000.0	-	15,000.0	30,000.0
Breeder seed purification /n	per year	1.00	5,000	-	-	-	-	-	5,000.0	5,000.0
Molecular Screening of variety identity /o	per year	1.00	5,000	-	-	-	-	-	5,000.0	5,000.0
Multilocational variety trials	per year	8.00	5,000	-	-	-	20,000.0	10,000.0	10,000.0	40,000.0
Participative selection & multilocational variety trials	per year	8.00	5,000	-	-	-	20,000.0	10,000.0	10,000.0	40,000.0
Variety registration /release	per year	0.00	3,500	-	-	-	-	-	-	-
7. Enhancing scientific collaboration with regional and internatio										
Prebasic seed production (operational capital build-up) /p	lump sum	5.00	3,000	-	-	-	9,000.0	3,000.0	3,000.0	15,000.0
Prebasic seed production (operational capital build-up) /q	lump sum	4.00	3,000	-	-	-	6,000.0	3,000.0	3,000.0	12,000.0
Prebasic seed production (operational capital build-up) /r	lump sum	4.00	3,000	-	-	-	6,000.0	3,000.0	3,000.0	12,000.0
Prebasic seed production (operational capital build-up) /s	lump sum	2.00	3,000	-	-	-	3,000.0	-	3,000.0	6,000.0
8. Promotion and awarness of improved technologies										
Promotion of var adoption: field farmer days	number	5.00	5,000	-	-	5,000.0	10,000.0	5,000.0	5,000.0	25,000.0
Participation at Agricultural shows	number	3.00	5,000	-	-	5,000.0	-	5,000.0	5,000.0	15,000.0
Promotion and awarness of improved tech /t	lump sum	4.00	5,000	-	-	5,000.0	5,000.0	5,000.0	5,000.0	20,000.0
Promotion and awarness of improved tech /u	lump sum	4.00	5,000	-	-	5,000.0	5,000.0	5,000.0	5,000.0	20,000.0
C. C1.1.3. Basic seed multiplication /v										
1. Irrigation : Agricultural Seed Agency (ASA)										
Irrigation infrastructure at Msimba and Kilimi Seed Farm	hectare	150.00	8,000	-	-	400,000.0	400,000.0	400,000.0	-	1,200,000.0
2. Buildings										
Construction of warehouse at Kilimi seed farm	unit	1.00	376,500	-	-	-	376,500.0	-	-	376,500.0
Construction of dry shed at Kilimi and Msimba seed Farm	unit	1.00	500	-	-	-	-	500.0	-	500.0
Construction of farm office and field trainers room at Kilimi seed farm	unit	1.00	120,500	-	-	120,500.0	-	-	-	120,500.0
Construction of Agricultural Mechanical workshop at Kilimi	unit	0.00	40,000	-	-	-	-	-	-	-
Construction of field residential for agriculture officers at Kilimi	unit	2.00	45,000	-	-	45,000.0	-	45,000.0	-	90,000.0
Renovation of field trainers/trainees residents at msimba	unit	2.00	25,000	-	-	-	-	-	50,000.0	50,000.0
3. Plant, Farm Machinery and equipment:										
Procure and instalment of Processing Plant at Msimba and Kilimi	unit	0.00	374,095	-	-	-	-	-	-	-
Procure of seed dryer at Msimba	unit	0.00	376,295	-	-	-	-	-	-	-
Procure of Tractors at Msimba and Kilimi	unit	2.00	145,184	-	-	-	145,184.0	-	145,184.0	290,368.0
Precision Planter at Msimba and Kilimi	unit	2.00	50,000	-	-	-	50,000.0	-	50,000.0	100,000.0
Disc Harrow at Msimba and Kilimi	unit	2.00	32,574	-	-	-	32,574.0	-	32,574.0	65,148.0
Tractor trailer at Msimba and Kilimi	unit	2.00	50,000	-	-	-	50,000.0	-	50,000.0	100,000.0
Rome plough at Msimba and Kilimi	unit	1.00	8,696	-	-	-	-	-	8,696.0	8,696.0
Maize Sheller at Msimba and Kilimi	unit	1.00	35,000	-	-	-	-	-	35,000.0	35,000.0
sunflower seed combine harvester at Msimba and Kilimi	unit	0.00	120,000	-	-	-	-	-	-	-
Ridger at Msimba and Kilimi	unit	1.00	15,500	-	-	-	-	-	15,500.0	15,500.0
4. Accessories of Agricultural Mechanical Workshop										
Procurement of compressor machine	unit	1.00	7,500	-	-	-	-	-	7,500.0	7,500.0

	Procurement of leath machine	unit	1.00	31,945	-	-	-	-	-	31,945.0	31,945.0
	Procurement of drilling machine	unit	1.00	1,150	-	-	-	-	-	1,150.0	1,150.0
	Procurement of Generators	unit	1.00	21,739	-	-	-	-	-	21,739.0	21,739.0
	Procurement of toolboxes	unit	1.00	800	-	-	-	-	-	800.0	800.0
	Procurement of cutting machine	unit	1.00	6,826	-	-	-	-	-	6,826.0	6,826.0
	Procurement of welding machine	unit	1.00	2,080	-	-	-	-	-	2,080.0	2,080.0
	Procurement of grinding machine	unit	1.00	1,690	-	-	-	-	-	1,690.0	1,690.0
	Procurement of bending machine	unit	1.00	15,000	-	-	-	-	-	15,000.0	15,000.0
	Rehabilitation of the mechanical office and stores	unit	1.00	18,800	-	-	-	-	-	18,800.0	18,800.0
	Gas Cylinders	unit	1.00	1,043	-	-	-	-	-	1,043.0	1,043.0
	Purchase of fuel pump	unit	1.00	682	-	-	-	-	-	682.0	682.0
	Fuel pump shade	unit	1.00	1,200	-	-	-	-	-	1,200.0	1,200.0
	Maintenance of fuel storage tanks	unit	1.00	4,565	-	-	-	-	-	4,565.0	4,565.0
	Rehabilitation of fuel power house	unit	1.00	2,500	-	-	-	-	-	2,500.0	2,500.0
	5. Motor Vehicles		0.00		-	-	-	-	-	-	-
	Field Supervision Motor cycles	unit	1.00	1,694	-	-	847.0	847.0	-	-	1,694.0
	Seed Distribution Vehicles 7-10 tons	unit	1.00	122,049	-	-	-	-	-	122,049.0	122,049.0
	Field Supervision car	unit	1.00	57,500	-	-	-	-	-	57,500.0	57,500.0
	6. Capacity strengthening		0.00		-	-	-	-	-	-	-
	Capacity strengthen in business development model	number	2.00	100,000	-	-	-	100,000.0	-	100,000.0	200,000.0
	Capacity strengthened in seed production technologies	number	1.00	40,000	-	-	-	-	-	40,000.0	40,000.0
	Supervision, Monitoring and Evaluation	number	2.00	33,000	-	-	-	-	-	33,000.0	66,000.0
	D. C1.1.4. Private-sector led bulking-up certified seed		0.00		-	-	-	-	-	-	-
	1. A. ASA support for certified seed production (3 VC)		0.00		-	-	-	-	-	-	-
	TA to consolidate seed systems and ASA business plan /y	lump sum	2.00	15,132	-	-	-	30,264.0	-	-	30,264.0
	TA to consolidate seed systems and ASA business plan /z	lump sum	4.00	5,404	-	-	-	21,616.0	-	-	21,616.0
	2. Private/Cooperative: Operational capital support for certified seed		0.00		-	-	-	-	-	-	-
	Technical Assistance to build sustainable seed systems /bb	pers month	2.00	15,132	-	-	-	30,264.0	-	-	30,264.0
	Technical Assistance to build sustainable seed systems /cc	pers month	6.00	5,404	-	-	-	21,616.0	5,404.0	5,404.0	32,424.0
	Technical manual for seed production (compilation and diffusion)	lump sum	1.00	9,511	-	-	-	9,511.0	-	-	9,511.0
	Training of seed producers/cooperatives /dd	training	20.00	4,323	-	-	21,615.0	21,615.0	21,615.0	21,615.0	86,460.0
	Support seed producer association	lump sum	1.25	5,404	-	-	2,702.0	-	-	4,053.0	6,755.0
	E. C1.1.5. Seed certification		0.00		-	-	-	-	-	-	-
	1. Laboratory infrastructure (Support TOSCI to construct Multi Purpose Laboratory)		0.00		-	-	-	-	-	-	-
	Civil engineering works (Securing BoQ)	lump sum	1.00	20,000	-	-	-	-	-	20,000.0	20,000.0
	Feasibility studies and consultancy	lump sum	1.00	19,636	-	-	-	19,636.0	-	-	19,636.0
	Construction work	lump sum	0.50	500,000	-	-	-	-	-	250,000.0	250,000.0
	2. Modern laboratory equipment at the National Seed Testing Laboratory		0.00	137,000	-	-	-	-	-	-	-
	3. Support TOSCI to Build and Equip Seed Testing Laboratory in Ibadan		0.00		-	-	-	-	-	-	-
	Civil engineering works (Securing BoQ)	lump sum	0.00	20,000	-	-	-	-	-	-	-
	Feasibility studies and consultancy	lump sum	1.00	18,733	-	-	-	-	-	18,733.0	18,733.0
	Construction work	lump sum	0.00	300,000	-	-	-	-	-	-	-
	Purchase of equipment	lump sum	1.00	80,000	-	-	-	-	-	80,000.0	80,000.0
	4. Support TOSCI to Equip and Rehabilitate Seed Testing Laboratory in Ibadan		0.00		-	-	-	-	-	-	-
	Consultancy	lump sum	1.00	10,000	-	-	-	-	-	10,000.0	10,000.0
	Rehabilitation work	lump sum	0.00	150,000	-	-	-	-	-	-	-
	Purchase of equipment	lump sum	1.00	80,000	-	-	-	-	-	-	-
	5. Rehabilitate cold storage at Arusha Seed Laboratory		0.00		-	-	-	-	-	-	-
	Rehabilitation work	lump sum	1.00	160,000	-	-	-	-	-	160,000.0	160,000.0
	6. Training on business administration /jj		5.00	5,000	-	-	-	-	-	25,000.0	25,000.0
	7. Develop protocols for crops that do not yet have seed registration		0.00		-	-	-	-	-	-	-
	Stakeholders' meeting to develop seed certification protocols for five tree crops	meeting	1.00	11,344	-	-	-	-	-	11,344.0	11,344.0
	Stakeholders meeting to Develop DUS protocols	meeting	1.00	13,752	-	-	-	-	-	13,752.0	13,752.0
	8. Expansion participation in OECD Seed Schemes by joining with existing schemes		0.00		-	-	-	-	-	-	-
	Preparation of control plots for tomato, onion, bean and sunflower to be evaluated by OECD experts	lump sum	1.00	25,000	-	-	25,000.0	-	-	-	25,000.0
	9. Expansion of ISTA Accreditation Scope by adding vegetable (tomato, onion, bean and sunflower)		0.00		-	-	-	-	-	-	-
	Training of Official Seed Samplers and Analysts	unit	15.00	500	-	-	-	-	7,500.0	-	7,500.0
	Training of Authorized Seed Inspectors	lump sum	1.00	39,548	-	-	-	-	-	39,548.0	39,548.0
	14. Contribute to a joint effort (PPP) to roll-out e-tags for digitized seed		0.00		-	-	-	-	-	-	-
	Purchase of Label Printer	unit	0.00	60,000	-	-	-	-	-	-	-
	Purchase of other Printing Facilities	lump sum	1.00	28,749	-	-	14,374.5	-	-	14,374.5	28,749.0
	Conducting Pilot Study /mm	lump sum	1.00	40,000	-	-	-	20,000.0	-	20,000.0	40,000.0
	15. Awareness Creation to the public and seed sector stakeholders		0.00		-	-	-	-	-	-	-
	TV Programmes	number	11.00	6,500	-	-	19,500.0	19,500.0	13,000.0	19,500.0	71,500.0
	Radio Programmes	number	10.00	2,500	-	-	7,500.0	5,000.0	5,000.0	7,500.0	25,000.0
	Newspapers	number	11.00	700	-	-	2,100.0	2,100.0	1,400.0	2,100.0	7,700.0
	16. Improve Field Mobility		0.00		-	-	-	-	-	-	-
	Pick-up Double Cabin	number	3.00	46,900	-	-	-	140,700.0	-	-	140,700.0
	17. Post-Harvest Seed Inspection to ensure that only certified seed is marketed		10.00	7,000	-	-	14,000.0	21,000.0	14,000.0	21,000.0	70,000.0
	F. C1.1.6. Institutional reforms in public institutions toward business development		2.00	50,000	-	-	50,000.0	-	50,000.0	-	100,000.0
	G. C1.1.7. Mainstreaming gender empowerment and youth entrepreneurship in the seed sector		1.00	75,000	-	-	-	37,500.0	-	37,500.0	75,000.0
	A. C1.2.1. Development of sustainable artisanal marine fisheries projects		0.00		-	-	-	-	-	-	-
	1. Artisanal fishing		0.00		-	-	-	-	-	-	-
	Identification of sites to install Fish Aggregating Devices by TAFIRI /a	Study	1.00	80,000	-	-	80,000.0	-	-	-	80,000.0
	Purchase of Fish Aggregating Devices by TAFIRI	unit	30.00	8,000	-	-	-	80,000.0	80,000.0	80,000.0	240,000.0
	Installation of FADs (vessel hire, cost of staff)	unit	2.00	30,000	-	-	-	30,000.0	-	30,000.0	60,000.0
	2. Strengthening Fisher cooperative societies		0.00		-	-	-	-	-	-	-
	Fishing equipment/Gear exchange programme through a micro loan to 4 Fisher Cooperative Societies /b	unit	2.00	100,000	-	-	-	-	200,000.0	-	200,000.0
	Capacity building of ToT /c	unit	6.00	56,204	-	-	112,408.0	112,408.0	-	112,408.0	337,224.0
	TA to develop Training manual on Fisher cooperatives	unit	1.00	22,970	-	-	-	22,970.0	-	-	22,970.0
	3. Vehicles		0.00		-	-	-	-	-	-	-
	Double Cabin vehicle /e	unit	4.00	41,072	-	-	-	164,288.0	-	-	164,288.0
	Station Wagon vehicle	unit	4.00	57,500	-	-	-	230,000.0	-	-	230,000.0
	Fuel @ 500lt/month /f	litre	44,000.00	1	-	-	12,960.0	12,960.0	10,800.0	10,800.0	47,520.0
	Vehicle Maintenance /g	unit	30.00	519	-	-	4,671.0	4,671.0	3,114.0	3,114.0	15,570.0
	4. Equipment fisher cooperatives market linkages		0.00		-	-	-	-	-	-	-
	Laptops for Fisheries Ministry and District Fisheries Officers	unit	7.00	1,500	-	-	10,500.0	-	-	-	10,500.0
	Desktop Computer /h	unit	8.00	1,081	-	-	8,648.0	-	-	-	8,648.0
	Scanner /i	unit	2.00	692	-	-	1,384.0	-	-	-	1,384.0
	Photocopy machine /j	unit	2.00	4,323	-	-	8,646.0	-	-	-	8,646.0
	LCD Projector /k	unit	6.00	649	-	-	3,894.0	-	-	-	3,894.0
	Digital Camera /l	unit	5.00	3,459	-	-	17,295.0	-	-	-	17,295.0
	Furniture for the ministry	set	1.00	21,617	-	-	21,617.0	-	-	-	21,617.0
	Stationaries ministry and district fisheries office	unit	2.00	4,323	-	-	8,646.0	-	-	-	8,646.0
	5. ESIA studies		0.00		-	-	-	-	-	-	-
	Support to artisanal fishing: provision of fishing gear to artisanal fishers (90 FADs)	Study	1.00	10,000	-	-	10,000.0	-	-	-	10,000.0
	Additional Borehole at Boma Road for Kingolwira ADC	Study	1.00	10,000	-	-	10,000.0	-	-	-	10,000.0
	6. Mainstreaming gender empowerment and youth entrepreneurship in the seed sector		1.00	75,000	-	-	-	37,500.0	-	37,500.0	75,000.0
	B. C1.2.2. Development of PPP for commercial deep sea fishing		0.00		-	-	-	-	-	-	-
	1. Fishing Vessels		0.00		-	-	-	-	-	-	-
	Purchase of 4 full equipped Marine Fishing Vessels /m	vessel	2.00	534,000	-	-	-	1,068,000.0	-	-	1,068,000.0
	Purchase of 4 full equipped Marine Fishing Vessels /n	vessel	2.00	1,500,000	-	-	-	3,000,000.0	-	-	3,000,000.0
	Business Model for both ZAFICO and TAFICO vessels	unit	2.00	12,970	-	-	-	25,940.0	-	-	25,940.0
	Development of 4P model and feasibility for fishing vessel operations	unit	2.00	12,970	-	-	-	12,970.0	-	-	25,940.0
	Capacity building on fishing vessel operators for TAFICO	unit	10.00	19,455	-	-	-	-	-	194,550.0	194,550.0
	2. Vessel operation costs for TAFICO		0.00		-	-	-	-	-	-	-
	Fuel for vessels /o	unit	10.00	36,316	-	-	-	-	181,580.0	181,580.0	363,160.0
	Maintenance per trip /p	unit	10.00	3,459	-	-	-	-	17,295.0	17,295.0	34,590.0

	Food /q	unit	10.00	1,297	-	-	-	-	6,485.0	6,485.0	12,970.0
	Bait /r	unit	10.00	1,729	-	-	-	-	8,645.0	8,645.0	17,290.0
	Salaries for 46 staff for at least 6 months /s	pers month	6.00	6,101	-	-	-	-	18,303.0	18,303.0	36,606.0
	Insurance /t	unit	4.00	12,865	-	-	-	-	51,460.0	-	51,460.0
	Land based Communication equipment with vessel	unit	1.00	5,188	-	-	-	5,188.0	-	-	5,188.0
	Plotter and VMS monitor	unit	1.00	32,425	-	-	-	32,425.0	-	-	32,425.0
	3. Vessel operation costs for ZAFICO		0.00		-	-	-	-	-	-	-
	Fuel /u	unit	10.00	6,083	-	-	-	-	30,415.0	30,415.0	60,830.0
	Maintanance /v	unit	10.00	1,513	-	-	-	-	7,565.0	7,565.0	15,130.0
	Food /w	unit	10.00	649	-	-	-	-	3,245.0	3,245.0	6,490.0
	Bait /x	unit	10.00	1,297	-	-	-	-	6,485.0	6,485.0	12,970.0
	Salaries for 46 staff for at least six months /y	unit	6.00	6,101	-	-	-	-	18,303.0	18,303.0	36,606.0
	Refresher training for Captains and seamen on Deep sea fishing)	unit	4.00	7,782	-	-	7,782.0	-	-	23,346.0	31,128.0
	Insurance @TZS 11565000	unit	4.00	5,000	-	-	-	-	20,000.0	-	20,000.0
	4. Implementation of Tuna Fisheries Management Plan /z	unit	0.00		-	-	-	-	-	-	-
	5. ESIA Studies		0.00		-	-	-	-	-	-	-
	Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and storage >50T /day	Study	1.00	40,000	-	-	-	40,000.0	-	-	40,000.0
	Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and storage <50T /day	Study	1.00	40,000	-	-	-	40,000.0	-	-	40,000.0
	C. C1.2.3. Increasing aquaculture productivity and output		0.00		-	-	-	-	-	-	-
	1. Rehabilitation of infrastructure in the ADCs		0.00		-	-	-	-	-	-	-
	Rehabilitation of 333 ponds each measuring 16x30m in the three ADCs	square metres	81,340.00	40	-	-	-	1,997,600.0	-	1,256,000.0	3,253,600.0
	Digging of borehole	number	2.00	4,323	-	-	4,323.0	4,323.0	-	-	8,646.0
	Rehabilitation of Water Reservoir Dam and its supply system at Kingolwira /aa	square metres	2,800.00	38	-	-	-	106,400.0	-	-	106,400.0
	Installation of aquaculture recirculating system at Kingolwira, Mwamapuli and Rubambagwe /bb	lump sum	2.00	21,617	-	-	-	21,617.0	-	21,617.0	43,234.0
	Water quality equipment at Kingolwira, Mwamapuli and Rubambagwe /cc	lump sum	2.00	4,987	-	-	-	4,987.0	-	4,987.0	9,974.0
	Construction of water supply system with pump capacity to discharge 50 lts /s at Kingolwira, Mwamapuli and Rubambagwe	unit	2.00	21,617	-	-	-	21,617.0	-	21,617.0	43,234.0
	Construction of waste water treatment system at Mwamapuli and Kingolwira	unit	1.00	26,122	-	-	-	26,122.0	-	-	26,122.0
	Fish feed mill 0.06-0.08 tonnes/h one each for Kingolwira, Mwamapuli and Rubambagwe	number	2.00	12,970	-	-	-	12,970.0	-	12,970.0	25,940.0
	Purchase of regenerative air blowers	unit	6.00	3,243	-	-	-	9,729.0	-	9,729.0	19,458.0
	2. Breeding and production of broodstock		0.00		-	-	-	-	-	-	-
	Design of Hatchery, outreach rooms, hostels, offices and staff residential houses, guard house, storage rooms, feed mill	lump sum	1.00	21,617	-	-	-	21,617.0	-	-	21,617.0
	Rehabilitation of hatchery /dd	square metres	4,412.00	600	-	-	-	2,527,200.0	60,000.0	60,000.0	2,647,200.0
	Construction of outreach/training rooms /ee	square metres	600.00	600	-	-	-	180,000.0	180,000.0	-	360,000.0
	Rehabilitation of farmers training hostels at Kingolwira and Mwamapuli /ff	square metres	525.00	600	-	-	-	-	-	315,000.0	315,000.0
	Rehabilitation of Cafeteria for trainees /gg	square metres	750.00	650	-	-	-	260,000.0	-	227,500.0	487,500.0
	Rehabilitation of offices /hh	square metres	1,544.00	650	-	-	-	842,400.0	-	161,200.0	1,003,600.0
	Rehabilitation of Power house	number	0.00	1,297	-	-	-	-	-	-	-
	3. Laboratory equipment for ADCs		0.00		-	-	-	-	-	-	-
	Refrigerator /jj	number	2.00	1,000	-	-	1,000.0	-	1,000.0	-	2,000.0
	Microscope /kk	number	2.00	6,400	-	-	6,400.0	-	6,400.0	-	12,800.0
	Other accessories /ll	lump sum	2.00	1,500	-	-	1,500.0	-	1,500.0	-	3,000.0
	Handheld NIRS for rapid feed quality analysis capable of analysing Crude protein, energy, crude fibres	number	2.00	46,000	-	-	46,000.0	-	46,000.0	-	92,000.0
	4. Support to fish farmers cooperative societies to access inputs /mm	unit	4.00	100,000	-	-	100,000.0	100,000.0	100,000.0	100,000.0	400,000.0
	5. Support to aquaculture extension		0.00		-	-	-	-	-	-	-
	Establishing of Fisheries clusters around the ADCs /nn	number	2.00	4,323	-	-	4,323.0	-	4,323.0	-	8,646.0
	Desktop computers	number	9.00	688	-	-	3,440.0	-	2,752.0	-	6,192.0
	Laptops /oo	number	13.00	1,080	-	-	8,640.0	-	5,400.0	-	14,040.0
	Printer	number	2.00	1,400	-	-	1,400.0	-	1,400.0	-	2,800.0
	Photocopy machine	number	1.00	6,000	-	-	6,000.0	-	-	-	6,000.0
	LCD Projector	number	2.00	1,700	-	-	1,700.0	-	1,700.0	-	3,400.0
	Digital Camera	number	2.00	585	-	-	585.0	-	585.0	-	1,170.0
	6. Outreach materials		0.00		-	-	-	-	-	-	-
	Booklets	number	15,000.00	4	-	-	20,000.0	20,000.0	-	20,000.0	60,000.0
	Leaflets	number	30,000.00	2	-	-	20,000.0	20,000.0	-	20,000.0	60,000.0
	Media programs, Radio and TV (production and the show)	number	2.00	4,323	-	-	-	-	4,323.0	4,323.0	8,646.0
	Workshops /pp	number	4.00	7,090	-	-	-	14,180.0	-	14,180.0	28,360.0
	Cabinet for ADC	number	3.00	1,800	-	-	-	-	5,400.0	5,400.0	5,400.0
	Outreach room chairs	number	40.00	130	-	-	-	-	5,200.0	5,200.0	5,200.0
	Outreach room tables	number	20.00	173	-	-	-	-	3,460.0	3,460.0	3,460.0
	White board 5x2 m	number	2.00	303	-	-	-	-	606.0	606.0	606.0
	Dining tables for cafeteria	number	20.00	173	-	-	-	-	3,460.0	3,460.0	3,460.0
	Cafeteria chairs	number	40.00	108	-	-	-	-	4,320.0	4,320.0	4,320.0
	Assorted kitchen utilities for ADCs	number	1.00	1,729	-	-	-	-	1,729.0	1,729.0	1,729.0
	7. Vehicles		0.00		-	-	-	-	-	-	-
	4x4 for ADCs	number	1.00	57,500	-	-	-	57,500.0	-	-	57,500.0
	Double cabin for outreach for ADCs	number	2.00	59,322	-	-	-	59,322.0	-	59,322.0	118,644.0
	4Wd 140 HP Tractor+loader+trailer for ADCs	number	1.00	81,327	-	-	-	81,327.0	-	-	81,327.0
	Dam scooper for pond digging for ADCs	number	1.00	16,949	-	-	-	16,949.0	-	-	16,949.0
	Compactor 3 HP Petrol engine for ADCs	number	1.00	3,261	-	-	-	3,261.0	-	-	3,261.0
	Motorcycles for ADCs	number	5.00	1,694	-	-	-	8,470.0	-	-	8,470.0
	Quad bike for ADCs	number	1.00	2,966	-	-	-	2,966.0	-	-	2,966.0
	Fuel for outreach: vehicles, motor cycles in mainland 500lts per month	litre	10,000.00	1	-	-	2,700.0	2,700.0	2,700.0	2,700.0	10,800.0
	Maintanance for vehicles, motorcycles and bikes for outreach /qq	number	60.00	519	-	-	-	15,570.0	-	15,570.0	31,140.0
	8. Outreach and monitoring activities in Zanzibar		0.00		-	-	-	-	-	-	-
	Development of outreach materials for new technology of seaweed, value addition and meetings /rr	lump sum	1.00	30,000	-	-	30,000.0	-	-	-	30,000.0
	Outreach workshops on seaweed value added products in Zanzibar for women and youth four times a year /ss	number	24.00	4,167	-	-	8,334.0	91,674.0	-	-	100,008.0
	Quarterly monitoring of activities by Fisheries authority in Zanzibar /tt	number	5.00	1,000	-	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	5,000.0
	Equip and rehabilitate mariculture training facility for youth /uu	unit	0.50	180,000	-	-	-	-	-	90,000.0	90,000.0
	Training offered to 1000 youths and 15000 women over the period of the programme @TZS 2400000 (Fisheries Zanzibar)	unit	10.00	6	-	-	-	-	30.0	30.0	60.0
	Rehabilitation of juvenile receiving center and nurseries /vv	number	0.50	180,000	-	-	-	-	-	90,000.0	90,000.0
	Experiments on breeding and feeding of mariculture species by ZAFIRI. /ww	lump sum	1.00	90,000	-	-	-	-	-	90,000.0	90,000.0
	Rehabilitation of a Feedmill house /xx	square metres	600.00	650	-	-	-	97,500.0	97,500.0	97,500.0	390,000.0
	9. ESIA studies		0.00		-	-	-	-	-	-	-
	Aquaculture demonstration centres - at 3 ADC sites, incl borehole and one water supply system at Kingolwira	unit	3.00	15,000	-	-	15,000.0	30,000.0	-	-	45,000.0
	D. C1.2.4. 4Ps for fish processing plants /ooo		1.00	134,000	134,000.0	-	-	-	-	-	134,000.0
	1. Operations /ppp		0.00		-	-	-	-	-	-	-
	E. C1.2.4. Increasing seaweed productivity and output		0.00		-	-	-	-	-	-	-
	1. Promoting new seaweed production technology distribution of		0.00		-	-	-	-	-	-	-
	Establish tissue culture nursery /yy	lump sum	1.00	31,547	-	-	31,547.0	-	-	-	31,547.0
	Capacity building on developing seaweed tissue culture seedling production and empower community to establish nursery farms (ZARI) /zz	lump sum	30.00	216	-	-	2,160.0	2,160.0	1,080.0	1,080.0	6,480.0
	2. Support to farmers Development of pilot farms of seaweed in deep v	number	70.00	4,323	-	43,230.0	43,230.0	86,460.0	64,845.0	64,845.0	302,610.0
	3. ESIA studies		0.00		-	-	-	-	-	-	-

	Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration farm	unit	1.00	7,000	-	-	7,000.0	-	-	-	7,000.0
	Mariculture training centres x 2 (Unguja and Pemba) <360 students	unit	2.00	7,000	-	-	7,000.0	7,000.0	-	-	14,000.0
	E. C1.2.5. Institutional reforms in public institutions toward business development	workshop	2.00	50,000	-	-	-	50,000.0	-	50,000.0	100,000.0
	F. C1.2.6. Development of aquaparks approach (Aquaculture cluster growth)	day	2.00	29,661	-	-	-	29,661.0	-	29,661.0	59,322.0
	A. C2.1.1. Regional multi-stakeholder innovation platforms										
	Annual Regional seed platform meeting /a	meeting	20.00	3,243	-	-	16,215.0	16,215.0	16,215.0	16,215.0	64,860.0
	Support at regional level for coordination support (Reg Admin) /b	meeting	20.00	3,243	-	-	16,215.0	16,215.0	16,215.0	16,215.0	64,860.0
	Annual Regional and zonal seed situation consolidation /c	meeting	20.00	1,513	-	-	7,565.0	7,565.0	7,565.0	7,565.0	30,260.0
	Technical studies on needs/issues (demand-driven)	lump sum	1.00	8,647	-	-	-	8,647.0	-	-	8,647.0
	Contribution to seed information system/platform (offer/demand)	lump sum	20.00	4,323	-	-	21,615.0	21,615.0	21,615.0	21,615.0	86,460.0
	Seed/innovation fairs /d	meeting	15.00	2,162	-	-	10,810.0	-	10,810.0	10,810.0	32,430.0
	Regional seed producer and agrodealer association	meeting	5.00	4,323	-	-	-	-	21,615.0	-	21,615.0
	B. C2.1.2. Promoting supply and access to improved seeds										
	1. Enhancing partnerships with national/regional seed producers										
	1. Enhancing partnerships with national/regional seed producers (TASTA) and agricultural input importers	meeting	2.00	6,485	-	-	6,485.0	-	-	6,485.0	12,970.0
	2. Support to agro-dealers network (10 /district) - Business plan	unit	1.00	1	-	-	1.0	-	-	-	1.0
	3. Strengthen capacities theregional/district agrodealer distributors										
	a. Technical & management training for agrodealers (30 pers x 1 week)	training	10.00	7,500	-	-	37,500.0	37,500.0	-	-	75,000.0
	b. Technical and management re-training (30 pers -3 days)	training	10.00	3,000	-	-	-	-	30,000.0	-	30,000.0
	c. TA specialized support district agrodealer network development	pers month	1.00	15,132	-	15,132.0	-	-	-	-	15,132.0
	d. National TA	pers month	3.00	5,404	-	5,404.0	5,404.0	-	5,404.0	-	16,212.0
	4. Promoting further development of last link (village shops)										
	a. Technical and business support to village input shops (training and facilitation) - per district	unit	18.00	2,000	-	4,000.0	6,000.0	6,000.0	10,000.0	10,000.0	36,000.0
	b. Grouped farmer access to inputs (training and facilitation)	unit	1.00	5,000	-	-	-	5,000.0	-	-	5,000.0
	5. Information & awareness through agrodealer network										
	a. Technical material (poster, sheets etc) for agrodealer (1000 each)	lump sum	60.00	324	-	3,240.0	3,240.0	6,480.0	3,240.0	3,240.0	19,440.0
	b. Grouped farmer access to inputs (training and facilitation)	lump sum	40.00	500	2,500.0	2,500.0	2,500.0	2,500.0	5,000.0	5,000.0	20,000.0
	C. C2.1.3. Promoting awareness and demand for improved seeds										
	1. Regional Coordination										
	1.a. Regional coordination /g	lump sum	10.00	2,162	-	6,486.0	6,486.0	8,648.0	-	-	21,620.0
	1.b. Regional coordination /h	lump sum	16.00	1,297	-	3,891.0	3,891.0	5,188.0	3,891.0	3,891.0	20,752.0
	2. District Facilitation										
	2.a. District facilitation team /i	lump sum	16.00	1,081	4,324.0	4,324.0	4,324.0	4,324.0	-	-	17,296.0
	2.b. District facilitation team /j	lump sum	100.00	1,200	12,000.0	12,000.0	24,000.0	12,000.0	30,000.0	30,000.0	120,000.0
	3. Ward technical support										
	3.a. Ward technical support linked to districts (5 Wards/district) /k	unit	150.00	432	10,800.0	10,800.0	10,800.0	10,800.0	10,800.0	10,800.0	64,800.0
	3.b. Ward technical support linked to districts (5 Wards/district) /l	unit	100.00	900	9,000.0	9,000.0	18,000.0	9,000.0	22,500.0	22,500.0	90,000.0
	3.c. Ward extension mobility and communication /m	unit	150.00	605	15,125.0	15,125.0	15,125.0	15,125.0	15,125.0	15,125.0	90,750.0
	4. Small test										
	4. Small test seed packages (2 packs 0.5 kg)/new beneficiary) /n	unit	100.00	540	-	13,500.0	-	13,500.0	13,500.0	13,500.0	54,000.0
	5. On-farm demos										
	5. On farm Demonstrations /o	unit	750.00	140	-	35,000.0	-	35,000.0	17,500.0	17,500.0	105,000.0
	6. Lead Farmer Training										
	6. Farmer leader training (2x 1 day / involved ward) /p	unit	300.00	500	-	25,000.0	25,000.0	50,000.0	25,000.0	25,000.0	150,000.0
	7. Farmer leader equipment (1 leader /50 persons) -subsidy smartphone /q	unit	1,000.00	50	5,000.0	5,000.0	5,000.0	10,000.0	12,500.0	12,500.0	50,000.0
	7. ESIA studies										
	ICT platforms for dissemination of information on seed availability (improved varieties and quantities) /s	Study	1.00	7,000	-	-	7,000.0	-	-	-	7,000.0
	8. GALS Training - Agriculture										
	GALS TOT workshops Basic tools	workshop	0.50	60,520	-	15,130.0	15,130.0	-	-	-	30,260.0
	GALS TOT /champions advanced tools	workshop	0.50	60,520	-	15,130.0	15,130.0	-	-	-	30,260.0
	GALS workshops with groups /cooperatives	workshop	0.50	10,250	-	2,562.5	2,562.5	-	-	-	5,125.0
	Nutrition education and campaigns, training manuals etc	lump sum	0.50	172,000	-	43,000.0	43,000.0	-	-	-	86,000.0
	D. C2.1.4. Facilitating synergies with downstream value chain development										
	1.a. Mapping studies /u	Study	4.00	4,323	-	4,323.0	4,323.0	-	4,323.0	4,323.0	17,292.0
	1.b. Mapping studies /v	Study	1.00	10,808	-	-	-	-	-	10,808.0	10,808.0
	2. Promoting partnerships with agro-business and other VC actors	meeting	4.00	1,297	-	1,297.0	1,297.0	-	1,297.0	1,297.0	5,188.0
	3. Specialized technical services and management assistance to young farmers	pers month	3.00	8,647	-	-	8,647.0	-	8,647.0	8,647.0	25,941.0
	4. Disseminating technical and business information	lump sum	2.00	6,485	-	-	6,485.0	-	-	6,485.0	12,970.0
	A. 2.2.1. Reducing post-harvest losses /a										
	1. Ice making plants for mainland /b	number	5.00	76,271	-	76,271.0	76,271.0	-	76,271.0	152,542.0	381,355.0
	2. Ice Making Plant for Zanzibar ZAFICO	number	1.00	84,745	-	84,745.0	-	-	-	-	84,745.0
	3. Operations										
	Power 50 Kwh/t+15% /c	unit	20,700.00	0	-	900.0	900.0	960.0	690.0	690.0	4,140.0
	Water /d	metric tonne	8.00	1,200	2,400.0	2,400.0	1,200.0	1,200.0	1,200.0	1,200.0	9,600.0
	Salaries /e	number	8.00	2,940	-	5,880.0	5,880.0	5,880.0	2,940.0	2,940.0	23,520.0
	4. Two cold chain/rooms (40 tons) in Kilwa and Pangani (mainland), for Zanzibar	number	2.00	50,000	-	-	50,000.0	-	-	50,000.0	100,000.0
	5. Operations										
	Power 130 kWh/day /f	unit	280,800.00	0	9,126.0	9,126.0	9,126.0	9,126.0	9,126.0	9,126.0	54,756.0
	Salaries /g	pers year	3.00	1,340	670.0	670.0	670.0	670.0	670.0	670.0	4,020.0
	6. Construction of drying and processing facilities										
	Construction of 80 drying Dagaa drying racks (for 3000 women) total 8,000 m sq mainland Tanzania. /h	number	25.00	1,513	-	4,539.0	4,539.0	6,052.0	10,591.0	12,104.0	37,825.0
	Construction of 10 solar tent drying facilities, for 500 women, total 4000 sq m. /i	number	4.00	15,132	-	7,566.0	7,566.0	15,132.0	15,132.0	15,132.0	60,528.0
	Purchase of 4 electric driers for small pelagic with the capacity of 20 tones per day /j	number	2.00	10,808	-	5,404.0	5,404.0	10,808.0	-	-	21,616.0
	Construct of 5 solar tent drying facilities, for 500 women, total 3000 sq m. (Fish cooperative societies through MLF mainland)	unit	3.00	86,468	-	-	-	86,468.0	86,468.0	86,468.0	259,404.0
	Seaweed milling machines to process 5 tons/day	unit	2.00	40,000	-	-	-	-	40,000.0	40,000.0	80,000.0
	Construction of fish market to handle 10 tons of fish/day. The area of the market is 3,312.5 sq. m /k	unit	1.00	691,742	-	-	-	691,742.0	-	-	691,742.0
	Transport system (10 tons freezer truck) one for ZAFICO and TAFICOP	number	1.00	100,000	-	-	-	100,000.0	-	-	100,000.0
	8. ESIA studies										
	Ice plants for smallscale fishers x 8 (cap <50T/day)	Study	8.00	7,000	-	14,000.0	14,000.0	28,000.0	-	-	56,000.0
	Cold chain: Cold storage facilities (40 t/facility) x2, Refrigerated trucks x2	Study	2.00	7,000	-	-	7,000.0	7,000.0	-	-	14,000.0
	Electric driers for small pelagics	Study	4.00	7,000	-	-	14,000.0	14,000.0	-	-	28,000.0
	Construction of fish market at Kipumbwi, incl. storage and ice plant	Study	1.00	10,000	-	-	10,000.0	-	-	-	10,000.0
	Dagaa solar powered drying racks x80	Study	1.00	10,000	-	-	10,000.0	-	-	-	10,000.0
	Solar drying tents for seaweed and machines for grinding dried seaweed x10	Study	1.00	10,000	-	-	10,000.0	-	-	-	10,000.0
	B. 2.2.2. Aquaculture field and business school										
	1. Establishment of two Fishers Field School (shamba darasa) in Unguja	lump sum	2.00	100,000	-	-	-	-	100,000.0	100,000.0	200,000.0
	2. Establishment of farmers field school for fish farmers to learn from the fishers	lump sum	2.00	4,323	-	-	4,323.0	-	-	4,323.0	8,646.0
	3. GALS Training - Aquaculture										
	GALS TOT workshops Basic tools	workshop	0.50	60,520	-	-	30,260.0	-	-	-	30,260.0
	GALS TOT /champions advanced tools	workshop	0.50	60,520	-	-	30,260.0	-	-	-	30,260.0
	GALS workshops with groups /cooperatives	workshop	0.50	10,250	-	-	5,125.0	-	-	-	5,125.0
	Nutrition education and campaigns, training manuals etc	lump sum	0.50	172,000	-	-	86,000.0	-	-	-	86,000.0
	C. 2.2.3. Sea weed processing and marketing										
	Solar drier/ Green house for sea weed and Anchovy for Zanzibar	number	1.00	38,135	-	-	-	-	-	38,135.0	38,135.0
	Seaweed processing and marketing /n	lump sum	60.00	50,000	-	-	1,000,000.0	1,000,000.0	500,000.0	500,000.0	3,000,000.0
	A. C3.2.1. Coordination and Management										

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 7: Procurement Plan for first 18 months

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

Guidance Note

Overview of the template

The template provides excel worksheets for (i) Guidance, timelines and (ii) the actual Procurement Plan

Worksheets for the Procurement Plan

SUMMARY GOODS WORKS CONSULTING

- **Goods, Works, Consulting:** used to enter procurement plan data.
Note: Non-consulting services should be inserted in any of the categories for Goods, Works and Consulting depending on the nature of the services.
- **Summary:** displays a summary of amounts by category, and procurement thresholds.

Worksheets for Guidance and timelines

- **Guidance:** quick reference guidance on how to use the template.
- **Time Estimation:** estimated timelines by procurement methods, based on experience and guidance in the Procurement Handbook where specified.

Procurement Summary

The Summary worksheet displays basic information, total amounts and procurement thresholds for the project.

Populating the Procurement Plan Summary

Procurement Plan SUMMARY				
Country:	Wakanda			
Project Name:	Community Livestock and Agriculture Project (CLAP)			
Project ID:	2000001234			
Version:	1.0			
Version Date:	01-Jan-20			
Prepared by:				
Approved by:				
Procurement Category	Plan		Actual	
Currenty	USD	LCU	USD	LCU
Goods	-	-	-	-
Works	-	-	-	-
Consulting Services	-	-	-	-
TOTAL	-	-	-	-

STEP 1: Enter the Country, Project Name, Project ID, Version, Version Date and Name(s) of the person(s) preparing and/or approving the Plan.

Managing versions, updates and upgrades
The Version of the Procurement Plan (and the version date) must be updated for every **Update** and **Upgrade** to the Plan. This version update shall be made to the summary sheet only. It will be automatically populated to the other sheets. The first digit (1.0) should be kept for the entire 18 or 12 months period that represents the Plan's duration and changed in the next period/year (for example, Year/Period 1: 1.0. Year/Period 2: 2.0). The second digit represents updates and upgrades.
An **Update** is the filling in the contents of the **Actual** rows in the Procurement Plan. All other changes are **Upgrades**. For Prior Review, upgrades require an IFAD NO

Do not populate this section. Total amounts are automatically calculated from the Procurement Plan Sheets for each category.

Prior Review Thresholds					
Thresholds	Goods	Works	Non-Consulting Services	Firms - Consulting Services	Individuals - Consulting Services
Prior Review	> US\$ 0.00	> US\$ 0.00	> US\$ 0.00	> US\$ 0.00	> US\$ 0.00

All Direct Contracting and Single-Source Procurements are **Prior Review** (in alignment with IFAD Procurement Handbook).

Procurement Method Thresholds			
	Shopping	NCB	ICB
Goods	< US\$ 0.00	≥ US\$ 0.00 to ≤ US\$ 0.00	> US\$ 0.00
Works	< US\$ 0.00	≥ US\$ 0.00 to ≤ US\$ 0.00	> US\$ 0.00
Non-Consulting Services	< US\$ 0.00	≥ US\$ 0.00 to ≤ US\$ 0.00	> US\$ 0.00
	ICs/CQS	LCS	QCBS
Individuals	< US\$ 0.00	≥ US\$ 0.00 to ≤ US\$ 0.00	> US\$ 0.00
Firms	< US\$ 0.00	≥ US\$ 0.00 to ≤ US\$ 0.00	> US\$ 0.00

ncy: USD

USD
SDR
EUR

Types: Amount (USD)

Amount (USD)
Amount (SDR)
Amount (EUR)

Note: If currency is neither USD nor LOCAL CURRENCY, modify the USD labels in the template using the dropdowns where provided or typing directly if required option is not available.

STEP 2: Enter the Prior Review Thresholds and Procurement Method Thresholds for the project. These are defined in the Letter to the Borrower.

Goods, Works and Consulting Worksheets

Planning and Actual data on each procurement item is entered in these worksheets, by category. All worksheets are generally structured the same way.

Overall Structure of the Worksheets

The diagram illustrates the layout of the worksheets. It shows a grid with columns for 'Plan' and 'Actual' data. A callout box labeled 'Procurement Plan - Goods' points to a specific row. Another callout labeled 'Summary table' points to a row of summary data. A third callout labeled 'Total Amount' points to a small table with columns for 'USD' and 'LCU' and rows for 'Plan' and 'Actual'.

For each worksheet, 3 rows (Plan, Actual and a blank row) are provided at the to facilitate copying/pasting of new items, or retrieval of plan date formulas. **Do not edit/delete these rows.**

The basic information is automatically populated from the Summary table.

Plan and Actual total amounts are calculated automatically.

A Procurement item should be expressed in a **Planned Row** and an **Actual Row**, with a blank row at the bottom.

Adding a New Procurement Item

STEP 1: To add a new procurement where rows are still available, fill out all the items in the Plan until you get to the date. This is the "Basic Data" section, and reference to the corresponding AWPB, Procurement No., Description, Funding, Number of Lots, Project Area (where applicable), Procurement/selection methods and the Planned Amount in USD or Local Currency. *The date cells for Goods and Works start with the cell directly under Submission of PreQual docs, and for the Consulting Services worksheet, the cell directly under Submission of REOI.*

AWPB/Contract Ref	NO	Description*	Funding	Project Area	Plan vs. Actual	Shortlist (Yes/No)	Prior or Post Review	Procurement Method	Amount (USD)	Amount (LCU)
RBB.C5.01	1	Climate Vulnerability Assessment	IFAD	All targeted districts	Plan Actual	Yes	Prior Review	CQS	64 000.00	
RBB.C5.0									30 000.00	

You can only enter amounts in one currency for each procurement item.

Submission of REOI	No Objection Date	REOI Launch Date
Enter Date		

STEP 2: Based on the selected criteria, you will be prompted to Enter the first date of the process in the relevant field.

Plan vs. Actual	EOI Shortlist Procedure						
	Submission of REOI	No Objection Date	REOI Launch Date	EOI Submission Deadline	Submission of Shortlist Report	No Objection Date	Submission of RFP/RCQ
Plan	1-Feb-20	8-Feb-20	10-Feb-20	2-Mar-20	16-Mar-20	23-Mar-20	27-Mar-20
Actual							

Planned dates are calculated using formulas, from **start to finish**. **Note:** If you enter a Procurement Method that is not listed in the dropdown, the formulas will not work, however you may proceed with manual entry.

Modifying Planned Dates

Planned dates provided by the formulas are not prescriptive and may be modified as needed.

- **Planning from Finish to Start:** As long as no manual entries have been made to the planned dates and the formulas are still in place, you can **adjust the timeline based on an END DATE** as follows:

No-objection Date	Date Contract Award	Date Contract Signature
22-Aug-20	24-Aug-20	31-Aug-20

STEP 1: Follow steps 1 and 2 in the previous section, entering a start date. Once you have planned dates in the cells based on the formulas, select the cell that contains the last/finish date.



STEP 2: Click **Data** and select the dropdown menu on the button called **What-If Analysis**. Select the **Goal Seek** feature from the dropdown.

STEP 3: Fill in the popup box as indicated below:

- **Set cell:** this is already selected from step 1. If not, click the field and select the cell containing the last/finish date.
- **To value:** enter the target finish date for the procurement.
- **By changing cell:** click the field and select the cell containing the first/start date.
- Click OK, and then click OK again on the following popup.

The timeline will be adjusted, with a new calculated start date.

- **Modifying the number of days in the timeline:** This can be done in two ways:
 - **Using the Time Estimation worksheet:** Modifying the approximate (Approx) number of days for specific processes (by procurement methods) within the Time Estimation worksheet. **Note:** this timeline applies to all items in the procurement worksheet using that method.
 - **Directly modifying planned dates** for a procurement item within the procurement plan worksheet. **Note:** modifying dates in the worksheets should be done from earliest to latest date, to ensure remaining dates are adjusted accordingly by the formulas.

Using the Time Estimation Sheet to modify timelines by procurement method

This spreadsheet provides estimated timelines by procurement methods, for each step of the procurement process based on experience and guidance in the Procurement Handbook where specified.

Procurement Method	Bid Invitation Date			Bid Closing-Opening			Min
	Min	Max	Approx	Min	Max	Approx	
Single Envelope							
RFQ/Shopping (NS/IS)	1	3	1	5	21	14	0
NCB (no PreQual)	1	3	2	30	45	45	0
ICB (no PreQual)	1	3	2	45	70	45	0
LIB (no PreQual)	1	3	2	45	70	45	0
NCB (with PreQual)	1	3	2	30	45	45	0
ICB (with PreQual)	1	3	2	45	70	30	0
LIB (with PreQual)	1	3	2	45	70	45	0
Direct Contracting	1	3	1	7	30	14	0
Two Envelope							
NCB (no PreQual)	1	3	2	30	45	45	3
ICB (no PreQual)	1	3	2	45	70	45	3

ACTION: Identify the Approx cell value for the step in the process, and procurement method for which you wish to modify the timeline, and change the number of days.

Note: Cells will be highlighted for your attention if the value entered is below the Minimum number of days (as shown in this example).

Zero indicates steps that are not applicable to the method, and are indicated as N/A in the Formulas.

Directly modifying planned dates

ACTION: Simply enter new dates manually.
Note: Start editing from earliest to latest to ensure that the following dates are adjusted by the formulas.

Note: If you need to restore one or more planned date formulas, you can do so by copying and pasting the corresponding cell (in the same column) from the upper most row in the worksheet.

Plan	Actual			
EOI Shortlist Procedure				
Plan vs. Actual	Submission of RFI	No Objection Date	REOI Launch Date	EOI Submission Deadline
Plan	1-Feb-20	8-Feb-20	10-Feb-20	2-Mar-20

Entering Actual Dates and Information

AWPB/Component Ref	No	Description*	Funding	Project Area	Plan vs. Actual	Shortlist (Yes/No)	Prior or Post Review	Procurement Method	Amount (USD)	Amount (LCU)	Plan vs. Actual
RRB-CS-01	1	Climate Vulnerability Assessment	IFAD	All targeted districts	Plan	Yes	Prior Review	QCBS	64 000.00		Plan
				All targeted districts	Actual	Yes	Prior Review	QCBS	-	-	Actual

Submission of REOI	No Objection Date	REOI Launch Date	EOI Submission Deadline	Submission of Shortlist Report	No Objection Date
1-Feb-20	8-Feb-20	10-Feb-20	2-Mar-20	16-Mar-20	23-Mar-20
3-Feb-20	9-Feb-20	11-Feb-20	3-Mar-20	16-Mar-20	23-Mar-20

ACTION: As the procurement processes are implemented, update the Actual Rows for the Basic Data, Actual Dates and finally, the Actual Amount at the end of the worksheet.

Note: Enter the Actual Amount at the end of the worksheet.

Date Contract Award	Date Contract Signature	Amount (USD)
24-Aug-20	31-Aug-20	64 000.00
30-Aug-20	10-Sep-20	60 000.00

This cell contains a formula. Actual amounts can be entered at the end of the spreadsheet.

Entering Actual Data and Information for Multiple LOTS

In cases of multiple LOTS, insert a new Actual Row for each LOT. The Actual Dates will likely be the same until the Submission of Technical Evaluation Report.

AWPB/Component Ref	No	Description	Funding	Lot No./Description	Project Area
RRB-CS-01	1	Computer Hardware	IFAD	2 Lots	N/A

STEP 1: Select an Actual Row, Right Click and Insert a new row. Insert as many rows as needed.

STEP 2: In the Lot No./Description section of the Planned Row, indicate the number of LOTS

Lot No./Description	Project Area	Plan vs. Actual	Pre-or Post Qualification	Prior or Post Review	Procurement Method	Envelopes	Amount (USD)
2 Lots	N/A	Plan	Post-Qual	Post Review	N5	1	25 000.00
1. Desktops	N/A		Post-Qual	Post Review	N5	1	15 000.00
2. Monitors	N/A	Actual	Post-Qual	Post Review	N5	1	10 000.00

Total Amount		
USD	LCU	
25 000.00	0.00	Plan
25 000.00	0.00	Actual

Amount (USD)	Amount (LCU)	Plan vs. Actual
25 000.00		Plan
15 000.00		Actual
10 000.00	-	Actual

STEP 4: Fill in the information in the Actual Row as shown above.

IMPORTANT: Remember to type "Actual" in the corresponding label cells to ensure that all actual amounts are included in the Total Actual Amount.

Procurement Plan SUMMARY				
Country:	Tanzania			
Project Name:	AFDP			
Project ID:	XXXX			
Version	1.0			
Version Date	18-Sep-20			
Prepared by:	Kagaba Frederic			
Approved by:				
Procurement Category	Plan		Actual	
	USD	LCU	USD	LCU
Goods	7,957,743.00	-		
Works	6,498,380.00	-		
Consulting Services	177,715.00	-		
Non-Consulting Services	-	-		
TOTAL	14,633,838.00	-	-	-

Prior Review Thresholds				
Thresholds	Goods	Works	Firms - Consulting Services	Individuals - Consulting Services
Prior Review	≥ US\$ 70000.00	≥ US\$ 150000.00	≥ US\$ 60000.00	≥ US\$ 40000.00

All Direct Contracting and Single-Source Procurements are **Prior Review** (in alignment with IFAD Procurement Handbook).
The exchange rate at time of submission will be used for reviews.

Procurement Method Thresholds			
	Shopping	NCB	ICB
Goods	< US\$ 70000.00	≥ US\$ 70000.00 to ≤ US\$ 200000.00	> US\$ 200000.00
Works	< US\$ 190000.00	≥ US\$ 190000.00 to ≤ US\$ 800000.00	> US\$ 800000.00
Non-Consulting Services	< US\$ 70000.00	≥ US\$ 70000.00 to ≤ US\$ 100000.00	> US\$ 100000.00
	CQS	QBS/LCS/FBS	QCBS
Firms	< US\$ 70000.00	≥ US\$ 70000.00 to ≤ US\$ 100000.00	> US\$ 100000.00

Total Amount	
USD	LCU
7,957,743.00	0.00 Plan
0.00	0.00 Actual

Version	#REF1	30-Jun-20	Basic Data										Pre-qualification						Bidding Process				Bid Evaluation				Contract Award & Signature							
			AWPB/Component Ref	Description	Funding	Lot No/Description	Project Area	Plan vs. Actual	Pre-or Post Qualification	Prior or Post Review	Procurement Method	Envelope s	Amount (USD)	Amount (LCU) X 1000	Plan vs. Actual	Submission of PreQual Docs	No Objection Date	PreQual Invitation Date	PreQual Closing Date	Submission of PreQual Report	No Objection Date	Submission of BD	No-objection Date	Bid Invitation Date	Bid Closing-Opening	Submission Tech Eval Rpt	No-objection Date	Submission Combined Eval Rpt*	No-objection Date	Plan vs. Actual	Issue of NOITA&Standstii	Date Contract Award	Date Contract Signature	Contract No.
A.C1.1.1.6, B.C1.1.2, C.C1.1.3, A.C1.2.1, C.C1.2.3.B, C1.1.2, C.C1.1.3, C.C1.2.3.C, C1.1.3				3 Lots		Plan	Post-Qual	Prior Review	ICB	1	1,119,837.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	1-Sep-21	8-Sep-21	10-Sep-21	25-Oct-21	N/A	N/A	15-Nov-21	22-Nov-21	Plan	4-Dec-21	11-Dec-21	13-Dec-21			
				Motor vehicles and motorbikes		Actual							Actual																					
				Lot 1: Vehicles for field extension activities (LGAs, ASA, TARI, TOSCI)		Actual							Actual																					
				Lot 2: Motorcycles and quad bike for field work		Actual							Actual																					
				Lot 3: Seed Distribution Vehicles 7-10 tons		Actual							Actual																					
B.C1.1.2.1, C.C1.2.3	2			Field equipment tractor 95 hp, harrow, seeder, trailer other, dam scooper, compactor	IFAD	N/A	Plan	Post-Qual	Prior Review	ICB	1	629,815.00	Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1-Mar-22	15-Mar-22	17-Mar-22	1-May-22	N/A	N/A	22-May-22	5-Jun-22	Plan	12-Jun-22	26-Jun-22	1-Jul-22		
							Actual						Actual																					
A.C1.1.1, A.C1.2.1, C.C1.2.3, B.C3.2.2	3			Laptops, printers, cameras, photocopy, projector & scanners		N/A	Plan	Post-Qual	Prior Review	NCB	1	165,969.00	Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1-Sep-21	8-Sep-21	10-Sep-21	25-Oct-21	N/A	N/A	8-Nov-21	15-Nov-21	Plan	27-Nov-21	4-Dec-21	6-Dec-21		
							Actual					-	Actual																					
C.C1.1.3.3	4			Plant, Farm Machinery and equipment:	IFAD		Plan	Post-Qual	Prior Review	ICB	1	1,207,344.00	Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10-Mar-22	24-Mar-22	26-Mar-22	10-May-22	N/A	N/A	31-May-22	14-Jun-22	Plan	21-Jun-22	5-Jul-22	10-Jul-22		
				Lot 1: Procure and instalment Msimba		Actual							Actual																					
				Lot 2: Procure of seed dryer at Msimba		Actual							Actual																					
				Lot 3: Procure of Tractors at Kilimi		Actual							Actual																					
				Lot 4: Precision Planter at Msi Kilimi		Actual							Actual																					
				Lot 5: Field Leveling grader at Msimba		Actual							Actual																					
				Lot 6: Disc Harrow at Msimba Kilimi		Actual							Actual																					
				Lot 7: Tractor trailer at Msimb Kilimi		Actual							Actual																					
				Lot 8: Rome plough at Msimb Kilimi		Actual							Actual																					
				Lot 9: Maize Sheller at Msimb Kilimi		Actual							Actual																					
				Lot 10: sunflower seed combir Msimba		Actual							Actual																					
				Lot 11: Ridger at Msimba and Kilimi		Actual							Actual																					
C.C1.1.3.4	5			Accessories of Agricultural Mechanical Workshop	IFAD	N/A	Plan	Post-Qual	Prior Review	NCB	1	117,520	Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1-Jun-22	15-Jun-22	17-Jun-22	17-Jul-22	N/A	N/A	7-Aug-22	21-Aug-22	Plan	28-Aug-22	11-Sep-22	16-Sep-22		
							Actual					-	Actual																					
C.1.2.2.1	6			Fishing Vessels	IFAD		Plan	Post-Qual	Prior Review	ICB	1	4,068,000.00	Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1-Dec-21	8-Dec-21	10-Dec-21	24-Jan-22	N/A	N/A	14-Feb-22	21-Feb-22	Plan	5-Mar-22	12-Mar-22	14-Mar-22		
				Lot 1: Purchase of 4 full equiped Marine Fishing Vessels /18 meters	Dar	Actual							Actual																					
				Lot 2: Purchase of 4 full equiped Marine Fishing Vessels /25 meters	Dar	Actual							Actual																					
C.C1.2.3.	7			Laboratory equipment for ADCs (Refrigerator, Microscope, Other accessories, Handheld NIRS)	IFAD	N/A	Plan	Post-Qual	Prior Review	ICB	1	509,800.00	Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1-Mar-22	15-Mar-22	17-Mar-22	1-May-22	N/A	N/A	22-May-22	5-Jun-22	Plan	12-Jun-22	26-Jun-22	1-Jul-22		
							Actual						Actual																					

Procurement Plan -Works

Agriculture and Fisheries Development Programme (AFDP)
Project ID:XXXXX

Approved by: XXXXXX

Prepared by: KAGABA Frederic

Total Amount

USD LCU

6,498,380.00	0.00	Plan
0.00	0.00	Actual

Version	1.0	30-Jun-20	Basic Data										Pre-qualification					Bidding Pro		
AWPB/Component Ref	Nº	Description	Funding	Lot Nº/Description	Project Area	Plan vs. Actual	Pre-or Post Qualification	Prior or Post Review	Procurement Method	Envelope s	Amount (USD)	Amount (LCU) X 1000	Plan vs. Actual	Submission of PreQual Docs	No Objection Date	PreQual Invitation Date	PreQual Closing Date	Submission of PreQual Report	No Objection Date	Submission of BD
B. C1.1.2.1	1	Upgrade Irrigation systems for prebasic seed (15ha Ilonga, 10 ha Selian)	IFAD	N/A		Plan Actual	Post-Qual	Prior Review	NCB	1	225,000.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	1-Mar-22
B. C1.1.2.2	2	Warehouses for seed storage	IFAD	N/A		Plan Actual	Post-Qual	Post Review	NS	1	70,000.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	1-Jun-22
B. C1.1.2.3	3	Laboratories infra/equipment	IFAD	2 Lots Lot 1: Basic seed labs (Ilonga, Selian) Lot 2: Green/screenhouses for breeding activities /h	Ilonga	Plan Actual	Post-Qual	Prior Review	NCB	1	210,000.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	5-Mar-22
C. C1.1.3.2	4	Irrigation infrastructure at Msimba and kilimi Seed Farm	IFAD	N/A		Plan Actual	Post-Qual	Prior Review	ICB	1	1,200,000.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	3-Jan-22
C. C1.1.3.2	5	Buildings	IFAD	6 Lots Lot 1: Construction of warehouse at Kilimi seed farm Lot 2: Construction of dry shed at Kilimi and Msimba seed Farm Lot 3: Construction of farm office and field trainers room at Kilimi seed farm Lot 4: Construction of Agricultural Mechanical workshop at Kilimi Lot 5: Construction of field residential for agriculture officers at Kilimi Lot 6: Renovation of field trainers/trainees residents at msimba		Plan Actual	Post-Qual	Prior Review	NCB	1	637,500.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	3-Dec-21
E. C1.1.5.1	6	Construction work; Laboratory infrastructure (Support TOSCI to construct Multi Purpose State of the Art	IFAD	N/A		Plan Actual	Post-Qual	Prior Review	NCB	1	250,000.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	3-Jun-22
E. C1.1.5.5	7	Rehabilitate cold storage at Arusha Seed Laboratory	IFAD	N/A		Plan Actual	Post-Qual	Prior Review	NS	1	160,000.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	3-Jun-22
C. C1.2.3.1	8	Rehabilitation of 333 ponds each measuring 16x30m in the three ADCs	IFAD	N/A		Plan Actual	Post-Qual	Prior Review	ICB	1	1,098,680.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	3-Dec-21
C. C1.2.3.2	9	Rehabilitation of hatchery/dd	IFAD	N/A		Plan Actual	Post-Qual	Prior Review	ICB	1	2,647,200.00 -		Plan Actual	N/A	N/A	N/A	N/A	N/A	N/A	3-Dec-21

Procurement Plan -Works

Agriculture and Fisheries Development Programme (AFDP)
Project ID:XXXXX

Approved by: XXXXXX

Prepared by: KAGABA Frederic

Procurement Methods

NS: National Shopping
IS: International Shopping
NCB: National Competitive Bidding
ICB: International Competitive Bidding
LIB: Limited (International) Bidding
DC: Direct Contracting

Version	1.0	30-Jun-20	cess			Bid Evaluation					Contract Award & Signature			
AWPB/Component Ref	No	Description	No-objection Date	Bid Invitation Date	Bid Closing-Opening	Submission Tech Eval Rpt	No-objection Date	Submission Combined Eval Rpt*	No-objection Date	Plan vs. Actual	Issue of NOITA&Stand still	Date Contract Award	Date Contract Signature	Contract No.
B. C1.1.2.1	1	Upgrade Irrigation systems for prebasic seed (15ha Ilonga, 10 ha Selian)	10-Mar-22	15-Mar-22	15-Apr-22	22-Apr-22	27-Apr-22	5-May-22	10-May-22	Plan	15-May-22	15-May-22	22-May-22	
B. C1.1.2.2	2	Warehouses for seed storage	N/A	2-Jun-22	16-Jun-22	N/A	N/A	16-Jun-22	N/A	Plan Actual	16-Jun-22	18-Jun-22	20-Jun-22	
B. C1.1.2.3	3	Laboratories infra/equipment	19-Mar-22	21-Mar-22	20-Apr-22	N/A	N/A	11-May-22	25-May-22	Plan Actual	1-Jun-22	15-Jun-22	20-Jun-22	
C. C1.1.3.2	4	Irrigation infrastructure at Msimba and kilimi Seed Farm	17-Jan-22	19-Jan-22	5-Mar-22	N/A	N/A	26-Mar-22	9-Apr-22	Plan Actual	16-Apr-22	30-Apr-22	5-May-22	
C. C1.1.3.2	5	Buildings	17-Dec-21	19-Dec-21	18-Jan-22	N/A	N/A	8-Feb-22	22-Feb-22	Plan Actual	1-Mar-22	15-Mar-22	20-Mar-22	
E. C1.1.5.1	6	Construction work; Laboratory infrastructure (Support TOSCI to construct Multi Purpose State of the Art	17-Jun-22	19-Jun-22	19-Jul-22	N/A	N/A	9-Aug-22	23-Aug-22	Plan Actual	30-Aug-22	13-Sep-22	18-Sep-22	
E. C1.1.5.5	7	Rehabilitate cold storage at Arusha Seed Laboratory	10-Jun-22	11-Jun-22	25-Jun-22	N/A	N/A	25-Jun-22	25-Jun-22	Plan Actual	25-Jun-22	27-Jun-22	29-Jun-22	
C. C1.2.3.1	8	Rehabilitation of 333 ponds each measuring 16x30m in the three ADCs	17-Dec-21	19-Dec-21	2-Feb-22	N/A	N/A	23-Feb-22	9-Mar-22	Plan Actual	16-Mar-22	30-Mar-22	4-Apr-22	
C. C1.2.3.2	9	Rehabilitation of hatchery /dd	17-Dec-21	19-Dec-21	2-Feb-22	N/A	N/A	23-Feb-22	9-Mar-22	Plan Actual	16-Mar-22	30-Mar-22	4-Apr-22	

Procurement Plan - Consulting

Agriculture and Fisheries Development Programme (AFDP)

Project ID: XXXXXXXX

Approved by: XXXXXX

Prepared by: KAGABA Frederic

Total Amount

USD	LCU	
177,715.00	0.00	Plan
0.00	0.00	Actual

Version	1.0	30-Jun-20	Basic Data								EOI Shortlist Procedure				
AWPB/Component Ref	No	Description*	Funding	Project Area	Plan vs. Actual	Shortlist (Yes/No)	Prior or Post Review	Procurement Method	Amount (USD)	Amount (LCU) X 1000	Plan vs. Actual	Submission of REOI	No Objection Date	REOI Launch Date	EOI Submission Deadline
D. C1.1.4.	1	Private/Cooperative: Operational capital support for certified seed production /aa	IFAD		Plan Actual	Yes	Prior Review	QBS	72,199.00		Plan Plan	Enter Date			
E. C1.1.5.1	2	Feasibility studies and consultancy	IFAD		Plan Actual	Yes	Post Review	CQS	19,636.00		Plan Actual	N/A	N/A	N/A	N/A
D. C1.1.4	3	TA to consolidate seed systems and ASA business plan /y	IFAD		Plan Actual	Yes	Post Review	CQS	51,880.00		Plan Actual	N/A	N/A	N/A	N/A

Procurement Plan - Consulting

Agriculture and Fisheries Development Programme (AFDP)

Project ID: XXXXXXXX

Approved by: XXXXXX

Prepared by: KAGABA Frederic

Version	1.0	30-Jun-20	Proposal Process					Evaluation				Contract Award & Signat			
AWPB/Component Ref	No	Description*	Submission of Shortlist Report	No Objection Date	Submission of RFP/RCQ	No-objection Date	RFP/RCQ Launch Date	Proposal submission deadline	Submission of TER	No-objection Date	Submission of CER	No-objection Date	Plan vs. Actual	Issue of NOITA&Standstill	Negotiations completed
D. C1.1.4.	1	Private/Cooperative: Operational capital support for certified seed production /aa			20-Dec-21	27-Dec-21	29-Dec-21	12-Feb-22	26-Feb-22	5-Mar-22	N/A	N/A	Plan	17-Mar-22	7-Apr-22
E. C1.1.5.1	2	Feasibility studies and consultancy	N/A	N/A	15-Nov-21	N/A	17-Nov-21	8-Dec-21	22-Dec-21	N/A	N/A	N/A	Plan Actual	3-Jan-22	17-Jan-22
D. C1.1.4	3	TA to consolidate seed systems and ASA business plan /y	N/A	N/A	12-Oct-21	N/A	14-Oct-21	4-Nov-21	18-Nov-21	N/A	N/A	N/A	Plan Actual	30-Nov-21	14-Dec-21

Procurement Plan - Consulting

Agriculture and Fisheries Development Programme (AFDP)

Project ID: XXXXXXXX

Approved by: XXXXXX

Prepared by: KAGABA Frederic

Selection Methods

QCBS: Quality and Cost-Based Selection

QBS: Quality-Based Selection

CQS: Selection by Consultants' Qualifications

LCS: Least-Cost Selection

Version	1.0	30-Jun-20	ire				
AWPB/Component Ref	No	Description*	Submission of Draft Contract and MoN	No-objection Date	Date Contract Award	Date Contract Signature	Contract No.
D. C1.1.4.	1	Private/Cooperative: Operational capital support for certified seed production /aa	11-Apr-22	18-Apr-22	20-Apr-22	27-Apr-22	
E. C1.1.5.1	2	Feasibility studies and consultancy	21-Jan-22	N/A	23-Jan-22	30-Jan-22	
D. C1.1.4	3	TA to consolidate seed systems and ASA business plan /y	18-Dec-21	N/A	20-Dec-21	27-Dec-21	

Day Ranges *These tables provide estimated timelines by procurement methods, based on experience and guidance in the Procurement Handbook where specified.*

The approximate number of days are used in the default Procurement Plan Formulas. Timelines in the Approx fields/Formulas are not prescriptive, and may be modified by the project.

Approx figures entered will be highlighted/flagged, if below the Minimum number of days. Zero indicates steps that are not applicable to the method, and are indicated as N/A in the Formulas.

Goods & Works

Procurement Method	Submission of PreQual docs			No Objection Date			PreQual Invitation Date			PreQual Closing Date			Submission of PreQual Report			No Objection Date			Submission of BD		
	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx
Single Envelope																					
RFQ/Shopping (NS/IS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	N/A-Start Date
NCB (no PreQual)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A-Start Date
ICB (no PreQual)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A-Start Date
LIB (no PreQual)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A-Start Date
NCB (with PreQual)	1	4	N/A-Start Date	7	10	7	1	3	2	14	30	30	14	21	14	7	10	7	1	14	10
ICB (with PreQual)	1	4	N/A-Start Date	7	10	7	1	3	2	14	30	30	14	21	14	7	10	7	1	14	10
LIB (with PreQual)	1	4	N/A-Start Date	5	10	7	1	3	2	14	30	30	14	21	14	7	10	7	1	14	10
Direct Contracting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	N/A-Start Date
Two Envelope																					
NCB (no PreQual)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A-Start Date
ICB (no PreQual)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A-Start Date
LIB (no PreQual)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A-Start Date
NCB (with PreQual)	1	4	N/A-Start Date	7	10	7	1	3	2	14	30	30	14	21	14	7	10	7	1	14	10
ICB (with PreQual)	1	4	N/A-Start Date	7	10	7	1	3	2	14	30	30	14	21	14	7	10	7	1	14	10
LIB (with PreQual)	1	4	N/A-Start Date	7	10	7	1	3	2	14	30	30	14	21	14	7	10	7	1	14	10

Services

Selection Method	Submission of REOI			No Objection Date			REOI Launch Date			EOI Submission Deadline			Submission of Shortlist Report			No Objection Date			Submission of RFP/RCQ		
	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx
QCBS (w/Shortlist)	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	7	4
FBS (w/Shortlist)	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	7	4
LCS (w/Shortlist)	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	7	4
QBS (w/Shortlist)	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	7	4
CQS (w/Shortlist)	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	5	4
ICS (w/Shortlist)	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	5	4
QCBS (noShortlist)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A- Start Date
FBS (noShortlist)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	N/A- Start Date
LCS (noShortlist)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A- Start Date
QBS (noShortlist)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A- Start Date
CQS (noShortlist)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	N/A- Start Date
ICS (noShortlist)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	N/A- Start Date
SSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A- Start Date

NOTE

1. Some procurement methods for low-value processes might require No Objections based on the Prior Review Thresholds. Where they do not require, No Objection number of days should be zero.
2. **RFP**: Request for Proposals: standard procurement document used for Services.
3. **RCQ**: Requests for Consultants Qualifications: Procurement document used for CQS and LCS. The RFP is used for all other procurement methods
4. Consulting services and Good/Works methods could either be used for Non-Consulting Services
5. All days are calendar days

Day Ranges

Goods & Works

Procurement Method	No-objection Date			Bid Invitation Date			Bid Closing-Opening			Submission Tech Eval Rpt			No-objection Date			Submission Combined Eval Rpt/Bid Evaluation Report			No-objection Date			Issue
	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	
Single Envelope																						
RFQ/Shopping (NS/IS)	7	10	7	1	3	1	5	21	14	0	0	0	0	0	0	1	7	7	7	10	7	0
NCB (no PreQual)	7	10	7	1	3	2	30	45	45	0	0	0	0	0	0	3	21	14	7	10	7	11
ICB (no PreQual)	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	3	21	21	7	10	7	11
LIB (no PreQual)	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	3	21	21	7	10	7	11
NCB (with PreQual)	7	10	7	1	3	2	30	45	45	0	0	0	0	0	0	7	21	14	7	10	7	11
ICB (with PreQual)	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	7	21	21	7	10	7	11
LIB (with PreQual)	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	7	21	21	7	10	7	11
Direct Contracting	7	10	7	1	3	1	7	30	14	0	0	0	0	0	0	3	21	7	7	10	7	0
Two Envelope																						
NCB (no PreQual)	7	10	7	1	3	2	30	45	45	3	21	3	7	10	7	3	7	7	7	10	7	11
ICB (no PreQual)	7	10	7	1	3	2	45	70	45	3	21	21	7	10	7	3	7	7	7	10	7	11
LIB (no PreQual)	7	10	7	1	3	2	45	70	45	3	21	21	7	10	7	3	7	7	7	10	7	11
NCB (with PreQual)	7	10	7	1	3	2	30	45	45	7	21	14	7	10	7	3	7	7	7	10	7	11
ICB (with PreQual)	7	10	7	1	2	2	45	70	45	7	21	21	7	10	7	3	7	7	7	10	7	11
LIB (with PreQual)	7	10	7	1	2	2	45	70	45	7	21	21	7	10	7	3	7	7	7	10	7	11

Services

Selection Method	No-objection Date			RFP/RCQ Launch Date			Proposal submission deadline			Submission of TER			No-objection Date			Submission of CER			No-objection Date			Issue
	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	
QCBS (w/Shortlist)	7	10	7	1	3	2	45	60	45	14	21	14	7	10	7	7	14	14	7	10	7	11
FBS (w/Shortlist)	7	10	7	1	3	2	45	60	45	14	21	14	7	10	7	7	14	14	7	10	7	11
LCS (w/Shortlist)	7	10	7	1	3	2	45	60	45	14	21	14	7	10	7	7	14	14	7	10	7	11
QBS (w/Shortlist)	7	10	7	1	3	2	21	60	45	14	21	14	7	10	7	0	0	0	0	0	0	11
CQS (w/Shortlist)	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	0	0	0	0	0	0	11
ICS (w/Shortlist)	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	0	0	0	0	0	0	11
QCBS (noShortlist)	7	10	7	1	3	2	45	60	45	14	21	14	7	10	7	7	14	14	7	10	7	11
FBS (noShortlist)	7	10	7	1	3	2	14	30	21	7	21	14	7	10	7	7	14	14	7	10	7	11
LCS (noShortlist)	7	10	7	1	3	2	21	30	25	7	21	14	7	10	7	7	14	14	7	10	7	11
QBS (noShortlist)	7	10	7	1	3	2	21	60	45	14	21	14	7	10	7	0	0	0	0	0	0	11
CQS (noShortlist)	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	0	0	0	0	0	0	11
ICS (noShortlist)	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	0	0	0	0	0	0	11
SSS	7	10	7	1	3	2	7	30	30	0	0	0	0	0	0	7	21	14	7	10	7	0

Day Ranges

Goods & Works

Procurement Method	of NOITA & Standstill		Date Contract Award			Date Contract Signature			Totals			
	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Approx Months/Days
Single Envelope												
RFQ/Shopping (NS/IS)	0	0	1	3	2	1	3	2	24	60	40	1m 9d
NCB (no PreQual)	15	12	7	14	7	1	5	2	68	130	96	3m 5d
ICB (no PreQual)	15	12	7	14	7	1	5	2	83	155	103	3m 12d
LIB (no PreQual)	15	12	7	14	7	1	5	2	83	155	103	3m 12d
NCB (with PreQual)	15	12	1	5	5	1	5	2	110	206	164	5m 12d
ICB (with PreQual)	15	12	1	5	5	1	5	2	125	231	171	5m 19d
LIB (with PreQual)	15	12	1	5	5	1	5	2	123	231	171	5m 19d
Direct Contracting	0	0	7	14	7	1	5	2	34	96	45	1m 14d
Two Envelope												
NCB (no PreQual)	15	12	7	14	7	1	5	2	78	147	99	3m 8d
ICB (no PreQual)	15	12	7	14	7	1	5	2	93	172	117	3m 26d
LIB (no PreQual)	15	12	7	14	7	1	5	2	93	172	117	3m 26d
NCB (with PreQual)	15	12	1	5	5	1	5	2	120	223	178	5m 26d
ICB (with PreQual)	15	12	1	5	5	1	5	2	135	247	185	6m 3d
LIB (with PreQual)	15	12	1	5	5	1	5	2	135	247	185	6m 3d

Services

Selection Method	of NOITA & Standstill		Negotiations completed			Submission of Draft Contract and MoN			No-objection Date			Date Contract Award			Date Contract Signature			Totals			
	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Approx Months/Days
QCBS (w/Shortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	170	283	204	6m 22d
FBS (w/Shortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	170	283	204	6m 22d
LCS (w/Shortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	170	283	204	6m 22d
QBS (w/Shortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	132	259	183	6m 1d
CQS (w/Shortlist)	15	12	7	14	14	3	14	4	7	10	7	1	3	2	1	7	7	118	220	152	4m 31d
ICS (w/Shortlist)	15	12	7	14	14	3	14	4	7	10	7	1	3	2	1	7	7	118	220	152	4m 31d
QCBS (noShortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	126	205	149	4m 28d
FBS (noShortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	88	173	125	4m 4d
LCS (noShortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	95	175	129	4m 8d
QBS (noShortlist)	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	88	181	128	4m 7d
CQS (noShortlist)	15	12	7	14	14	3	14	4	7	10	7	1	3	2	1	7	7	74	142	97	3m 6d
ICS (noShortlist)	15	12	7	14	14	3	14	4	7	10	7	1	3	2	1	7	7	74	142	97	3m 6d
SSS	0	0	7	21	21	3	14	4	7	10	7	1	3	2	1	7	7	49	136	101	3m 10d

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 8: Project Implementation Manual (PIM)

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

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East and Southern Africa Division
Programme Management Department



Investing in rural people

Tanzania Agriculture and Fisheries Development Programme (AFDP)

Annex 8: DRAFT Programme Implementation Manual (PIM)

Document Date: 31/07/2020

Project No.

Report No.

East and Southern Africa Division

Programme Management Department

Contents

I. INTRODUCTION	1
II. PROGRAMME OBJECTIVES	9
III. TARGETING, GENDER AND SOCIAL INCLUSION	14
IV. PROGRAMME DESCRIPTION: COMPONENTS AND ACTIVITIES	29
A. CROP SEED VALUE CHAINS DEVELOPMENT	29
B. FISHERIES AND AQUACULTURE DEVELOPMENT	47
C. ACCESS TO FINANCE	71
D. PROGRAMME PLANNING, MONITORING AND EVALUATION	78
VI. ORGANIZATIONAL FRAMEWORK /PROGRAMME IMPLEMENTATION	85
VI. FINANCIAL MANAGEMENT SYSTEMS AND PROCUREMENT	95
Procurement Procedures and Management	105

Acronyms and Abbreviations

AEZ	Agro Ecological Zone
ASA	Agricultural Seed Agency
ADC	Aquaculture Development Centre
AFDP	Agriculture and Fisheries Development Programme
ASDP-II	Second Agriculture Sector Development Programme
COVID-19	Coronavirus Disease 2019
CRA	Climate Risk Analysis
DAO	District Agriculture Officer
DCDO	District Community Development Officer
DEMO	District Environment Management Officer
DFO	District Fisheries Officer
DFT	District Facilitation Team
DNRO	District Natural Resources Officer
DoE	Director of Environment (Vice President's Office)
DSFA	Deep Sea Fishing Authority
EEZ	Exclusive Economic Zone
EGS	Early generation seed
EIA	Environmental [and Social] Impact Assessment
EIS	Environmental Impact Statement
EMA	Environmental Management Act of 2004
ENRM	Environment and Natural Resources Management
ESC	Environmental, Social and Climate
ESCMP	Environmental, Climate and Social Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAD	Fish aggregating device
FAO	Food and Agriculture Organisation of the United Nations
FPIC	Free Prior and Informed Consent
Ha	Hectare
HH	Household
GALS	Gender Action Learning System
GBV/SEA	Gender Based Violence / Sexual Exploitation and Abuse
GDP	Gross Domestic Product
GO	Grievance Officer
GoT	Government of Tanzania
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
ICT	Information and communications technology
IFAD	International Fund for Agricultural Development
IFC	[World Bank Group's] International Finance Corporation
IOTC	Indian Ocean Tuna Commission
IPMP	Integrated Pest Management Plan
ISTA	International Seed Testing Association

ITCZ	Inter-tropical Convergence Zone
Km	Kilometre
km ²	Square kilometres
l/s	Litres per second
m ³	Cubic metre
masl	Metres above sea level
MCM	Million cubic metres
MoA	Ministry of Agriculture
MANRLF	Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar
ME&KM	Monitoring & Evaluation and Knowledge Management
MLF	Ministry of Livestock and Fisheries
mm	Millimetre
MNRT	Ministry of Natural Resources and Tourism
MRALG	Ministry of Regional Administration and Local Government
MRALGSD-ZNZ	Ministry of Regional Administration, Local Government and Special Departments
MOFP-TZ	Ministry of Finance and Planning Tanzania Mainland
MOFP-ZNZ	Ministry of Finance and Planning Zanzibar
MOW	Ministry of Water
MSP	Marine Spatial Plan
MT	Metric tonnes
NBS	National Bureau of Statistics
NEMC	National Environment Management Council
PB	Project Brief
PCB	Polychlorinated biphenyl
PCU	Programme Coordination Unit
PDR	Programme Design Report
PHS	Plant Health Service, Ministry of Agriculture, Tanzania Mainland
PIM	Programme Implementation Manual
PMO	Prime Minister's Office
PPD	Plant Protection Division, Ministry of Agriculture, Livestock and Fisheries, Zanzibar
PSC	Programme Steering Committee
PTAC	Ministerial Programme Technical Advisory Committee
RGZ	The Revolutionary Government of Zanzibar
SEA	Strategic Environmental Assessment
SECAP	[IFAD's] Social Environmental and Climate Assessment Procedures
SEP	Stakeholder Engagement Plan
SME	Small and Medium Enterprises
SOP	Standard Operating Procedure
SUGECO	Sokoine University Graduate Entrepreneurs Cooperative
SWIOFC	South West Indian Ocean Fisheries Commission
SWIOFISH	World Bank's South West Indian Ocean Fisheries Project
TADB	Tanzania Agricultural Development Bank
TARI	Tanzania Agricultural Research Institute
TAFICO	Tanzania Fisheries Cooperative

TAFIRI	Tanzania Fisheries Research Institute
TASTA	Tanzania Seed Trade Association
TMA	Tanzania Meteorological Agency
TOSCI	Tanzania Official Seed Certification Institute
TZ	Tanzania Mainland
URT	United Republic of Tanzania
USD	United States Dollar
WIO	Western Indian Ocean
ZAFICO	Zanzibar Fisheries Cooperative
ZEMA	Zanzibar Environmental Management Authority
ZNZ	Zanzibar

AFDP DRAFT PIM

I. INTRODUCTION

1. This draft Programme Implementation Manual (PIM) provides guidelines for the implementation of the Agriculture and Fisheries Development Programme (AFDP). It elaborates the procedures and processes and the implementation modalities for AFDP interventions and activities. It is an annex of the Programme Design Report (PDR) and thus processes and procedures presented in this document are to be read in conjunction with the relevant sections of the main PDR. The PIM is designed as a tool to assist the Programme Coordination Unit (PCU) and implementing institutions, partners and service providers in thinking through the processes for the different sub-components. It will further be reviewed, enriched and detailed at the inception phase of the programme. Programme staff and implementing partners and relevant stakeholders will be facilitated to review the activities and implementation modalities and update the annual work plans and budgets. This participatory process and capacity building would aim to ensure familiarization and ownership of the Programme and the PIM throughout programme implementation.

Rationale for IFAD involvement

2. IFAD has supported Tanzania's agricultural sector for 40 years (since 1980) and is recognized by GoT and other development partners for providing continuous as well as innovative technical and reliable financial support in promoting inclusive rural transformation. Past IFAD investments in Tanzania adopted a production-focused approach, which sought to directly influence food security through increasing agricultural productivity. Recent projects have used a value chain development approach often focusing on marketing of particular commodities but have overlooked the nutritional values of commodities.

3. IFAD projects in Tanzania (MIVARF and MUVI1) supported to the introduction of Quality Declared Seeds (QDS) approach for sunflower, beans and sesame contributed to increasing the awareness of farmers on the availability of quality and affordable seeds and planting materials. Despite all these efforts, a sustainable and reliable supply chain for quality seed has not emerged². Multiplication and use of improved varieties remains low (lack of Early Generation Seeds) and volumes tend to remain low; while their supply dwindles in the absence of project funding. GoT has sought IFAD's support to strengthening a formal seed system through support to public institutions, private seed companies and farmers organisations that have unique positions and opportunities to produce adapted quality early generation seeds, and resolve the constraints of smallholder farmers using uncertified seeds or low-yielding varieties.

4. Similarly, IFAD has built a wealth of experience in the region, with large aquaculture investments in Kenya and Mozambique, from which AFDP can draw useful lessons and linkages to support the growth of small-holder aquaculture in high potential areas through cluster models, strengthening linkages with the private sector and enhancing the input supply systems. Despite the lucrative potential of fisheries resources in the Exclusive Economic Zone (EEZ), Tanzania has never undertaken large-scale commercial fishing activities in the EEZ. GoT has requested IFAD support to develop the country's capacity to utilize the fisheries resources in the EEZ through public-private partnership (PPP) arrangements, while building a strong framework for sustainable management of these resources. AFDP will promote public-private-producer partnership (4P) joint-venture shareholding schemes or supply-based

¹ Rural Micro, Small and Medium Enterprise Support Programme

² See also: <http://www.ccardesa.org/sites/default/files/ickm->

documents/AgriExperience2016_ReachingFarmersWithHighQualitySeedOfModernVarieties_Report_EN.pdf

arrangements³ as a mechanism to include smallholder fishers in deep sea fishing and related infrastructures managed by TAFICO and ZAFICO.

5. In order to accelerate ASDP II's implementation and delivery of scalable results, the GoT has requested the International Fund for Agricultural Development (IFAD) to finance the **Agricultural and Fisheries Development Programme (AFDP)**. This new programme will provide support to two priority areas of the ASDP II (programme area 2 - Enhanced agricultural productivity and profitability and programme area 3 -Rural commercialization and value addition), by contributing to address key sector challenges in the seeds, fisheries and aquaculture value chains, while strengthening institutional capacities of key public institutions and private sector stakeholders.

6. AFDP is fully aligned with the current Country Strategic Opportunity Programme's (COSOP) overall objective to contribute to transforming Tanzania's agricultural sector towards higher and more sustainable productivity, profitability, commercialization and increased smallholder farmer incomes for improved livelihoods, food security and nutrition, and overall resilience. COSOP's three strategic objectives of: (i) SO1: Improved institutional performance, coordination and accountability to IFAD target groups and their organizations at central and local levels; (ii) SO2: More inclusive and resilient value chains of priority commodities, driven by expanded and sustainable access to markets and financial services and by a more inclusive private sector; and (iii) SO3: Improved climate-resilient, productivity-increasing technologies in priority crop-livestock-fishery commodities.

7. The innovation in AFDP has been designed using an inclusive food systems approach⁴ that promotes livelihoods' diversification strategies and resilience (crops and fisheries) in such a way that programme investments will not only be profitable, but bring broad-based benefits for nutrition and social inclusion, and have positive or neutral impacts on natural resource management and bio-diversity. Food systems generate not only food, but also environmental, socio-economic and policy outcomes.

8. By adopting a food systems approach, AFDP looks beyond agricultural production, and take into account all activities, from production to consumption and their outcomes, while seeking to minimize negative externalities: the increase in social inequalities and environmental degradation. Therefore, the Programme will invest in the seed and fisheries chains of market and non-market activities and actors connecting food production, aggregation, transportation and storage, processing and catering, distribution, preparation and consumption, waste and resources management, as well as agro-input suppliers (seeds, feed, fingerlings, vessels, FAD.) and the associated regulatory institutions and activities. The programme will invest in the post-harvest, processing and marketing activities, in job and income creation, in nutrition and health, in energy and water resources, in loss and waste, in biodiversity and climate change adaptation issues etc.

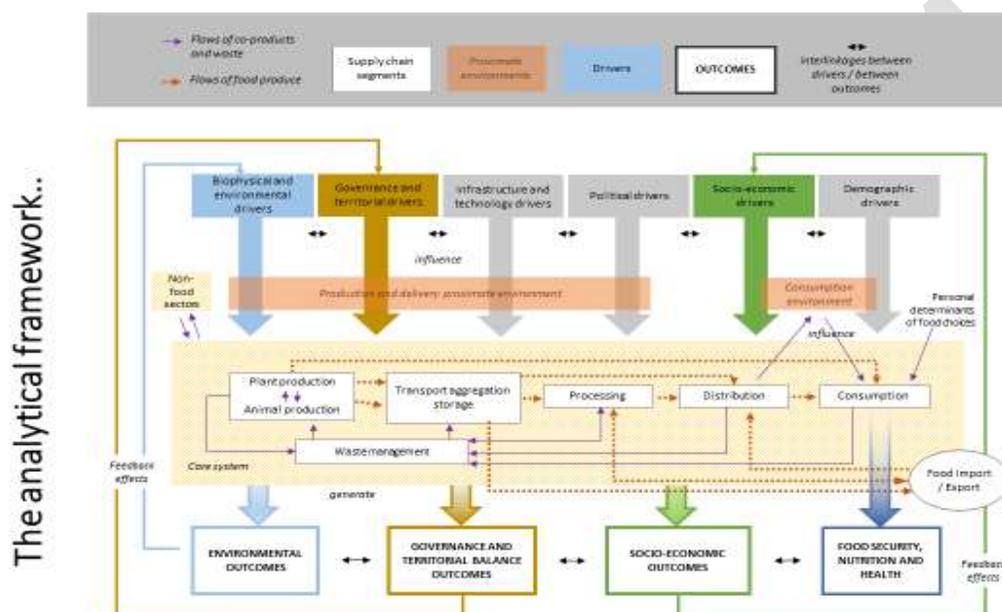
9. A food systems approach provides an integrated way to address multiple goals through sector contributions and entry points in different parts of the food system and in geographically flexible ways (e.g. national, sub-national/territorial, local). The food system analytical framework below distinguishes core system (including waste), drivers (direct and indirect) and outcomes. There are four groups of outcomes including governance, territorial development and equity / inclusiveness. It outlines the concept of proximate environment to

³ IFAD 2016. How to do public-private-producer partnerships (4Ps) in agricultural value chains. [https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+ percent284Ps+ percent29+in+Agricultural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3](https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+percent284Ps+percent29+in+Agricultural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3)

⁴ FAO. 2018. Sustainable food systems Concept and framework. <http://www.fao.org/3/ca2079en/CA2079EN.pdf>; Pouw, N., Bush, S. R., & Mangnus, E. P. M. (2019). Editorial overview: Towards an inclusive food systems approach for sustainable food and nutrition security. *Current Opinion in Environmental Sustainability*, 41, 93-96. <https://doi.org/10.1016/j.cosust.2019.12.003>

describe the drivers directly influencing production and transformation decisions and processes, and disentangle linkages (cross linkages, feedback effects, thresholds, unintended consequences, ..) between drivers, core activities and outcomes as well as interactions with non-food agricultural sectors / supply chains,

10. Figurexx Food system analytical framework



11.

Source: FAO/European Union Rapid food systems assessment, 2020

12. The Programme intends to contribute to four core sustainable food system⁵: (i) ensure food security and provide healthy, balanced and nutritious diets that contribute to health for all; (ii) provide decent livelihoods and jobs for all food system actors, notably smallholders, women and youth; (iii) contribute to inclusive governance, stability and equitable (fair) distribution of power among territories; and (iv) manage, preserve / regenerate ecosystems and limit their effects on climate change.

13. As a new and complex concept embracing multiple goals, diverse actors and sectors, each with different perspectives, interests and levels of understanding, AFDP is designed to be pragmatic, agile and incremental, while seizing on eventual opportunities in the policy sphere. At the field level, the programme will be integrated into the village planning process supported by the District Facilitation Team. As a key coordination mechanism at local level, District Facilitation Teams brings major actors in priority local value chain together to develop and drive the implementation of DADP activities that include various aspects such as productivity improvement, value addition and market access. The stakeholders at local level include the private sector (traders, processors, transporters, financial institutions, etc.), NGOs, development partners and various public institutions that can provide different types of technical support. The programme will further leverage ongoing community development projects and interventions as well as existing structures at the national and district levels. It

⁵ Dury, S., Bendjebbar, P., Hainzelin, E., Giordano, T. and Bricas, N., eds. 2019. *Food Systems at risk: new trends and challenges*. Rome, Montpellier, Brussels, FAO, CIRAD and European Commission.

will also raise awareness on the relevance / appropriateness of food systems approach and generate critical questions about food systems outcomes and stimulate policy debate.

14. The selected crop and fish value chains are highly relevant for increasing food security and nutrition in the target area. One-third of Tanzania's cropland (4 million ha), is devoted to maize, which accounts for 40 percent of the national caloric intake. Over 75 percent of rural households in Tanzania depend on beans and other pulses for daily subsistence and beans account for 71 percent of leguminous protein in diets. Grown by about 4 million households, sunflower oil is healthier than other types of oil, as it is low in saturated fat and high in polyunsaturated fat. More than 30 percent of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids, minerals and essential nutrients as well as amino and fatty acids, including Omega 3. In addition, sunflower cakes and maize are important ingredients in fish feeds and therefore help to improve aquaculture productivity and profitability. Increased income from maize, sunflower and beans/pulses to improve productivity will provide farmers with resources to fingerlings and fish feed.

Special aspects relating to IFAD's corporate mainstreaming priorities

15. In line with IFAD11 mainstreaming commitments, the programme intends to qualify as: (i) Gender mainstreamed; (ii) Nutrition sensitive; and (iii) climate focused.

16. **Gender and women empowerment.** Tanzania is positioned 150th out of 160 countries in the 2019 Gender Inequality Index⁶. This Index as well as the Gender Development Index both show that women are disadvantaged in access to education, health services as well as economic opportunities. Women play a crucial role in the agricultural sector, representing 52 percent of the labour force, but the contribution of women in the rural Tanzanian economy is underestimated. The share of female landowners to total female agricultural population remains low at 27 percent, as compared to 73 percent for male. Maize, sunflower and beans are the main crops that both male and female agricultural workers produce for home consumption, with more women engaged in subsistence farming. Women are less likely as compared to men to take advantage of improved seeds, fertilizers and pesticides, have access to the materials and implements for production, or afford farm labour. Women and girls face social and cultural norms which are more entrenched in rural areas, they often bear a heavy burden of work, have fewer opportunities to complete their schooling, and face expectations of early marriage, with risks of poor reproductive health and multiple childbirths and gender-based violence in form of transactional sex in exchange for fish⁷. There are cases of child labour especially among fishing communities where children watch over dagaa or help in drying that have been linked to non-completion of primary school (THDS 2015-16). Fishing is traditionally considered as a man's job. Women have restricted access to productive assets (boats, equipment), but actually dominate different stages of the fisheries' value chains. Across Tanzania, women are vital to small-scale aquaculture projects and account for about 25 per cent female-headed households.

17. GoT has adopted key gender strategies, as the country moves towards achieving sustainable development. Gender responsive laws, including the formulation of the Women and Gender Policy and National Strategy for Gender Development for Mainland; and the Gender Policy of Zanzibar (2016-2020), reflect the GoT's commitment to global frameworks such as the Beijing Declaration and Platform for Action and the United Nations (UN) Convention on the Elimination of all forms of Discrimination against Women (CEDAW).

⁶ UNDP 2019. Human Development Report 2019 available at <http://hdr.undp.org/sites/default/files/hdr2019.pdf>

⁷ IFAD 2012. Policy on Gender Equality and Women's Empowerment <https://webapps.ifad.org/members/eb/105/docs/EB-2012-105-R-2-Rev-1.pdf>

18. **Youth.** Tanzania's population is largely young, accounting for about 47 percent of the Tanzanians are under 15 years and 32 percent are between the ages of 15-34. 67 percent of the labour force and are mainly self-employed in informal and formal sectors. Youth unemployment in 2019 stood at 11.5 percent. The agricultural sector employs 22.9 percent of Tanzanian working youth (15-35 years). Every year an estimated 800,000 young women and men enter the labour market with limited educational qualifications. Unemployment among young women (14.3 percent) is higher than among young men (12.3 percent). In rural areas youths are informally employed (and underemployed) in subsistence agriculture and family-based livelihood activities such as handicraft, fishing and merchandize retailing. Most of the rural youth lack skills that are required in order to access employment opportunities. Education attainment determines the quality of the jobs that they subsequently get involved in. Although the proportion of population with formal education has improved over the years, females still lag their male counterparts. Around 24 percent of females compared to 19 percent of males have no formal education⁸. By 2030, it is projected that each year 1.6 million Tanzanians will enter the labour market. In addition, the youth population is projected to increase by 50 percent by 2050. Female youth employment is growing however female youth are more likely to be engaged in vulnerable employment⁹. This demographic dividend has tremendous potential to transform the supply and demand of food and will impact the agri-food industry.

19. As the largest employer in the country, the agriculture sector will remain an entry point for job creation, inclusive growth and poverty reduction. However, youth participation in agriculture, fisheries and aquaculture is hampered by limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies. The majority of youth do not have practical experience in the fishing and aquaculture sector, considering it as an occupation for older males. The promotion of and support to youth skills development, employment and enterprise development are reflected in the National Strategy for Growth and Reduction of Poverty (MKUKUTA II), the National Youth Development Policy (1996) and the National Employment Policy which coordinates, regulates and promotes equitable and rights-based employment in the public and private sectors.

20. **Nutrition.** The 2015-16 'Tanzania Demographic and Health Survey and Malaria Indicator Survey' reports that 34 percent of children under the age of five years are stunted or short for their age, which is a condition reflecting a cumulative effect of chronic malnutrition. Around 5 percent of children are wasted or too thin for their height, which reflects the level of acute malnutrition while, at the other extreme, 4 percent are overweight or over-nourished and 14 percent of children are underweight or too thin for their age. All three nutritional status indicators are highest among children in the lowest wealth quintile and lowest among children in the highest wealth quintile. Complementary feeding practices are inadequate and especially among the rural, with only 10 percent of breastfed children 6–23 months receiving a minimum acceptable diet, which has a major impact on growth and development. In addition, the adult population also faces a malnutrition burden: the number of women of reproductive age (15-49) affected by anaemia increased from 29.6 percent in 2012 to 28.5 percent in 2016 and higher among pregnant and breastfeeding mothers; the number of adults (18 years and old) who are obese increased from 1.6 million in 2012 to 2.2

⁸ Tanzania Demographic and Health Survey TDHS 2015-2016
<https://www.dhsprogram.com/pubs/pdf/FR321/FR321.pdf>

⁹ UNDP, 2018 Human Development Report <http://hdr.undp.org/en/countries/profiles/TZA>

million in 2016¹⁰ with variations across regions. The underlying causes for malnutrition are linked to food availability, high food prices, an inadequate diet, which is high in calories and very low in protein, poor nutrient intake, inappropriate feeding and dietary practices including for infants and young children, poor hygiene and child care, poor food preparation and storage practices which cause poor nutrient absorption or utilization¹¹. Better nutrition and practices are linked to mother's education. It is reported that 85 percent of Tanzanians cannot afford a healthy diet, for which the cost represents 104.1 percent of food expenditure, while 65 percent cannot afford a nutrient adequate diet that takes about 65 percent of food expenditure¹².

21. Tanzania's commitment to improving nutrition is outlined in key policy documents, which align with the Tanzania Development Vision 2025, National Multisectoral Nutrition Action Plan (2016–2021), Tanzania Agriculture and Food Security Investment Plan (2011–2020), Tanzania Food and Nutrition Centre Strategic Plan (2014–2018) and the National Nutrition Social and Behavior Change Communication Strategy (2013–2018). The President's Task Force on Nutrition as well as a multi-stakeholder platform, the High Level Steering Committee on Nutrition, are responsible for coordination of key nutrition stakeholders. In addition, budget line for nutrition are included in the ministries, departments, and other agencies; regional secretariats; and local government authorities to allocate resources for nutrition interventions in accordance with the National Nutrition Strategy.

22. **Marginalized populations:** Tanzania does not identify with the term indigenous, rather considers that there are segments of the population who may be disadvantaged due to their poverty status and other aspects of marginalization. These include the Akie, the Hadzabe, the Barabaig, and the Maasai. These people are often impoverished and food insecure due to land disputes and conflict. Women from these communities have little say in the decisions, right to health education, right to own properties, land and income of family¹³.

23. Tanzania is positioned 150th out of 160 countries in the 2019 Gender Inequality Index¹⁴. This Index as well as the Gender Development Index both show that women are disadvantaged in access to education, health services and economic opportunities. Women play a crucial role in the agricultural sector, representing 52 percent of the labour force, but this notwithstanding the contribution of women in the rural Tanzanian economy is underestimated. Female smallholder farmers tend to own smaller plots, have lower yields and less access to improved technologies, productive resources and access to finances. As for fishing, this has traditionally been considered as a man's job. Women have restricted access to productive assets (boats, equipment), but actually dominate different stages of the fisheries' value chains. Across Tanzania, women are vital to small-scale aquaculture Programmes.

24. GoT has adopted key gender strategies, as the country moves towards achieving sustainable development. Gender responsive laws, including the formulation of the Women and Gender Policy and National Strategy for Gender Development for Mainland; and the Gender Policy of Zanzibar (2016-2020), reflect the GoT's commitment to global frameworks such as the Beijing Declaration and Platform for Action and the United Nations (UN) Convention on the Elimination of all forms of Discrimination against Women (CEDAW).

¹⁰ Tanzania Demographic and Health Survey. 2015-2016.

<https://www.dhsprogram.com/pubs/pdf/FR321/FR321.pdf>

¹¹ http://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Tanzania_AFI_Situation_2018Feb.pdf

¹² FAO, IFAD, UNICEF, WFP and WHO. 2020. *The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets*. Rome, FAO.

<http://www.fao.org/3/ca9692en/online/ca9692en.html>

¹³ Human Rights Council Working Group on the Universal Periodic Review, United Republic of Tanzania, U.N. Doc. A/HRC/WG.6/25/TZA/

¹⁴ UNDP 2019. Human Development Report 2019 available at <http://hdr.undp.org/sites/default/files/hdr2019.pdf>

25. The AFDP will create equal opportunities for women and men to benefit from: (i) enhanced access to crops and fisheries-based production and value addition systems; (ii) access to improved nutrition, especially from legumes (beans and pulses), and from greater fisheries output; (iii) reduced workloads due to increased resilient crop yields and greater efficiency of fisheries production and post-harvest technologies, (iv) better access to productive resources and services; and (v) women economic empowerment to access more profitable markets and improved decision making.

26. **Youth.** Tanzania's population is largely young, accounting for about 47 percent of the Tanzanians are under 15 years and 32 percent are between the ages of 15-34. 67 percent of the labour force and are mainly self-employed in informal and formal sectors. Youth unemployment in 2019 stood at 11.5 percent. The agricultural sector employs 22.9 percent of Tanzanian working youth (15-35 years). Every year an estimated 800,000 young women and men enter the labour market with limited educational qualifications. Unemployment among young women (14.3 percent) is higher than among young men (12.3 percent). In rural areas youths are informally employed (and underemployed) in subsistence agriculture and family-based livelihood activities such as handicraft, fishing and merchandize retailing. Most of the rural youth lack skills that are required in order to access employment opportunities. Education attainment determines the quality of the jobs that they subsequently get involved in. Although the proportion of population with formal education has improved over the years, females still lag their male counterparts. Around 24 percent of females compared to 19 percent of males have no formal education¹⁵. By 2030, it is projected that each year 1.6 million Tanzanians will enter the labour market. In addition, the youth population is projected to increase by 50 percent by 2050. Female youth employment is growing however female youth are more likely to be engaged in vulnerable employment¹⁶. This demographic dividend has tremendous potential to transform the supply and demand of food and will impact the agri-food industry.

27. As the largest employer in the country, the agriculture sector will remain an entry point for job creation, inclusive growth and poverty reduction. However, youth participation in agriculture, fisheries and aquaculture is hampered by limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies. The majority of youth do not have practical experience in the fishing and aquaculture sector, considering it as an occupation for older males. The promotion of and support to youth skills development, employment and enterprise development are reflected in the National Strategy for Growth and Reduction of Poverty (MKUKUTA II), the National Youth Development Policy (1996) and the National Employment Policy which coordinates, regulates and promotes equitable and rights-based employment in the public and private sectors.

28. Youth involvement in agriculture, fisheries and aquaculture is hampered by limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies. The AFDP will support youth by: (i) improving opportunities and skills for micro-enterprises in processing, storage and value addition of crops and fish products; (ii) enhancing their capacity as out-growers for seed companies in multiplication as well as greater emphasis on local seed production (Quality Declared Seeds, etc.) production and fish farming; (iii) enhancing access to financial services; and (iv) facilitate youth participation, representation, and decision-making.

¹⁵ Tanzania Demographic and Health Survey TDHS 2015-2016
<https://www.dhsprogram.com/pubs/pdf/FR321/FR321.pdf>

¹⁶ UNDP, 2018 Human Development Report <http://hdr.undp.org/en/countries/profiles/TZA>

29. **Nutrition.** The number of undernourished people increased from 13.6 million in 2004-2006 to 17.6 million in 2014-2016, although the prevalence of undernourished people decreased from 34.4 percent to 30.7 percent during the same period¹⁷. The 2015-16 Tanzania Demographic and Health Survey and Malaria Indicator Survey reports that 34 percent of children under the age of five years are stunted or short for their age, which is a condition reflecting cumulative effect of chronic malnutrition. Around 5 percent of children are wasted or too thin for their height, which reflects the level of acute malnutrition while, at the other extreme, 4 percent are overweight or over-nourished and 14 percent of children are underweight or too thin for their age. In addition, adult population also face a malnutrition burden: 37.2 percent of women of reproductive age have anaemia, 6.1 percent of adult women have diabetes, compared to 6 percent of men; and 12.7 percent of women and 4.0 percent of men suffer from obesity. This is linked to an inadequate diet, which is high in calories and very low in protein and essential nutrients.

30. Tanzania's commitment to improving nutrition is outlined in key policy documents, which align with the Tanzania Development Vision 2025, National Multisectoral Nutrition Action Plan (2016-2021), Tanzania Agriculture and Food Security Investment Plan (2011-2020), Tanzania Food and Nutrition Centre Strategic Plan (2014-2018) and the National Nutrition Social and Behavior Change Communication Strategy (2013-2018). The President's Task Force on Nutrition as well as a multi-stakeholder platform, the High Level Steering Committee on Nutrition, are responsible for coordination of key nutrition stakeholders.

31. AFDP is designed within the framework of nutrition-sensitive investments¹⁸ and will influence nutrition through the following pathways: (i) production of nutritious foods, including bio-fortified maize and beans/pulses¹⁹, sunflower, seaweed and fish species of high nutritive value (e.g. "dagaa"); (ii) promote household consumption of safe and nutritious food; (iii) support processing and marketing of fish and sunflower with labour saving technologies; (iv) providing opportunities for income diversification; and (v) women economic empowerment to access more profitable markets and improved decision making.

32. **Environment and climate change.** Climate projection scenarios by 2050 include: (i) increased average annual temperature of 1.4 °C to 2.3 °C with greatest warming expected in the west/southwest regions; (ii) increased duration of heat waves (by 7-22 days) and dry spells (by up to 7 days); (iii) increased in average rainfall (range of -3 to +9 percent), with greatest increase in the northeast and likely rainfall decline in July-September; (iv) increased heavy rainfall event frequency (7-40 percent) and intensity (2-11 percent); and (v) rise in sea level of 16cm to 42cm. It is estimated that climate variability and change (CC) will further decrease national agricultural production by 8-13 percent by 2050, due to increased water and heat stress, soil erosion and flood damage. CC will worsen the environment for agricultural production - a rising incidence of extreme weather, droughts and other climate-related events, will increase smallholder farmers' exposure to risks. Sea level rise, which is associated with global warming, may cause seawater to rise above optimal levels of some corals. This will increasingly threaten community livelihoods and food supply, who depend on coastal and inland fisheries.

33. Climate change adaptation and mitigation. In order to promote the adaption of local cropping systems to uncertainties and impact risks associated with climate variability and change (drought and floods), the programme will contribute to improved farmer access to preferred productive varieties, resilient to climate change and tolerant to pests and diseases.

¹⁸ FAO. 2015. Key Recommendations for Improving Nutrition through Agriculture and Food Systems. Available at: www.fao.org/3/a-i4922e.pdf

¹⁹ Beans and/or other pulses depending on the agro-ecological conditions in the target area where pigeon peas, cowpeas, green gram, groundnuts, etc. are most popular leguminous crops.

Strengthening of sustainable seed systems in combination with the promotion of CSA practices will allow for sustainable productivity and resilience of local rainfed cropping/farming systems, while contributing to mitigation of climate change. In order to recover and protect coastal and marine resources, the programme will promote environmentally friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers tents) and storage. In particular, the programme will support investments in stock assessments, selective fishing gears and methods to avoid catching non-targeted species and participatory management of natural resources to address destructive fishing practices and illegal mangrove cutting.

II. PROGRAMME OBJECTIVES

34. The **overall objective** of AFDP (2021-2026) is to contribute to inclusive food systems for improved livelihoods, food security, nutrition and resilience. In this regard, its development objective is to “enhance sustainable productivity, climate resilience and commercialization of selected crop seeds, fisheries and aquaculture”, while devoting particular attention to women empowerment and youth participation. This will be measured by four core indicators, namely: (i) percentage of target households reporting increased average annual net income by 30 percent; (ii) percentage of households reporting an average 25 percent increase in production of maize, beans, sunflower, seaweed and fish; (iii) at least 60 percent of women 15-49 years of age who consume at least 5 out of 10 food groups; and (iv) at least 40 percent of households reporting adoption of environmentally sustainable and climate-resilient technologies and practices.

Theory of Change

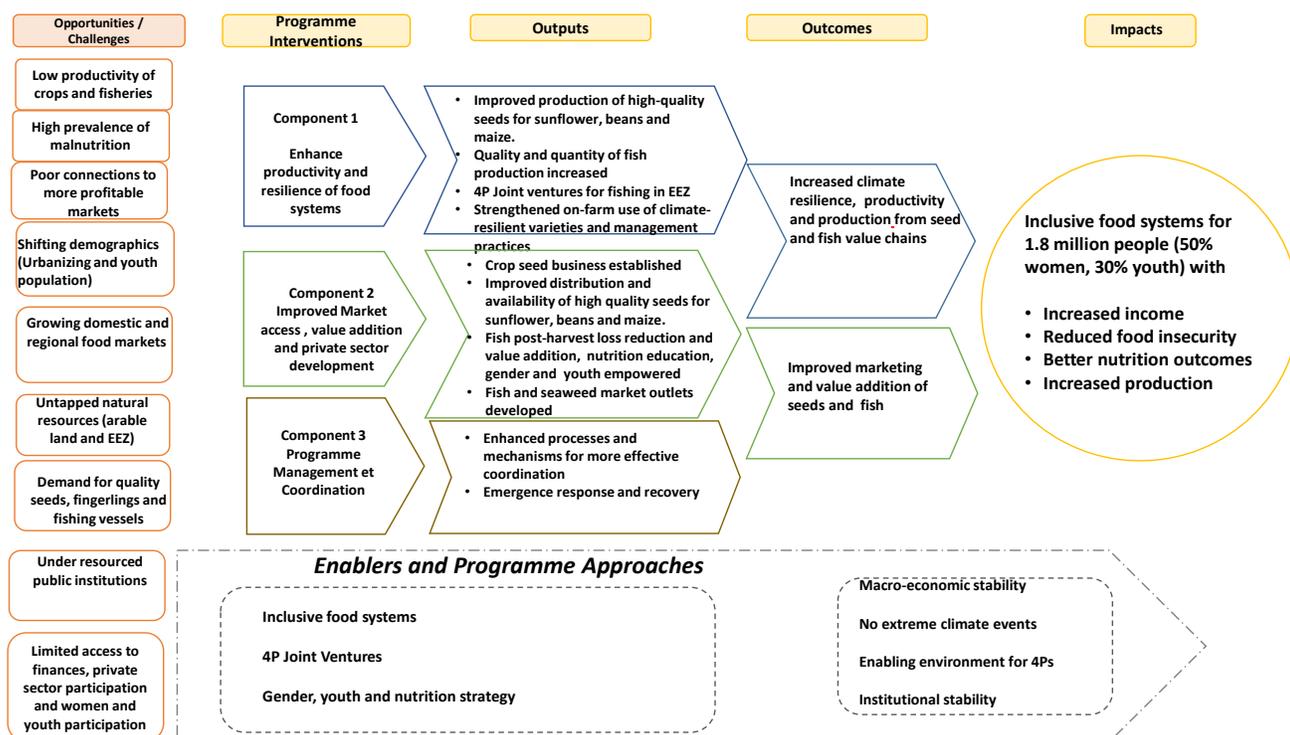
35. Improving agricultural productivity and production in Tanzania smallholder agriculture is widely recognised as a critical outcome in the pathway to growth, poverty alleviation and inclusive food systems, especially in vulnerable areas. Increased crop and fisheries productivity and profitability, especially staple crops (maize) and nutritious food (pulses and edible oil crops), fisheries and aquaculture allows farmers to take advantage of growing domestic and regional market opportunities, while increasing household food security and nutrition.

36. Through an inclusive value-chain and food system approach, this six-year Programme will support access to and utilization of production enhancing technologies (improved seeds, fingerlings, deep sea fishing vessels,) as well as post-harvest, value addition and marketing infrastructures and services for increasing incomes. AFDP nutrition pathways will lead to nutritious foods such as fish and sea weed, maize, beans/pulses and sunflower and increase women’s and youth incomes and assets, increase women’s and youth participation and decision making, as well as targeted messages for women and men make more informed dietary choices.

37. AFDP interventions will deliver the following two interlinked outcomes to help small holders achieve: (i) increased climate-resilient productivity and production from crop seeds and fisheries and (ii) improved marketing and value addition of crop seeds and fisheries value chains. These outcomes will combine to make a significant impact by expanding, adapting and sustaining successful interventions to reach about 1.8 million people (50 percent women and 30 percent youth) who will: (i) increase their productivity and production; (ii) increase their annual net income, and (iii) increase their access to safe, nutritious and sufficient food and increased minimum dietary diversity for vulnerable groups.

38. Ultimately, the programme will contribute to inclusive agricultural transformation towards high productivity, resilience and income for improved livelihoods, food security and nutrition in Tanzania. The success of the programme will be affected by: (i) macro-economic and political stability; (ii) natural disasters, including COVID-19 pandemic, and extreme climate events; (iii) levels of public and private investments in food and agriculture; and (iv) institutional instability and technical capacities.

Figure 1: AFDP Theory of Change



39. AFDP is fully aligned with the **sustainable development goals** (SDG) 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), SDG 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development SDG 1: End poverty in all its forms everywhere, and SDG 13: Take urgent action to combat climate change and its impacts.

40. The Programme will specifically contribute to the following SDG targets:

- SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) target 2.1 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, to safe, nutritious and sufficient food all year round; and targets 2.3 double the agricultural productivity and incomes of small-scale food producers, in particular women, family smallholder farmers, and fishers, including through secure and equal access to other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
- SDG 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development) target 14.7 increase the economic benefits from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism, and 14 B Provide access for small-scale artisanal

fishers to marine resources and markets.) by improving the socio-economic conditions of small-scale fishers and fish smallholder farmers within the context of sustainable fisheries management and sustainable use of the oceans.

- SDGs 5 (*Achieve gender equality and empower all women and girls*) specifically target 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making);
- SDG 13: (*Take urgent action to combat climate change and its impacts*) target 13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries, including focusing on women, youth and local and marginalized communities.
- SDG 1: (*End poverty in all its forms everywhere*) target 1.2. reduce at least by half the proportion of men, women and youth living in poverty according to national definitions through agriculture-led development;

41. At the national level, the programme is in line with the Tanzania's Development Vision 2025, which aims at transforming the economy to diversified and semi-industrialized economy with a substantial industrial sector. The programme will provide an opportunity for IFAD to fully align and contribute to ASDP II, the Government's sector programme for the development and modernization of the agricultural sector.

42. **Alignment with IFAD corporate priorities.** The Programme is in line with the three strategic objectives of IFAD Strategic Framework 2016-2025, namely (i) increase poor rural people's productive capacities; (ii) increase poor rural people's benefits from market participation; and (iii) strengthen the environmental sustainability and climate resilience of poor rural people's economic activities. It is aligned with the COSOP (2016-2021) for Tanzania and relevant IFAD strategies and guidelines especially those pertaining to gender, youth, climate/environment, private sector, rural finance and nutrition, and scaling up.

Programme approach

43. AFDP is designed as an integrated programme, consolidating multiple ASDP II interventions into a single programme, with a related set of outcomes. It is to be recalled that the Programme directly contributes to two ASDP II priority programme areas [programme area 2 - Enhanced agricultural productivity and profitability and programme area 3 -Rural commercialization and value addition]. As such, AFDP is structured around two mutually reinforcing and interlinked components and in doing so, it mirrors ASDP II priority programme areas.

44. The two AFDP components are: Component 1: Enhanced agricultural productivity of crop seeds and fisheries; and Component 2: Improved market access, value addition and private sector development. A third component focuses on Programme Management and Coordination. The expected outcome of component 1 (Enhanced productivity of crop seeds, fisheries and aquaculture is "Increased climate-resilient productivity and production from crop seed and fish value chains. It will be achieved by focusing investments in two sub-components, namely (i) crop seed systems development and (ii) fisheries and aquaculture development. The expected outcome of Component 2 (Improved market access, value addition and private sector development) is "Improved marketing and value addition of crop seeds and fish products". It will be achieved by combining investments in crop seed business development and fish market development and value addition. Support provided under this component will also include innovative modalities to finance technical assistance and productive investments to support production, marketing, and processing activities. In order

to facilitate effective implementation, the subcomponents are structured around seed value chains and fisheries and aquaculture.

45. In line with IFAD 11 mainstreaming commitments, the programme intends to qualify as: (i) Gender mainstreamed; (ii) Nutrition sensitive; (iii) Youth sensitive, and (iv) Responsive to IFAD's climate change adaptation and mitigation procedures.

46. **Gender mainstreaming.** The AFDP will create equal opportunities for women and men to benefit from: (i) enhanced access to crops and fisheries-based production and value addition systems; (ii) access to improved nutrition from bio-fortified bean and from greater fisheries output; (iii) reduced workloads due to increased resilient crop yields and greater efficiency of fisheries production and post-harvest technologies, (iv) better access to productive resources and services; and (v) women economic empowerment to access more profitable markets and improved decision making.

47. **Youth entrepreneurship:** The AFDP will support youth by: (i) improving opportunities and skills for small-enterprises in processing, storage and value addition of crops and fish products; (ii) enhancing their capacity as out-growers for seed companies in multiplication as well as greater emphasis on improved seed production (Quality Declared Seeds, etc.) production; (iii) enhance capacity of smallholder aquafarmers and aquaculture service providers; (iii) enhancing access to financial services; and (iv) facilitate youth participation, representation, and decision-making.

48. **Nutrition sensitive investments:** AFDP is designed within the framework of nutrition-sensitive investments and will influence nutrition through the following pathways: (i) production of nutritious foods, including bio-fortified maize and beans/pulses, sunflower, seaweed and fish species of high nutritive value (e.g. "dagaa"); (ii) promote household consumption of safe and nutritious food; (iii) support processing and marketing of fish and sunflower with labour saving technologies; (iv) providing opportunities for income diversification; and (iv) women economic empowerment to control income and improved decision making.

49. **Climate change adaptation and mitigation:** In order to mitigate and adapt to uncertainties associated with climate variability and change (drought and floods), the programme will contribute to the development of appropriate locally-adapted seeds that are more resilient to climate change, pests and diseases. In order to recover and protect coastal and marine resources, the programme will promote environmental friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers tents) and storage. In particular, the programme will support investments in stock assessments, selective fishing gears and methods to avoid catching non-targeted species and participatory management of natural resources to address destructive fishing practices and illegal mangrove cutting.

50. **Access to finance:** The Programme will partner with Tanzania Agricultural Development Bank (TADB) to facilitate access to adapted and affordable financial services by the various value chain actors (small scale producers and SMEs / Cooperatives along the crop and fish value chains). Financial instruments managed by TADB will be leveraged to raise appetite of commercial banks, micro-finance institutions and Community Banks to finance these actors. This will include the Smallholder Credit Guarantee Scheme (SCGS) and other instruments to be established by TADB including credit lines for wholesale lending to these financial institutions. Larger investments requiring long term financing may be financed directly by TADB or through co-financing arrangements with commercial banks. The Programme will facilitate TADB and its partner FIs to develop adapted products and delivery channels, on demand and cost sharing basis, especially for sectors deemed riskier and/or less known by these institutions, women and youths.

51. On the demand side, the technical and Business Development Support (BDS) provided by the Programme, as well as the 4P models to be promoted will be key to lower the risk profile of the programme beneficiaries and increase their creditworthiness. Financial literacy training modules will also be included in the BDS support when relevant to enable them to make the right choice of financial services on offer (savings, loans and insurance) and identify the right financial service providers for the development of their enterprises.

52. **Geographic concentration.** ASDP I faced implementation challenges and generated limited impact due to the scale and complexity of implementing a new programme nationally. An analysis of the World Bank portfolio in Tanzania²⁰ also shows that the most effective programs were generally specific, large investments or interventions, geographically targeted, backed with sound analytics, and supported by robust systems for quality assurance and quality control. AFDP investments will be: (i) programmatically focused on the two ASDP II priority areas; (ii) thematically targeted to the crop seeds and fish value chains, and (iii) geographically focused in the arid and semi-arid lands in central, western and lake zones areas, which are particularly vulnerable to CC and where pockets of food insecurity persist.

53. **Phasing and sequencing:** The Programme will use a phased approach by building and consolidating impacts in selected districts (clusters) in the drier central Tanzanian AEZ, before gradually adopting a demand-driven scaling-up. While seed production/producer and distribution/agro-dealer support activities will cover all selected regions from the beginning on (with gradual activity intensification), the intensification of agricultural extension activities will initially target selected districts (within target regions) with plans for scaling up gradually starting in Year 1 with one or two districts in each of the targeted regions and scale up gradually over implementation period to reach all targeted districts in Year 4 (2024). The final choice of district sequencing will be done at the inception stage through stakeholder consultative processes.

54. AFDP will adopt a phased approach in rolling out investments in seed value chains and sustainable marine fisheries management. The six years of the Programme will be sequenced as follows (i) preparatory stage (0-6 months), (ii) start up phase (6-12 months), (iii) investment phase (Years 2 and 3), (iv) consolidation of investments phase (Years 3 and 4), and (v) scaling up phase (Years 5 and 6). To accelerate programme start-up and preparation activities, the Programme will fast track the process for the procurement of at least four fully equipped marine fishing vessels for Zanzibar and Mainland (18 m and 25m) in the second half of year 1, following completion of the required assessments. To this end, initial activities would allow to pre-finance necessary investment readiness activities, namely: (i) environmental and social impact assessment studies (ESIAs); (ii) development of inclusive business models and modalities for PPP arrangements; and (iii) detailed economic and technical feasibility studies, including market targeting, to further refine and ascertain the viability of the fishing vessels. IFAD and GOT will conduct implementation support and supervision missions as well as Medium Term Review to guide the procurement of the remaining number of fishing vessels.

55. **Mainstreaming business approach to agriculture.** An evaluation of ASDP I showed that agriculture value chains are underdeveloped and fragmented. AFDP will contribute in bridging the gap between agricultural production and marketing, with a focus on business innovations benefiting women and youth along the value chain. AFDP design builds on lessons learned from IFAD Programmes in Tanzania, including the closed 'Rural Micro, Small and Medium Enterprise Support Programme' (MUVI: 2007-2016) and ongoing 'Marketing Infrastructure, Value Addition and Rural Finance Support Programme' (MIVARF). It also builds on IFAD's global and extensive experience in promoting pro-poor agricultural value chains. AFDP adopts an inclusive agricultural value chain approach that, beyond

²⁰ The World Bank, 2018. Country Partnership Framework for the United Republic of Tanzania FY18-FY22

productivity and production, invests in linking smallholder producers to more profitable markets, and building their capacities to graduate from artisanal fishing and subsistence farming to semi-subsistence/semi-commercial status, practicing farming as a business.

56. **Promoting producers-public-private partnerships (4Ps) models.** A substantial number of smallholder's associations and cooperatives have the potential to engage in business partnerships, but they are often marginalized from higher-value markets due to high unit production costs, poor infrastructure, and limited access to credit and technical assistance. IFAD has extensive experience in 4P business models²¹ to leverage financing, promote risk sharing, enhance innovation and market access as well as increase the inclusion of smallholder farmers and their organizations in profitable seed and fish value chains.

III. TARGETING, NUTRITION, GENDER AND YOUTH

Programme area.

57. AFDP will focus on drier AEZ with unimodal rainfall of the central Tanzania Mainland corridor, targeting sustainable intensification and diversification of more vulnerable farming systems (crops and aquaculture), highly susceptible to climate variability and change. The programme will also promote sustainable utilization of fisheries resources for improved livelihoods of coastal fishing communities in Zanzibar and Mainland Tanzania. The programme targets a total of 41 districts (out of 169 districts) in 11 regions (out of 31 regions) (Table 1) as well as four marine conservation areas in Unguja and Pemba, Zanzibar.

58. Table 1: Programme target areas

Zones	Regions/Marine Conservation Areas	Districts
Central	Morogoro (5)	Mvomero, Kilosa, Kilombero, Gairo, Morogoro Council
	Manyara (4)	Kiteto, Mbulu, Babati, Hanang
	Singida (5)	Manyoni, Ikungi, Singida, Mkalama, Iramba
	Dodoma (6)	Kongwa, Kondoa, Chamwino, Bahi, Mpwapwa, Chemba
	Tabora (3)	Igunga, Nzega, Uyui
Lake zone	Mwanza (3)	Misungwi, Kwimba, Sengerema
	Shinyanga (2)	Kahama, Shinyanga
	Geita (3)	Bukombe, Geita, Chato
Coastal	Tanga (5)	Handeni, Kilindi, Pangani, Muheza, Mkinga
	Pwani (4)	Bagamoyo, Mkuranga, Kibaha, Mafia
	Lindi (1)	Kilwa
Zanzibar	Marine conservation areas Unguja	Tumbatu, Mnemba – Chwaka Bay, Menai Bay

²¹ IFAD 2016. How to do public-private-producer partnerships (4Ps) in agricultural value chains. <https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+%284Ps%29+in+Agricultural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3>

	Marine conservation areas and Pemba	Pemba channel
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Figure 2: Map of Programme Area



 The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.
Map compiled by IFAD | 17-06-2020

Table 2: Estimates of demographic (agricultural HH in 2020) and production (in kg/HH) in target area (based on 2012 population census and 2010 district productions)

Zone	Region	District	Population 2012	24%	75%	5	Sunf	Production (kg/HH)-Estimate 2010				
				Total Population 2020 (estim)	Rural Population 2020 (estim)	Rural HHs (5 pers/HH) 2020 (estim)		AB	Poverty Index	Maize	Sun-flower	Beans
COASTAL EAST	TANGA	Handeni	276 646	343 041	257 281	51 456			2124	4	16	
		Kilindi	236 833	293 673	220 255	44 051			1634	7	575	
		Pangani	54 025	66 991	50 243	10 049			623	0	0	
		Mkinga	118 065	146 401	109 800	21 960			486	0	30	
		Muheza	204 461	253 532	190 149	38 030			797	0	173	
	Target districts		890 030	1 103 637	827 728	165 546	44%		1369	3	183	
	TOTAL Region	TANGA	2 045 205	2 536 054	1 902 041	380 408		21	886	1	174	
	PWANI	Bagamoyo	311 740	386 558	289 918	57 984			924	4	0	
		Kisarawe	101 598	125 982	94 486	18 897			425	0	8	
		Kibaha	70 209	87 059	65 294	13 059			169	4	0	
		Mafia	46 438	57 583	43 187	8 637			12	0	0	
		Target districts		529 985	657 181	492 886	98 577	48%		547	2	2
TOTAL Region	PWANI	1 098 668	1 362 348	1 021 761	204 352		28	410	1	3		
CENTRAL	MOROGORO	Mvomero	312 109	387 015	290 261	58 052			1199	20	94	
		Kilosa	438 175	543 337	407 503	81 501			1166	57	179	
		Gairo	193 011	239 334	179 500	35 900						
		Morogoro Dis Con	286 248	354 948	266 211	53 242			354	25	294	
		Target districts		1 229 543	1 524 633	1 143 475	228 695	55%		798	31	149
	TOTAL Region	MOROGORO	2 218 492	2 750 930	2 063 198	412 640		19	1246	19	111	
	DODOMA	Kongwa	309 973	384 367	288 275	57 655	AB		1059	95	3	
		Kondoa	269 704	334 433	250 825	50 165			1393	1006	60	
		Chamwino	330 543	409 873	307 405	61 481			836	95	0	
		Bahi	221 645	274 840	206 130	41 226			462	234	0	
		Mpwapwa	305 056	378 269	283 702	56 740			545	0	135	
		Chemba	235 711	292 282	219 211	43 842						
		Target districts		1 672 632	2 074 064	1 555 548	311 110	80%		796	204	29
	TOTAL Region	DODOMA	2 083 588	2 583 649	1 937 737	387 547		23	441	190	23	
	SINGIDA	66%	Ikungi	272 959	338 469	253 852	50 770			0	0	0
			Manyoni (North)	296 763	367 986	242 871	48 574	AB		688	200	29
			Singida district	225 521	279 646	209 735	41 947	AB		1012	987	193
			Mkalama	188 733	234 029	175 522	35 104			0	0	0
			Iramba	236 282	292 990	219 742	43 948			1836	1433	151
	Target districts		1 220 258	1 513 120	1 101 721	220 344	86%		730	470	71	
	TOTAL Region	SINGIDA	1 370 637	1 699 590	1 274 692	254 938		34	594	612	58	
	MANYARA	Kiteto	244 669	303 390	227 542	45 508			1713	167	32	
Babati (312 392	387 366	290 525	58 105			2282	166	342		
Hanang		275 990	342 228	256 671	51 334			1420	280	577		
Mbulu		320 279	397 146	297 859	59 572			1057	71	182		
Target districts			1 153 330	1 430 129	1 072 597	214 519	81%		1729	173	267	
TOTAL Region	MANYARA	1 425 131	1 767 162	1 325 372	265 074		31	1575	131	302		
TABORA	Igunja	399 727	495 661	371 746	74 349	AB		746	164			
	Uyui	396 623	491 813	368 859	73 772			631	20	45		
	Nzega	502 252	622 792	467 094	93 419			662	18	3		
Target districts		1 298 602	1 610 266	1 207 700	241 540	57%		678	50	13		
TOTAL Region	TABORA	2 291 623	2 841 613	2 131 209	426 242		35	708	51	37		
LAKE	SHINYANGA	Shynianga rural	334 417	414 677	311 008	62 202			896	14	8	
		Kahama dist rur	523 802	649 514	487 136	97 427			1294	33	0	
	Target districts		858 219	1 064 192	798 144	159 629	56%		1333	26	3	
	TOTAL Region	SHINYANGA	1 534 808	1 903 162	1 427 371	285 474		32	1093	33	96	
	GEITA	Geita (mun&dist)	807 619	1 001 448	660 955	132 191			1126	3	467	
		Chato /b	365 127	452 757	339 568	67 914			534	0	271	
		Bukombe (Geita)	224 542	278 432	208 824	41 765						
	Target districts		1 397 288	1 732 637	1 209 348	241 870	75%		995	2	387	
	TOTAL Region	GEITA	1 739 530	2 157 017	1 617 763	323 553		38	744	2	289	
	MWANZA	Misungwi /b	351 607	435 993	287 755	57 551			434	0	7	
		Sengerema /b	663 034	822 162	542 627	108 525			461	3	109	
		Kwimba /b	406 509	504 071	332 687	66 537			421	1	2	
Target districts			1 421 150	1 762 226	1 163 069	232 614	45%		432	2	45	
TOTAL Region	MWANZA	2 772 509	3 437 911	2 578 433	515 687		35	206	2	26		
MAINLAND	ST Target distri	Target districts	11 671 037	14 472 086	10 572 215	2 114 443		2010	929	105	118	
	Total Regions	Target Regions	18 580 191	23 039 437	17 279 578	3 455 916			757	76	103	
		% distri in regions	63%	63%	61%	61%			1753	1980	1639	

Source: Tanzania 2012 census, Tanzania National HBS 2017/18 and Zanzibar HBS 2014/15.

/a: Estimated on 2012 census data considering on average 2.4% annual population increase

/b: estimated on calculated 2020 population, average of 5 persons per HH and 75% rural population except for urbanised areas (Mwanza and Geita 66%)

59. **Agriculture and food security context.** Agricultural production contributed to about 29.1 percent of GDP, 47 percent of exports and provided employment to about 66.3 percent of Tanzanian households in 2018 (a decline from 71.4 percent of total employment in 2008), while meeting 95 percent of the country's food requirements. Tanzania has 95.5 million hectares (ha) of land, of which 44 million ha are classified as arable, with only 23 percent under cultivation. One third of cropland (4 million ha), is devoted to maize, which accounts for 40 percent of the national caloric intake. About 80 percent of agricultural production comes from rainfed, low-input smallholder farms (with an average farm ranging from 0.2 ha to 2 ha) highly vulnerable to weather variability. Key national and regional trends are driving structural changes in the agricultural landscape and food systems in Tanzania, providing new opportunities but also challenges. Over 75 percent of rural households in Tanzania depend on beans and other pulses for daily subsistence and beans account for 71 percent of leguminous protein in diets. Grown by about 4 million households, sunflower is healthier than other types of oil, as it is low in saturated fat and high in polyunsaturated fat. More than 30 percent of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids and essential amino and fatty acids.

60. **Technologies and innovations.** Average crop yields in Tanzania are often only a third of optimal levels, as the average use of quality inputs, essentially improved seeds, fertilizers and modern technology remains low. For maize and beans, the average rate of use of certified seeds is estimated at 16-23 percent and 1.9 percent respectively, mainly focusing on high potential areas in southern, western and northern highlands. Despite some advances over the last 10 years, especially in high potential areas and hybrid maize varieties, weakness in the seeds sector persist, including: (i) a low rate of release of new varieties including climate smart varieties, mainly Open Pollinated Varieties (OPVs), adapted to more vulnerable Agro-ecological Zones (AEZ); (ii) insufficient availability of early generation seed (breeder seed, pre-basic seed and basic seed) for adapted public OPV varieties; (iii) inadequate facilities (irrigation, treatment, storage) to sustain seed multiplication and production; (iv) limited promotion and facilitation to encourage smallholder access and adoption of improved seeds; and (v) pervasive existence of fake certified seeds on the market.

61. **Cropping systems in target area.** The projected annual cropped area per HH in target regions and districts for 2020 have been estimated/projected on the basis of available data, including: (i) detailed district production data for 2005-2010 from Ministry of Agriculture, Food Security and Cooperatives - MAFSC (Food Security department); (ii) Regional AGSTATS 2011 and 2018/19 (preliminary) from Crop monitoring and Early Warning (MAFSC); and (iii) national agricultural production data (FAOSTAT – 2020). In 2010, average cropped areas by rural HH for selected value chains in target regions are estimated as follows:

Table 3: Average AREA annually cropped per rural HH (ha) and average yields (t/ha)

Region	MAIZE		SUNFLOWERS		BEANS		OTHER PULSES	
	Area/HH (ha)	Yield (t/ha)						
TANGA	0.64	1.3	0.01	0.4	0.18	0.9	0.02	1.4
PWANI	0.32	1.2	0.00	0.6	0.00	0.5	0.03	1.2
MOROGORO	0.51	2.3	0.04	1.0	0.07	1.5	0.04	1.2
DODOMA	0.42	1.0	0.49	0.8	0.04	0.6	0.21	0.7
SINGIDA	0.45	1.3	0.95	1.3	0.05	1.1	0.06	1.0
MANYARA	0.99	1.5	0.25	1.0	0.35	0.8	0.11	1.2

TABORA	0.58	1.2	0.09	1.1	0.06	0.6	0.12	0.7
SHYNIANGA	1.10	0.9	0.07	0.9	0.10	0.9	0.21	1.4
GEITA	0.59	1.2	0.00	0.8	0.31	0.9	0.05	1.3
MWANZA	0.16	1.2	0.00	1.0	0.03	0.8	0.06	1.1
Average in target regions	0.55		0.17		0.11		0.09	

Source: Projections from available data

62. Considering that on average, (internal) changes in local cropping systems for targeted regions remained marginal over the 10 last years and that production increases are mainly linked to increased cropped area induced by increased rural population, areas cropped during 2019/20 in selected VC for target Regions have been estimated as follows:

Table 4: Estimated area cropped for selected species in Target Regions of Tanzania

REGION	Area cropped (ha) (2010)			Estimated Area cropped (ha) for 2019/20						
	Maize	Sun-flower	Beans	Maize %/a	Sunflower %/a	Beans %/a	Other Pulses			
TANGA	181420	850	50300	245254 6%	2361 0%	66972 6%	5943			
PWANI	48900	180	700	66106 2%	500 0%	932 0%	5223			
MOROGORO	156460	5510	21330	211511 5%	15307 2%	28400 2%	18297			
DODOMA	119560	68870	10490	161628 4%	191320 %	13967 1%	82805			
SINGIDA	84150	87330	9410	113759 3%	242602 %	12529 1%	14452			
MANYARA	194890	24250	69940	263463 6%	67366 7%	93122 8%	28886			
TABORA	183660	13960	18470	248282 6%	38781 4%	24592 2%	50898			
SHYNIANGA	232300	7660	21780	314036 8%	21279 2%	28999 3%	61249			
GEITA	142350	490	76150	192437 5%	1361 0%	101390 9%	17720			
MWANZA	61820	600	11790	83572 2%	1667 0%	15698 1%	33287			
Target districts	1141274	20483	21080	154283 38	569017 63	280670 24				
Target Regions	1405510	20970	29036	190004 46	582545 65	386600 34	31876			
Mainland /b	3,032,869	32397	86371	410000 0	900000	115000 0	580401			

/ % of national cropped area /b Source FAOSTAT

63. Furthermore, the relative importance and performance of different species of cropped pulses have been estimated as follows (based on 2005-10 detailed data)

Table 5: Estimation of relative importance of different pulse spp in FS of targeted Regions

PULSES	Total area ha-2019	Area ha/HH	% national	Share (%) of spp in total area for pulses (by Region)				
				Beans	Pig. Peas	Gdnuts	Cowpeas	Gr Gram
TANGA	32597	0.09	2%	82%	2%	3%	10%	4%
PWANI	5223	0.03	0%	0%	100%	0%	0%	0%
MOROGORO	39434	0.10	3%	54%	21%	4%	21%	1%
DODOMA	103408	0.27	7%	20%	13%	58%	9%	1%
SINGIDA	20837	0.08	1%	31%	1%	25%	10%	34%

MANYARA	139780	0.53	9%	79%	14%	0%	2%	5%
TABORA	71250	0.17	5%	29%	1%	53%	14%	3%
SHINYANGA	75259	0.26	5%	19%	0%	56%	3%	22%
GEITA	46864	0.14	3%	62%	0%	27%	9%	2%
MWANZA	52667	0.10	4%	37%	0%	12%	18%	34%
Target Regions	587319	0.17	40%	46%	8%	28%	9%	9%
TOTAL MAINLAND	1473971		100%	61%	6%	18%	8%	8%

Beneficiary profiles

64. **Target groups.** The total number of direct AFDP beneficiary households is 260,000 corresponding to approximately 1,300,000 persons.

- 200,000 smallholder farming households (corresponding to 1,000,000 persons) accessing, using and maintaining improved seeds for preferred varieties of maize, sunflower and beans/pulses production in the target area.
- 1,000 small and medium scale seed producers (enterprises, cooperatives, individuals, etc.) and agro-dealers (enterprises, cooperatives, village sellers) participating in seed distribution and marketing (seed value chains), including youth and women. About 20 percent (or 200) will be crop farmers utilizing certified quality seeds.
- 18,000 artisanal fishers along the Indian Ocean coast of Tanzania and Zanzibar, who will be supported to use sustainable fishing practices and increase the value from artisanal production.
- 30,000 artisanal fish processors and traders who will be targeted by the investments in postharvest loss reduction and fish value chain development
- 6,000 small scale aquafarmers, with 80 percent or 4,800 also benefiting from certified seeds of maize, beans/pulses and sunflower;
- 15,000 smallholder seaweed producers and processors (80 percent women). About 40 percent (6000) will also benefit from interventions in sustainable fishing practices;
- 1,000 unemployed youths who will find employment opportunities in the fish processing plants and postharvest infrastructures (ice-making, cold storage, dryers)

65. **Poverty, human development, and demography.** With a low Human Development Index score of 0.528 in 2018²², Tanzania is currently ranked 159th out of 189 countries. The percentage of people living in poverty has declined from 34.4 percent in 2007 to 26.4 percent in 2018. Extreme poverty rates also fell from 12 to 8 percent between 2007 and 2018²³, but poverty is still high in absolute numbers due to high population growth. In 2018, about 14 million people lived below the national poverty line of TZS 49,320 (about USD 21) per adult equivalent per month. This number increases to 26 million (49 percent of the population) when considering the international poverty line of \$1.90 per person per day in 2018.

66. Key characteristics of poverty include: i) significantly higher in rural than urban areas with 31.3 percent of the rural population lived below the poverty line, compared to 15.8 percent for the urban areas; ii) vulnerability is also still high: many non-poor households are

²² UNDP 2019. Human Development Report 2019 available at <http://hdr.undp.org/sites/default/files/hdr2019.pdf>

²³ National Household Budget Survey 2017/18.

clustered just above the poverty line and are vulnerable to falling into poverty in case of a shock, (for every four Tanzanians who moved out of poverty, three fell back into it); (iii) fertility rates remain high, making it difficult to achieve demographic transition and investments in health and education, to reduce inter-generational transmission of poverty.

67. AFDP targeting mechanism will be based on Africa RISING²⁴ farm typology in Tanzania that was developed for testing and designing agricultural interventions that adequately address the needs of different types of smallholder farmers. This typology, based on a list of factors: productivity variables, economic variables, environmental variables, social variables and human capital variables. It distinguishes four types: (i) Type 1: Poor food insecure households; (ii) Type 2: Moderately food insecure households; (iii) Type 3: Food secure, semi-commercial households; and (iv) Type 4: Food secure, market oriented households. Food insecure households are defined as the ones in the bottom quartile of the wealth distribution, food secure households as the ones in the 2nd and 3rd quartile and highly endowed households as the ones in the top quartile of the asset distribution. Type 3 and 4 are the most productive groups, while type 2 shows mid-levels of productivity and type 1 is lagging far behind. • In terms of economic endowments, type 4 differentiates itself with a very strong performance, while the other groups are fairly close to each other at a lower level. More broadly, the four household types can be characterized as following:

68. **Type 1: Poor food insecure households.** These households can have very little land around their dwelling and few, productive assets. A significant proportion of these households are likely to be women-headed households with children under five years who are likely to have malnutrition. The number of dependents may be higher than average and include members who are vulnerable, adolescents, persons with HIV, persons with disabilities, children out of school. These households depend for their livelihoods on casual labour, trading groceries and other small trades. Most of these smallholder farmers often fall short of their monthly income needs and live at or below the poverty line. Coping mechanism include reliance on traditional safety nets such as borrowing from family, friends, SACCO savings and 'merry go rounds' where each person contributes a part of their daily earnings and each day a different person receives the sum collected on a revolving basis.

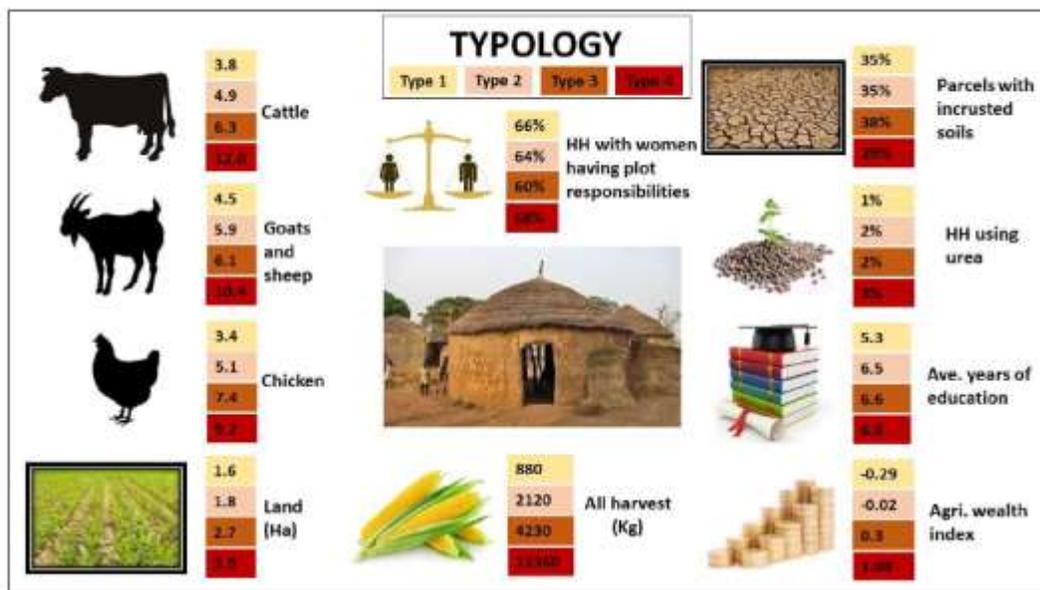
69. **Type 2: Moderately food insecure households.** Smallholder farmers in this category are involved in subsistence crop farming and fishing with low level of production. These smallholder farmers lack access quality seeds and other inputs to increase their production for consumption and to make their production market-oriented. These smallholder farmers own an average of ≤ 2 ha of land or one to two fish ponds and have no access to proper extension services and improved-quality seeds and inputs for market-oriented production. Most women and youth have no access to their own land. Still, despite their agricultural production, smallholder households often fall short of their monthly income needs. Most households live at or below the poverty line. Only a few smallholders are involved in farmer organizations; about 10 percent are a member of a planting, weeding, and harvesting group and 1 percent are part of a producers' group. In addition, apart from mobile money, very few have bank accounts or links to knowledge and advice. In addition, they generally do not have access to formal financial services with most relying on family income. They may be members of informal or financial organizations at village level, but they are usually reluctant to borrow due to limited business skills. This group will constitute about 45% of the programme beneficiaries.

²⁴ Sara Signorelli, Carlo Azzarri and Beliyou Haile 2016. Typology characterization of smallholder farmers in Africa RISING sites in Tanzania available at https://cgspace.cgiar.org/bitstream/handle/10568/83138/AR_farmer_typology_tanzania.pdf?sequence=1&isAllowed=y

70. **Type 3: Food secure, semi-commercial households.** Comprised of economically active/entrepreneurial small and medium holders requiring support for surplus production and entrepreneurship activities. These will include rural HHs already engaged in crop (seed), aquaculture and fish farming and production. These households consume what they grow, trade goods for other necessities, and sell their crops or fish for income. Specific opportunities and products will be developed to meet the interests and capacities of women and youth of different ages including support towards access to finance and land. This group will include existing SMSE agrodealers, rural aquaculture and fish entrepreneurs, fish and aquaculture smallholder farmers, those in fish and seaweed processing, storage, ice-making and marketing comprised of individuals wishing to engage in levels of the aquaculture and fisheries value chains for economic gain but require external support to do so.

71. **Type 4: Food secure, market oriented households.** This group, comprising of 5% of programme target include a better – off target. They have high asset ownership (large land above 3 Ha, high number of livestock types and units, high agriculture and non-agriculture index) and very good dwelling conditions. Beneficiaries in this group engage actively in seed, aquaculture or fish production with a market purpose. Specialized smallholder farmers may have some assets and/or are organized into formally established and legally registered operational and viable producers and/or processors cooperatives or organizations. These smallholder farmers may have a market-oriented approach but lacking entrepreneurial/management skills to farm as a business but have limited access to extension services, financial services and limited access to more commercial markets. These less vulnerable producers, are already engaged in a more entrepreneurial logic, will be supported through a combination of technical, business and financial capacity building combined with backward and forward market facilitation. This will be provided in the scope of innovative value chain arrangements that facilitate the participation of smallholders in commercial value chains.

Figure 3: Household typologies in Tanzania



72. The total outreach to indirect beneficiaries will include about 200,000 people benefiting along the seed and fish value chains.

73. **Targeting strategy.** The targeting mechanism will seek to ensure equitable participation in, and benefits from, Programme activities and opportunities for women, men, youth and other vulnerable groups. Direct targeting mechanisms will ensure the identification of key beneficiaries, based on set criteria and validation, participation of vulnerable groups in planning, implementation and evaluation, including female-headed and youth led households. AFDP targets to reach 50% women and 30% youth through its interventions. In addition, AFDP will promote the economic and social empowerment of male and female groups through social mobilization. The targeting strategy will include:

74. **Geographical targeting** will use a cluster approach to identify eligible villages, based on poverty data and climate change risk and vulnerability assessment. Criteria used will include: (i) rural poverty and vulnerability of local farming/cropping systems to (semi)arid agroecological conditions, including increased impact risks related to climate variability and change; (ii) potential for productivity, food security and HH income for target value chains and viable small and medium private sector actors and markets; (iii) mobilization and strengthening of existing farmer group and associations; (iv) use of national decentralized agricultural extension system in local communities in need of extension services and education in order to increase the productivity and resilience of their cropping systems and livelihoods.

75. **Direct targeting** mechanisms will ensure the identification of key beneficiaries, based on set criteria and validation, participation of vulnerable groups, including female-headed and youth led households. AFDP targets to reach 50% women and 30% youth through its interventions. AFDP will ensure programme interventions are inclusive and seek support on how best to address gender and age constraints in the value chains in order to support women and youth. In addition, AFDP will promote the economic and social empowerment of male and female groups through social mobilization and the use of Gender Action Learning System (GALS).

76. **Self-targeting** measures will ensure that Programme interventions respond to the needs and priorities of the target groups and especially women as seed production and marketing, fish catching and large-scale trading is mainly male-dominated. The selected productive activities along the aquaculture value chain will be suitable for all target groups, in particular women and youth considering their potential for processing and value-adding opportunities.

Gender, Youth , Nutrition and Social Inclusion strategy

77. AFDP will specifically target women and youth smallholder farmers as key producers, entrepreneurs and small-scale processors by providing them with agricultural/business knowledge, skills, and facilitating their access to labour saving machinery. AFDP gender and youth strategy will involve systematic identification of opportunities for their involvement in the seed and fish value chains. In each of the supported value chains, the entry points and opportunities available for women and youth will be identified and priority will be given to support the women and young people to take advantage of these opportunities. The inclusion of women and youth in the Programme will be further ensured through setting clear participation targets.

78. Considering the pivotal role that women play in farming and household economy, at least 50% of the Programme beneficiaries are expected to be women, who will be targeted as individual smallholder farmers, active members of farmer groups, as processors and traders. About 30% of the Programme-supported households are expected to be female headed households. AFDP will also set clear cooperatives and group governance guidelines

that aim to ensure meaningful participation of women and youth members in key decision-making positions in group committees.

79. The Social Inclusion strategy provides strategic guidance to AFDP staff to mainstream gender equality, youth empowerment, nutrition and social inclusion. To operationalise the strategy, an annual action plan will be developed and agreed at the beginning of each financial year. Activities under the action plan will be regularly assessed against this Strategy's objectives using a set of indicators. At the end of the financial year, the annual Gender Youth, Nutrition and Social Inclusion (GEYNSI) action plan will be evaluated with lessons learned taken into account to develop a new action plan for the next financial year. In addition, AFDP will monitor and integrate evaluation of the implementation of the GEYNSI strategy, at Mid-Term and End-Term evaluations.

80. The approaches will include:

- (i) Establishing targeting quotas for poorer community members who would otherwise not be reached; identification and provision of specific benefit packages that cater to the needs of each social group at different levels of the value chains.
- (ii) Ensuring that all activities at local level start with obtaining buy in from local structures, and specifically, support towards social inclusion. Specific issues to be highlighted in that process include:
 - Participatory socio economic, gender and youth analysis at community level at the start of the Programme or baseline
 - Agreed criteria for selection of beneficiaries who will receive different benefit packages promoting meaningful participation of youth and women in Programme and local governance processes
 - Mechanisms to ensure Programme information can be disseminated to ensure that women, men and young people and other vulnerable groups receive Programme information
 - Inclusion of all key groups in Programme related processes i.e. men and women of different socio-economic groups, gender and age
 - Participatory assessment of other common social risks and barriers identified in Programme design that could compromise their participation in Programme activities; and
 - Development of a Programme grievance mechanism for Programme beneficiaries know where to go for help and provide feedback on services as well as any challenges they face in participating in Programme activities
- iii) Participatory planning and monitoring throughout the lifetime of the Programme, monitoring intended and unintended changes in in the Programme implementation in relation to gender inequality, youth and social cohesion, and production of knowledge and sharing lessons learnt in the social inclusion aspects within the Programme and with stakeholders.
- iv) At institutional and Programme levels; Ensure
 - Equal opportunities policies and affirmative actions to achieve parity in employment of women, men and young people at the PCU and technical assistants hired for AFDP activities
 - Training of all Programme staff at national level, implementing agencies and relevant stakeholders on social analysis, as well as youth and gender transformative programming.
 - AFDP human resource policies and procedures are gender sensitive, attract young people, have zero tolerance to gender based violence and

- Sensitization of the PCU, implementing partners and collaborating partners (ILO, Ministries in charge of Labour in both mainland and Zanzibar) on the risks of child labour along the proposed value chains and potential mitigation actions;
- AFDP partners and associates uphold social inclusion principles through policies and mechanisms of operation.

81. **Gender equality and women empowerment.** Tanzania is positioned 150th out of 160 countries in the 2019 Gender Inequality Index²⁵. This Index as well as the Gender Development Index both show that women are disadvantaged in access to education, health services and economic opportunities. Tanzania has ratified key international- and regional human rights documents, including the Convention on the Elimination of all forms of Discrimination Against Women and the SADC Protocol on Gender and Development. At the domestic policy level there is the 'Vision 2025' that recognizes the importance of gender equality and the empowerment of women, and highlights gender mainstreaming and describes specific strategies on related education and on Gender-based Violence (GBV). Another commitment of the Government of Tanzania is the support for the wider participation of women in the government decision-making, through the formulation of Women and Gender Development Policy (WGDP) and the re-enforcement of the quota system for female representatives at the national parliamentarians and local councils.

82. However, despite the laws and policies, implementation challenges remain making women in Tanzania vulnerable in all aspect of their lives. The implementation of discriminatory laws and practice has also been reinforced by the dominant masculine norms and the discriminatory attitude toward women which still persist in Tanzanian society especially in rural areas for example girls can be married at age 15 if parents agree among others. GBV and forms such as 'sex for fish' among fishing communities is rampant in Tanzania and the Female Genital Mutilation is still practiced in certain part of the country²⁶. On representation, women represented 36% in the national parliament (126 out of total 350 parliamentarians) and 31% of cabinet ministers (10 out of total 32 ministers) and these numbers are well beyond the 30% quota that Tanzania's constitution allocates to female politicians (hereafter 'quota'). However, women participation at community and intra-household levels remains low especially in the rural areas.

83. Women play a crucial role in the agricultural sector, representing 52 percent of the labour force, but this notwithstanding the contribution of women in the rural Tanzanian economy is underestimated. The share of female landowners to total female agricultural population remains low at 27%, as compared to 73 % for male. Maize, beans and cotton are the main crops that both male and female agricultural works produce for home consumption, while their decision on whether to produce them as cash crops or as the food for home consumption also affects the share. Women are engaged more in subsistence farming. 90% of women (as compared to 60% for men) in agriculture are dependent on rain-fed harvesting, and there are less percent of women as compared to men who take advantage of improved seeds, fertilizers and pesticides, have access to the materials and implements for production, or afford farm labour. As for fishing, this has traditionally been considered as a man's job. Women have restricted access to productive assets (boats, equipment), but actually dominate different stages of the fisheries' value chains. Across Tanzania, women are vital to small-scale aquaculture Programmes.

84. The programme will support women through:

²⁵ UNDP 2019. Human Development Report 2019 available at <http://hdr.undp.org/sites/default/files/hdr2019.pdf>

²⁶ According to Tanzania DHS 39% of women age 15-49 reportedly experienced violence in the past.

- Economic empowerment for enhanced access to crops and fisheries-based production and value addition systems by encouraging young women into non-traditional aspects of the seed and fisheries value chains, access and control of productive resources, finance and services.
- Access to information, knowledge and extension services will be promoted through business skills training, and access to e-extension platforms such as through mobile phones. Women will receive 50 percent of the training in business skills. Thirty percent of the business skills training will be given to young women and men. In addition, young women and men will be selected and trained as business coaches (ToTs) from the wards and Districts. Business skills training will be delivered to the smallholder farmers groups through them. Five percent of the recipients of business skills training will be persons from marginalized groups persons with disability or persons with HIV.
- Balanced workloads due to increased resilient crop yields through use of labour and time-saving technologies such as solar dryers for *dagaa* and sea weed, irrigation technologies and energy saving cooking stoves, to encourage shifts towards equitable sharing of workload burden within the households.
- Support to women's voice in decision-making power at household and community level will be implemented through leadership trainings and mentorship of women in farmer associations and co-operatives and enforcing 50% representation of women in committees.
- Other gender related interventions such as awareness raising on issues related to prevention of early marriage and GBV, importance of adolescent girls' education, will be integrated through the GALS methodology.

85. **Gender Action and Learning System.** will be instrumental in creating awareness on gender and social relations amongst smallholder farmers and fishers both in groups and in farmer groups to empower women and men towards more balanced workloads, equitable decision making and benefits sharing. GALS tools will be used to have smallholder farmers and fishers create visual maps which make women and youth's engagement visible and helps groups develop a common inclusive and progressive vision. The GALS practitioners selected as GALS champions to train other community persons will be 60 per cent women and 40 per cent men. GALS exchange learning visits amongst groups will be encouraged to provide women with an opportunity to exchange and connect with other women across districts, dialogue with other key actors and enhance opportunities to learn from each and develop a collective voice and vision. Smallholder households will be the focus of the GALS intervention, encouraging females and males as partners to participate. At least 5 percent of these households will be very vulnerable households of persons belonging to marginalized tribes, persons with HIV or households with persons with disabilities.

86. ASDP II highlights the importance of equitable participation women, men and youth in agricultural development. To achieve this, the strategy aims to promote wide-ranged participation among women and young smallholder farmers into smallholder farmers' organizations, through extension and demonstrations. Women and youth can benefit in those processes, thereby strengthening their role in farm family decision making and opening opportunities for rural leadership positions including female headed households and women as lead smallholder farmers in demonstrations of modern science based agriculture.

87. Each government ministry and the secretariat established within regional- and district governments has designated Gender Focal Points (GFP) and is mandated to set up a gender committee. At the regional- and district level, where the community development staff are to undertake tasks related to gender equality and monitoring, the system needs strengthening

in form of appropriate training and budgets²⁷. In addition, the recently established Ministry of Health Community Development, Gender and Children (MHCDGC) is responsible for cross – sectoral collaboration on gender equality through the Gender Mainstreaming Working Group on Macro Policy (GMWGMP). GMWGMP successfully engaged in the MKUKUTA II implementation to make suggestions from gender perspective²⁸.

88. Youth empowerment through entrepreneurship and jobs. AFDP will encourage creation of jobs for young people through a market approach: AFDP will encourage participation of young people as seed producers, fish smallholder farmers, technicians, agri-input specialists, lead smallholder farmers, market information specialists to provide information to agro-traders, processors and other stakeholders in the value chains. The current population growth and the trends in post-harvest losses present an opportunity for young people to set-up post-harvest handling businesses that addresses the movement of agro-products and fish products to the market through innovative logistics, ice making and transportation system. Opportunities in value addition enhancing and re-packaging, of commodities into variety of products for the market. Young people will be encouraged to work as marketers linking smallholder farmers to secure markets for smallholder farmers' produce. On entrepreneurship, AFDP will support:

89. Capacity building on entrepreneurship and business development training, business skills and technical courses in seeds and fisheries equipping youth with tools and confidence to make sound financial decisions, in turn enabling them to manage financial services and helping them work towards mindset shifts will be key. Planned interventions will seek to enhance its capacity in FFS and youth lead smallholder farmers (ToTs), agri-business development (ToTs), nutrition-sensitive agriculture, value addition, cooperative development and marketing services by developing and implementing a national strategy for financial education in these value chains. Short trainings: Trainings and demonstrations can be carried in order to equip youth with practical skills to carry out sustainable crop farming, fishing or aquaculture practices. These can be organised at a communal level by help of local authorities or by institutions in form of field internships. Young men and women will also be trained as crop and fisheries extension workers, water quality monitors and fish feed formulators among others.

90. Access to finances –AFDP will explore youth sensitive financing modalities In order to address the challenges youth face in accessing finance and financial services. These will include encouraging lending to youth cooperatives and savings groups to reduce risks, enterprise loans, savings products and start-up lending with flexible guarantees to avoid collateral requirements. The programme will facilitate TADB to stimulate financial service providers to design appropriate financial products incentivize youth such as digital solutions to increase reach to rural areas while reducing risks and transaction costs. Such products may minimize age restrictions, be more flexible on identification and collateral requirements and know-your-customer requirements for youth-specific products.

91. Digital solutions – AFDP will leverage on TADB and the private sector to pilot and scale-up digital solutions that will positively impact rural young women and men. Through TADB, financial service providers and supporting players, will expand their business models to consider digital solutions for digital finance – for example using mobile money services to rural areas to increase access for rural youth. Consequently, other digital innovations will be considered to reduce the risks linked to weather dependence through access to information

²⁷ Ministry of Community Development, Gender and Children

²⁸ JICA 2016 Tanzania Gender Profile available at

https://www.jica.go.jp/english/our_work/thematic_issues/gender/background/c8h0vm0000anjq6-att/tanzania_2016.pdf

and rollout digital extension services making agriculture a more appealing activity for the youth.

Improving community nutrition and practices.

92. Building on IFAD's extensive portfolio of projects and tools on gender, social inclusion and nutrition, AFDP is designed within the framework of nutrition-sensitive investments²⁹ and will influence nutrition through the following pathways: (i) production of nutritious foods, including quality protein maize, iron rich beans and other pulses³⁰, sunflower, seaweed and fish species of high nutritive value (e.g. "dagaa"); (ii) promote household consumption of safe and nutritious food; (iii) support processing and marketing of fish and sunflower with labour saving technologies; (iv) providing opportunities for income diversification; and (iv) women economic empowerment to access more profitable markets and improved decision making.

93. In addition, the programme will integrate nutrition interventions across the programme components targeting the smallholder crop farmers, artisanal fishers, aquafarmers and fish traders (approximately 30% of total beneficiaries). The selection of districts, wards and villages to be targeted for improved nutrition will be informed by a detailed nutrition analysis to be undertaken at baseline. Considerations will be made to ensure districts with a mix of crops and fisheries interventions are selected based on vulnerability. The interventions will be customized to address the context specific challenges for nutrition and leverage on existing nutrition initiatives and potential collaborations. AFDP will apply the following nutrition pathways:

- (i) Increased food production for own consumption and local markets. This will include promotion of quality seeds of safe and nutritious varieties of maize and protein rich beans/pulses, sunflower, fish and seaweed, dissemination of agricultural practices/ technologies for increased production and productivity of nutritious food and increased year round availability of food for the households and in local markets.
- (ii) Promotion of integrated homestead food production for diet diversification and income generation; encouraging farmers to enhance pulse production and adopt kitchen gardens for fruits and vegetables. These will be rolled out through nutrition education modules integrated into the FFS, extension and other trainings or manuals.
- (iii) Reduction post-harvest losses, including training farmers for safe home storage, home processing and food preservation to increase shelf-life.
- (iv) Targeted nutrition education for household members and communities will be integrated through the programme interventions. Nutrition education for extension workers and integration of nutrition modules will be integrated in FFS, aquaculture field and business schools as well in training of fish cooperative societies. Nutrition education will include practical demonstrations through food fairs, community kitchens and cooking classes for nutrient retention and promotion of healthy diets and promotion of hygiene and good health practices.

²⁹ FAO. 2015. Key Recommendations for Improving Nutrition through Agriculture and Food Systems. Available at: www.fao.org/3/a-i4922e.pdf

³⁰ Beans and/or other pulses depending on the agro-ecological conditions in the target area where pigeon peas, cowpeas, green gram, groundnuts, etc. are most popular leguminous crops.

- (v) Social behaviour change communication campaigns will seek demystify socio cultural practices and myths associated with foods and encourage adoption of nutritious foods especially amongst vulnerable populations such as poor and women-headed households, pregnant and breastfeeding mothers, households with children under 5 years and adolescents girls.

94. The Programme will leverage ongoing nutrition and community development projects and interventions as well as existing structures at the national and district levels. The PMU will oversee nutrition interventions through a nutrition expert and work closely District Community Development/Nutrition Officers will inform the design of nutrition interventions with their knowledge of the current nutrition initiatives, local customs, practices and challenges. The programme will support design and rollout of training of trainers in nutrition to raise group mentors targeting women and youth in each district. They will in turn disseminate the training to the smallholder households and the smallholder famer groups. The training will include food demonstrations or community kitchens (where groups of farmers and fishers come together to learn about nutrition, prepare and share nutritious foods). During the demonstration, key nutritional messages will be explained and participants taste the cooked food and evaluate acceptability.

95. Building on IFAD's extensive portfolio of projects and tools on gender, social inclusion and nutrition, AFDP is designed within the framework of nutrition-sensitive investments³¹ and will influence nutrition through the following pathways: (i) production of nutritious foods, including quality protein maize, iron rich beans and other pulses³², sunflower, seaweed and fish species of high nutritive value (e.g. "dagaa"); (ii) promote household consumption of safe and nutritious food; (iii) support processing and marketing of fish and sunflower with labour saving technologies; (iv) providing opportunities for income diversification; and (iv) women economic empowerment to access more profitable markets and improved decision making.

96. In addition, the programme will integrate nutrition interventions across the programme components targeting approximately 30 percent of total beneficiaries: smallholder crop farmers, artisanal fishers, aquafarmers and fish traders. The selection of districts, wards and villages to be targeted for improved nutrition interventions will be informed by a detailed nutrition analysis to be undertaken at baseline.

97. The Programme will leverage ongoing nutrition and community development projects and interventions as well as existing structures at the district level. These include District Community Development/Nutrition Officers who will inform the design with their knowledge of the current nutrition initiatives, local customs and challenges. The programme will support design and rollout of training of trainers in nutrition to raise group mentors and their supervisors in each district. They will in turn disseminate the training to the smallholder households and the smallholder famer groups. The training will include food demonstrations or community kitchens (where groups of fishers come together to learn about nutrition, prepare and share nutritious foods). During the demonstration, key nutritional messages will be explained and participants taste the cooked food and evaluate acceptability. Recipes can be modified and refined in line with community and household capacities and needs.

³¹ FAO. 2015. Key Recommendations for Improving Nutrition through Agriculture and Food Systems. Available at: www.fao.org/3/a-i4922e.pdf

³² Beans and/or other pulses depending on the agro-ecological conditions in the target area where pigeon peas, cowpeas, green gram, groundnuts, etc. are most popular leguminous crops.

IV. PROGRAMME DESCRIPTION: COMPONENTS AND ACTIVITIES

98. AFDP is designed as an integrated programme, consolidating multiple ASDP II interventions into a single programme, with a related set of outcomes. It is to be recalled that the Programme directly contributes to two ASDP II priority programme areas [programme area 2 - Enhanced agricultural productivity and profitability and programme area 3 -Rural commercialization and value addition]. As such, AFDP is structured around two mutually reinforcing and interlinked components and in doing so, it mirrors ASDP II priority programme areas.

99. The two AFDP components are: Component 1: Enhanced agricultural productivity of crop seeds and fisheries; and Component 2: Improved market access, value addition and private sector development. A third component focuses on Programme Management and Coordination. The expected outcome of component 1 is "Increased climate-resilient productivity and production from crop seed and fish value chains. It will be achieved by focusing investments in two sub-components, namely (i) crop seed systems development and (ii) fisheries and aquaculture development. The expected outcome of Component 2 is "Improved marketing and value addition of crop seeds and fish products". It will be achieved by combining investments in crop seed business development and fish market development and value addition. Support provided under this component will also include innovative modalities to finance technical assistance and productive investments to support production, marketing, and processing activities.

100. However, in order to facilitate effective implementation, the subcomponents are structured around seed value chains and fisheries and aquaculture.

A. CROP SEED VALUE CHAINS DEVELOPMENT

101. In Tanzania, the use of improved seeds (especially maize hybrids) has increased dramatically since 2008, primarily pushed by the national agricultural input voucher scheme (NAIVS/AFSP, 2008-13), targeted on maize and rice in the high potential highland areas, while more vulnerable agro-ecological zones and companion crops remained neglected. The design of AFDP takes into consideration key lessons and conclusions from IFAD's experience on Supporting Smallholder Seed Systems³³, including: (i) better understanding of seed value chain, stakeholders' needs and markets; (ii) focusing equally on seed supply as well as demand and use; (iii) ensuring longer-term support to be able to produce sufficient quantities of early generation seed (breeder, foundation and registered); (v) investing in irrigation systems to avoid poor quality during seed production due to drought; and (vi) strengthening national seed certification agencies.

102. **Crop seed systems development** This sub-component's objectives are to ensure suitable supply and access to quality seed of adapted productive varieties, to feed smallholder innovation use (re. sub-component 2.1) for more productive and climate-resilient food and market production systems for selected crop value chains in the target areas. To strengthen more efficient seed systems with adequate and sustainable funding, the programme will contribute to strengthen key functions of seed value chains (pre-basic, basic and certified seed classes) to enable a sustainable annual offer of quality certified seeds for Open-Pollinated Variety (OPV) seeds adapted to the demand of the target area. Major outcomes are (see logframe).

103. **Phasing and sequencing:** The Programme will use a phased approach by building and consolidating impacts in selected regions and districts (clusters) in the drier central

³³ IFAD 2018. Supporting smallholder seed systems.
https://www.ifad.org/documents/38714170/41211727/Seeds_HTDN.pdf/5948954a-d451-438d-a961-ecb37d0998eb

Tanzanian AEZ, while promoting a gradual demand-driven scaling-up. Seed production and distribution (agro-dealer) support activities will cover 40 districts in ten of the 11 selected regions from the beginning on, with gradual activity intensification as seed production and availability increase. Agricultural extension activities, to promote quality seed use and CSA practices, will initially target 1-2 selected districts within each targeted region, and scale-up gradually over the implementation period to reach all targeted districts from implementation Year 4 on. The final choice of district sequencing will be done at the inception stage through stakeholder consultative processes.

Seed systems & strategy.

104. Farm productivity and food security remains one of the great challenges especially in more vulnerable AEZ. In the face of climate change and population growth, significant progress towards long-term, sustainable solutions are required for increased productivity and adoption of modern resilient varieties of drought tolerant crops such as OPV maize, sunflower, beans and other pulses combined with climate smart practices. Many new varieties adapted to the target AEZ and FS have been released, but are either not or little commercialized: often, smallholder farmers never had access to the seed as it is not multiplied and disseminated at significant volumes, particularly for more vulnerable FS. Seed companies offering hybrid maize seed has significantly expanded over the past 10 years especially for high potential areas: however, there is increasing testimony from both public and private sector stakeholders that smallholder farmers will buy high quality seed of modern varieties (mainly OPV) resilient to CC and CV and overall adapted to less favorable conditions. To overcome this challenge, formal sector public and private seed production entities have been encouraged to produce seed while QDS production has also been supported in some countries, although supply dwindles in the absence of Programme funding.

105. The best way to improve smallholder farmers' sustained access to a continuous flow of quality seed of modern resilient varieties for the target crops is to focus public investment efforts on strengthening gradually a professional private/cooperative more competitive market smart seed production and distribution sector, facilitation PPP. Key areas of investment focus range from ensuring reliable supply of high quality EGS, to availing access to technologies and working capital to seed companies/cooperatives, to developing information systems required to assess seed offer and demand, and coordinate donor and market actor efforts for driving improved farmer access to innovation adoption and use of improved varieties and quality seeds for the target crops.

106. Opportunities for priority seed sector interventions for the target AEZ and prioritized crops, are identified in the different steps of the seed value chain, including: (i) seed development policies, strategies and stakeholder concertation; (ii) plant genetic resource conservation and registration of popular landraces; (iii) performance-based variety development and participatory screening in response to local demand; (iv) producing early generation seed (breeder, pre-basic and basic); (v) certified seed multiplication and bulking-up (certified and/or QDS seed production) by professional private and farmer cooperative sector; (vi) strengthening seed quality control and certification, including decentralization of seed crop inspections and private sector involvement; (vii) supporting diffusion of most appropriate production and post-harvest technologies, demonstrations, seed conservation and quality maintenance advisory services; and (viii) strengthening the marketing and seed distribution system, including market information systems, PPPs through contract farming and other means, seed fairs, seed business support.

107. GoT proposal is to strengthen the national seed system targeting on maize, sunflower and bean value chains. Current maize and beans seed systems are primarily covering high potential areas mainly the southern, western and northern highlands, benefiting from more advantageous agro-ecological and climatic conditions. Therefore, the current support will

concentrate on maize and sunflower based cropping systems in the more vulnerable/drier AEZ of the 'Central Tanzanian Corridor' where the selected crops form the backbone of cropping systems and household SAN and marketing revenues. AFDP will therefore complement on-going seed business development by concentrating its support on key VCs of the more vulnerable cropping systems in the central Tanzanian corridor, whose coverage remains marginal in current seed systems.

108. The aim is to achieve increased quality seed availability/offer and demand promotion, towards reaching optimal use of improved varieties and high quality seed for higher productivity, product quality (i.e. protein and oil³⁴ ratio) and resilience of local farming systems in the target area. Besides maize and sunflower, the proposed support will also cover beans and other pulses (pigeon pea, cowpea, groundnuts and green gram) in line with local agroecological condition to ensure improved SAN, farming systems sustainability and resilience, but also income generation (large scale off-takers)³⁵ with preferential varieties. Furthermore, besides quality seeds, adapted crop rotations (cereals, pulses and other) and adapted CSA practices, will be promoted to further increase resilience to climate variability and change, to ensure improved sustainability of local cropping systems.

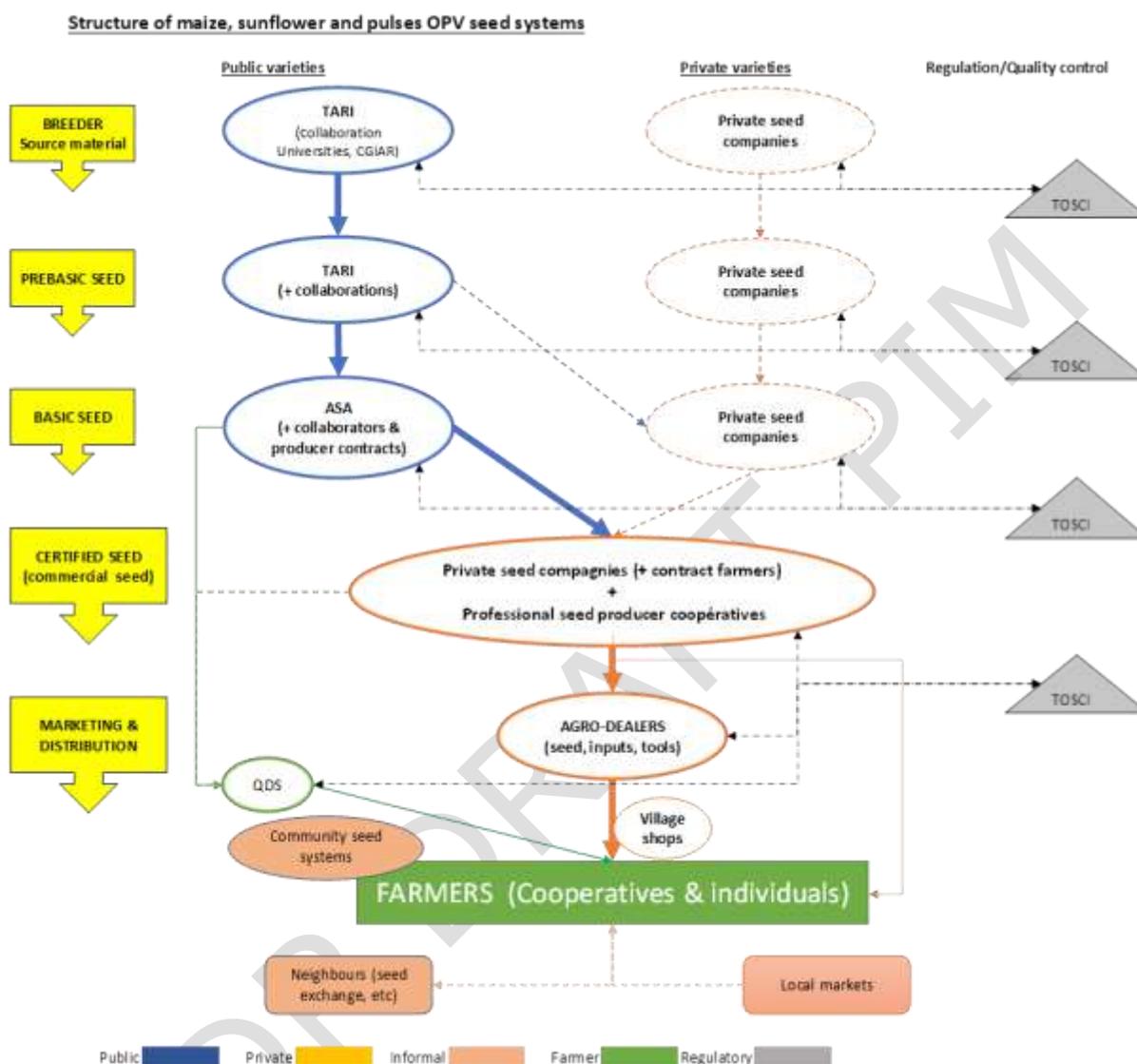
109. Open Pollinated Varieties (OPV) – Hybrid. Although there are new adapted hybrid varieties (drought tolerant maize and high olein sunflower) emerging in targeted AEZ, the large majority of currently available (and registered) improved varieties adapted to the target zone, are OPVs. However, despite the period of catalogue registration for new varieties (2 years DUS and 1 year VCU testing)³⁶, it is expected that demand/offer for public hybrid varieties will gradually increase (especially in larger scale farming), to reach potential levels of about 20% (Maize) and 10% (sunflower- national varieties) of the total annual seed use, not taking in account international private hybrid varieties produced/imported by seed companies. Considering the higher potential but also higher risk related to hybrid varieties, their use will mainly be concentrated in large to medium scale farming enterprises. The low interest of the private sector in promoting improved public OPV varieties, requires initial support from the public sector in producing EGS for these varieties, while building-up capacities for PPP especially with local farmer/producer organizations for decentralized production of quality certified and QDS seeds for preferred varieties. The overall structure of cereal/pulses seed systems is structured as follows:

³⁴ In the specific case of sunflower, it is also very important to highlight the oil production factor. MUVI experience shows that the sunflower VC in Tanzania is driven by oil extractors who are always looking for more performing varieties in terms of oil ratio. There is growing demand for hybrid sunflower seeds capable of giving higher quantities of crude oil per kg (+20% and above).

³⁵ Pulses like pigeon pea, cowpea and green grams are grown almost exclusively for income generation with large off-takers (Tamagrasai, ETG, HS IMPEX, RV Exports, Fida Hussein Co., Prayosa International, Smart Logisics, Mohamed Ent., etc.) (see MUVI experience with sesame)

³⁶ Value for Cultivation and Use (VCU) of Agricultural Crops and Distinctness, Uniformity and Stability (DUS)

Figure 3: Structure of maize, sunflower and pulses seed systems



SUB-COMPONENT 1.1. ENHANCED PRODUCTIVITY OF CROP SEEDS

National seed demand and supply coordination.

110. The Programme will provide targeted support to the Ministry of Agriculture (MoA) and the Tanzania Seed Traders Association (TASTA) to enhance: (i) continued update for future seed demand and supply planning (adjustment of national seed road map and performance monitoring and evaluation), while integrating specific seed requirements of target area (see local seed fora sc 2.1); (ii) broaden user awareness/information on quality seed use and varieties adapted to agroecological zones and consumer/market preferences; (iii) strengthen seed production and distribution networks (including PPs) driven by market and smallholder farmer needs (iv) streamline partner functions, follow-up and propose policy innovations (fight counterfeit seeds), facilitate access to adapted financial products and services, etc.) facilitate seed producers/cooperatives access to adapted technical information and financial services, etc., contributing towards sustainable seed systems.

111. Under the coordination of the MoA and TASTA, AFDP will: (i) organize multi-stakeholder national seed sector fora and technical meetings (1 each per year), involving farmer organizations and representatives of seed production and distribution enterprises/cooperatives for the development of sustainable seed systems in Tanzania (planning, coordinating and monitoring of seed production, supply and sales by different stakeholders); (ii) facilitate the development of a digital seed information platform and specialized digital tools (specialized technical support), to facilitate users access to updated information on seed availability and access; and (iii) provide complementary operational facilities (transport, communication and coordination to MoA seed unit to enhance technical and information support for decentralized entities in the regions and districts. These activities will be coordinated and implemented to complement on-going and planned actions in the sector (AGRA, GoT)

Innovation development and Early Generation Seed production.

112. AFDP will provide targeted support to Tanzania Agricultural Research Institute (TARI) for adaptive research and targeted breeding/selection programmes towards: (i) developing productive and climate-risk resilient varieties for the arid and semi-arid agro-ecological zone; and (ii) supply of Early Generation Seed (EGS), including maintenance/purification of breeder lines and the production of pre-basic seeds to meet the future demand (varieties and quantities)³⁷ of seed multiplication companies and smallholder farmers in the target area for maize, sunflower and beans/pulses. Special attention will be given to participative selection of improved varieties (mainly OPV but also adapted resilient hybrids³⁸) adapted to target AEZ and vulnerable smallholder farmers, prioritizing traits such as high and resilient productivity/yields, including drought tolerance, improved nutrient composition and consumer acceptance, disease and pest resistance and adaptation to local edaphic and climate variability and change conditions.

113. The annual effective requirement of pre-basic seed (Year n-2) for the target AEZ has been estimated as follows:

Table 1: Dashboard for pre-basic seed production targeting the AEZ of Tanzanian Central Corridor (in tons/annum)

Pre-Basic seed (to)	2018	2019	Year 0	Year 1	Year 2	Year 3	Year 4	Year5	Year 6
Maize OPV	0.1	0.3	1.2	1.4	1.9	2.5	3.3	2.9	3.4
Sunflower	0.1	0.2	0.5	0.6	0.8	1.0	1.3	1.7	2.0
Beans	0.8	1.0	2.1	2.5	3.3	4.4	5.9	6.9	8.1
Other pulses	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.7	0.8
Total (tons)	1.0	1.6	4.0	4.7	6.3	8.4	11	12	14

NB: Production facilities and budgets are provided for a production of pre-basic corresponding to 150% (reserve = 50%) of effectively used quantities of pre-basic seed to integrate changes in preferred varieties but also production failures.

114. As a means of improving TARI performance and outcomes, AFDP will support investment in: (i) upgrading facilities for EGS (breeder and pre-basic seed), including irrigation facilities (2 pivot irrigation systems for a total of 25 ha), farm and seed post-harvest equipment, seed storage facilities, scientific/laboratory equipment, field vehicles for research

³⁷ Over the past 5 years about 60 new varieties were released and registered in the national seed catalogue for the targeted value chains, including 6 sunflower, 42 maize, 3 soya and 10 beans varieties (see list in Appendix 1)

³⁸ Considering the risky production conditions in the target area specific hybrids are expected to reach a farmer use level of about 15% towards the end of the programme, mainly in the pocket areas with higher potential.

in TARI Ilonga/Kilosa (maize and sunflower) and Seliani/Arusha (maize and beans/pulses); (ii) strengthening institutional capacity and technical expertise in maize, sunflower and bean/pulses varietal improvement and innovative production practices (i.e. CSA), including long (4 PhD) and specialized short term training; (iii) research costs for strategic breeding and participative varietal selection activities; (iv) enhancing scientific collaboration with regional and international knowledge centers, especially in germplasm access and market-oriented seed systems development; (v) promotion and awareness (pre-vulgarization) of improved varieties and technologies; and (vi) strengthening emerging partnerships between TARI and private seed producers/companies, including for variety licensing.

Table 8: Varieties Released in Tanzania for 2015/16 – 2019/2020

Crop		Name of Variety
Sunflower	2019/20	RARI-NA2019, TARI-ILO2019
	2015/2016	NSFH 36, NSFH 145, AGUARA 4, HYSUN 33
Maize	2019/20	TARI 6305, TARI ZH 615ST
	2018/2019	WE5135, WE5141, WE7118, WE7133, EAS 5019, AMH500, AMH501, SY6444, SY 5344
	2017/2018	TH501, SC419, DK 777
	2016/2017	SY 514, SY 624, SY 634, AGRISEED H351, AGRISEED H352, MAMSH457, MAMSH458 MERU VAH 517, MERU VAH 519, TH 617, TH 619
	2015/2016	Selian H215, WE4106, WE4102, WE4110, WEMA4114, WE4115, WE4112, T104, T105, NATA H401, NATA K 8, Krishna Hybrid-2, Krishna Hybrid-1, MERU LISHE 503, MERU LISHE 511, IF 430, IF 650
Soya	2018/2019	SC Semeki, SC Signal, SC Saxon
Beans	2017/2018	SELIAN 09, SELIAN 10, SELIAN 11, SELIAN 12, SELIAN 13, SELIAN 14, UYOLE 17, UYOLE 18
	2016/2017	Uyole Nyeupe, Uyole 16
Cashew	2016/2017	TDC1, TDC 2, TDC 3, TDC 4, TDC 7, TDC8, TDC9, TDC 10, TDC 12, TDC 13, TDC14, TDC15, TDC 16, TDC 22, TDC 23, TDC24

Basic seed multiplication

115. AFDP will support the Agricultural Seed Agency (ASA)³⁹–to play its relay role in high quality basic seed multiplication for preferred maize, sunflower and beans/pulses varieties. This step will use TARI supplied pre-basic material (mainly OPV) adapted to cropping systems of the target zone to feed the next step of further multiplication in the subsequent year (see activity 1.1.4) towards responding to the demand of the farming community for certified seeds in the target area. The annual effective requirement of basic seed (Year n-1) for the target AEZ has been estimated as follows:

Table 9: Dashboard for basic seed production targeting the AEZ of the Tanzanian Central Corridor (in tons/annum)

Basic seed (to)	2018	2019	Year 0	Year 1	Year 2	Year 3	Year 4	Year5	Year 6
Maize OPV		6	20	54	63	84	113	150	131

³⁹ ASA plays two key roles in the national seed system, including: (i) Basic seed multiplication for public varieties (TARI breeding) and (ii) promote increased private sector participation in the seed industry development through establishment of public-private partnerships or joint ventures in seed production and distribution (see ASA involvement in activity 1.1.4). Although yet exceptional, private seed companies could acquire multiplication and distribution rights on public varieties against payment of royalties.

Sunflower		5	12	22	25	34	45	60	78
Beans		13	22	36	42	56	75	100	117
Other pulses		1	3	6	7	9	13	17	17
Total (tons)		25	57	117	138	184	245	327	344

Note: the Programme is planned for 6 years: seed produced in Y_n will be used in Y_{n+1} by smallholder farmers. Gradual inclusion of hybrids in seed multiplication to reach about 15% of total seed produced by 2025/26. NB: Production facilities and budgets are provided for the production of basic seed of 120% (reserve = 20%) of effectively used quantities of pre-basic seed to integrate changes in preferred varieties but also production failures.

116. As a means of improving ASA performance and sustainable production of basic seeds (in response to demand), AFDP will support targeted investment for strengthening physical, technical and management capacities towards building sustainable seed systems, including: (i) securing annual basic seed production by upgrading/completing of irrigation infrastructures 40 for not exceeding 100 ha each in ASA farms at Msimba (Kilosa/Morogoro) and Kilimi (Nzenga); (ii) construction and/or upgrading of selected seed farm work facilities (seed stores, dry shed, garage facilities, farm offices, field residential and training facilities); (iii) renewing of targeted field production equipment (adapted implements for land preparation, seeding, plant protection and harvesting); (iv) supplying required seed processing treatment plant at both farms; (v) transport equipment for field supervision and seed transport; and (vi) capacity strengthening in seed production and treatment, business development and monitoring and evaluation.

117. Further to investments, AFDP will allow ASA to build running/operational funds to sustainably operate basic seed production in response of private /cooperative certified seed producer demand (in quantities and quality – varieties). Based on the production of 120% of effective needs (including a 20% reserve for risks related to production failure and varietal changes) the annual ASA cash flow for constant basic seed production will theoretically be positive from the second year on, but main costs are met in Y_n while sales are done at the beginning of Y_{n+1}. Therefore, to enable production growth of basic seeds and meet sale risks for ASA, AFDP will subsidize 50% and 25% of production cost increases for basic seeds cash flow respectively in Y1 and Y2, while from Y3 on, basic seed sales will cover annual production cost requirements.

Table 10. ASA investment (phasing)

YEAR	ASA – MSIMBA SEED FARMS	ASA- KILIMI SEED FARM
Y1	<ul style="list-style-type: none"> i. Renovation of 2 field trainers/trainees residents at Msimba seed farm ii. Capacity strengthens in business development model iii. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers iv. Supervise and monitoring activities will conducted in the farms 	<ul style="list-style-type: none"> i. Construction of warehouse at Kilimi seed farm ii. Constructions of farm office and field trainer’s room at Kilimi seed farm iii. Construction of 2 field residential houses for agriculture officers at Kilimi iv. Capacity strengthens in business development model v. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers vi. Supervise and monitor activities conducted in the farms
Y2	<ul style="list-style-type: none"> i. Construction of 100 ha irrigation infrastructure at Msimba seed farm 	<ul style="list-style-type: none"> i. Construction of 50 ha irrigation infrastructure at Kilimi seed farm

⁴⁰ See required technical studies for sustainable water availability and safeguard requirements in Appendix 1.

	<ul style="list-style-type: none"> ii. Construction of dry shed at Msimba seed Farm iii. Renovation of 2field trainers/trainees residents and one training room at Msimba seed farm iv. Procurement and installment of processing plant v. Procurement of farm implements (Tractor, Planter, Precision harrow, tractor trailer, plough) vi. Procurement of leveling grader vii. Procurement of Maize Sheller viii. Procurement of Sunflower seed combine Harvester ix. Procurement of transport facilities (2 motorcycle, 2 distribution Vehicle, One Field supervision car) x. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers xi. Supervise and monitor activities conducted in the farms 	<ul style="list-style-type: none"> ii. Construction of dry shed at Kilimi iii. Construction of 2field residential for agriculture officers at Kilimi iv. Procurement and installment of processing plant v. Procurement of farm implements (Tractor, Planter, Precision harrow, tractor trailer, plough) vi. Procurement of Maize Sheller vii. Procurement of Sunflower seed combine harvester viii. Procurement of transport facilities (2 motorcycle, 2 distribution Vehicle, One Field supervision car) ix. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers x. Supervise and monitor activities conducted in the farms
Y3	<ul style="list-style-type: none"> i. Procurement Accessories of Agricultural Mechanical Workshop (compressor machine, lathe machine, drilling machine, Generators, toolboxes, cutting machine, welding machine, grinding machine, bending machine Gas Cylinders) ii. Rehabilitation of the mechanical workshop, office, stores iii. Purchase of fuel pump iv. Maintenance of fuel storage tanks v. Rehabilitation of fuel powerhouse vi. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS). Producers and agrodealers vii. Supervision, monitoring and evaluation of activities of the Programmes 	<ul style="list-style-type: none"> i. Construction of 50 ha irrigation infrastructure at Kilimi seed farm ii. Construction of dry shed iii. Procurement Accessories of Agricultural Mechanical Workshop (compressor machine, lathe machine, drilling machine, Generators, toolboxes, cutting machine, welding machine, grinding machine, bending machine Gas Cylinders) iv. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers v. Supervision, monitoring and evaluation of activities of the Programmes
Y4	<ul style="list-style-type: none"> i. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers ii. Supervision, monitoring and evaluation of activities of the Programmes 	<ul style="list-style-type: none"> i. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers ii. Supervision, monitoring and evaluation of activities of the Programmes
Y5	<ul style="list-style-type: none"> i. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers ii. Supervision, monitoring and evaluation of activities of the Programmes 	<ul style="list-style-type: none"> i. Capacity strengthen in seed production technologies to ASA Staff, Quality Declared Seed (QDS) Producers and Agro dealers ii. Supervision, monitoring and evaluation of activities of the Programmes

Source ASA, 2020

Bulking-up certified seed.

118. The next step of the seed value chain is the bulking-up of basic seed (produced mainly by ASA in activity 1.1.3) to avail certified seed for distribution/sale to users in the target area and respond to local producer's needs (renewed every 3 years)

119. Overall progression of certified seed production. Based on current production levels, the production levels of different seed classes will progressively increase in quantities (increase of 5% in Y1, 15% in Y2 and 25% in following years) to reach the targeted annual seed production levels for certified (Year n), basic (Year n-1) and pre-basic seed (Year n-2). Overall, certified seed availability for the target area is expected to reach a sustainable annual certified seed production levels of 7500 MT maize, 3000 MT sunflower, 2000MT beans and 500MT pulses by 2025. Simultaneous to availed seed quantities, proposed varieties will adapt gradually to smallholder preferences for food, adaptation to local farming systems, and market requirements (including 10-15% for hybrid varieties). The effective growing annual requirements of certified seed for the target AEZ has been estimated as follows:

Table 11: Dashboard for certified seed production targeting the AEZ of the Tanzanian Central Corridor (in tons/annum)

<i>Progression</i>			5%	15%	25%	25%	25%	25%	
Certified seed (to)	2018	2019	<i>Year 0</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year5</i>	<i>Year 6</i>
Maize OPV			600	1250	2689	3164	4219	5625	7500
Sunflower /a			350	700	1076	1266	1688	2250	3000
Beans			400	600	717	844	1125	1500	2000
Other pulses			50	75	179	211	281	375	500
Total (tons)			1400	2625	4662	5484	7313	9750	13000

Note: the Programme is planned for 6 years: seed produced in Yn will be used in Yn+1 by smallholder farmers. Gradual inclusion of hybrids in seed multiplication to reach about 10% (sunflower) and 15% (Maize) of total seed produced for national varieties by 2025/26 (imports of varieties by international seed companies excluded)

120. Certified seed production is a shared public-private function between ASA and professional seed producers. In line with its official functions, ASA will play a double role of facilitating the gradual development of the private seed sector, but also produce certified seed production to ensure from the beginning-on the availability of a minimum level of certified seed to overcome the expected limited initial private seed production. More specifically, besides initiating certified seed production of demanded public varieties, ASA key complementary function is to promote the gradual emergence of private sector interest in certified seed production for species and regions (such as the more vulnerable Central Tanzanian Corridor) for which the private seed sector shows currently marginal interest, in terms of adapted resilient varieties and required seed quantities.

121. Within this framework, basic seed of adapted public varieties (produced under activity 1.1.3) will be further multiplied by ASA and professional seed producers to allow for sustainable smallholder farmers access to quality certified seed at an affordable price. However, given the limited capacity and current involvement of the private seed sector in the target area⁴¹, the programme will support strengthening ASA capacity for initial minimal level production for certified seeds, while simultaneously promoting the gradual emergence and growth of small and medium-scale professional production units for certified and quality declared seeds (private seed companies, cooperatives, individual producers). Furthermore, the technical and management capacities of the private/cooperative seed sector will be

⁴¹ A first list of private seed producers (45) in target area is provided in Appendix 1 (Source TOSCI) but further analysis of their respective capacities and needs will be required. Current total production capacity to be detailed – in the range of several 100 ha)

gradually strengthened to enable an adapted response to the growing seed market for maize, sunflower and beans/pulses in the target zone.

122. Taking in account the growing total requirements for certified seeds in the target area (see table 8) and the current involvement of ASA and the private seed sector, the progression of share of certified seed production towards sustainable seed business has been Programmed as follows over the programme period:

Table 12: Maize, sunflower and beans/pulses certified seed production for the Central Tanzanian corridor AEZ.

Overall Progression		5%	15%	25%	25%	25%	25%
Certified seed (to)	Year 0	Year 1	Year 2	Year 3	Year 4	Year5	Year 6
Total certified seed (tons) for all spp.	168	866	4662	5484	7313	9750	13000
Private seed production (tons) all spp.	12%	33%	2000	3500	5500	7750	11000
	1232	1759	43%	64%	75%	79%	85%
ASA contribution (tons) - all spp.	88%	67%	2662	1984	1813	2000	2000
	168	866	57%	36%	25%	21%	15%

123. Considering its current high involvement level for improved seed currently used in the target area (about 90% of sold improved seeds but less than 5% of actual seed requirements), ASA production of certified seed for the target zone (3 VC combined) is expected to reach a maximum level of about 2500 tons in Y2 while maintaining an average level of about 2000 tons/year afterwards. Simultaneously, private seed producers will gradually increase their production to reach in Y6 about 85% of expected seed market demand in the target zone.

124. To this end, AFDP will: (i) provide complementary operational means to allow for ASA to rapidly reach a minimum level of about 2000 t of certified seed for the 3 VC in the target area; and (ii) promote PPPs between ASA and professional seed producers for increased private/cooperative sector involvement in the certified seed industry development in the target area.

125. ASA production share/contribution to bulking-up certified seed (minimum level). ASA will increase its production of certified seeds mainly on its owned facilities, but also by contract production with private seed professionals. Besides facilities and equipment provided under this programme, AFDP will provide additional operational means (matching grants) to ensure increased production capacities and gradual sustainability of ASA certified seed production operations for selected value chains in targeted areas. On a results-based approach, ASDP will: (i) strengthening ASA technical and management capacities; and (ii) reduce ASA financial risk, by subsidizing supplementary operating costs related to additional annual certified seed productions expected (see respective ASA outputs in Table 9). Subsidies (matching grants) would mainly cover inputs and support services involved in additional annual operational costs for certified seed production, at a decreasing rate from 75% in Y1 to 10% in Y5. This approach allows for strengthening sustainability of self-financing of ASA certified seed operations at the expected level (about 2000 tons in 2025).

126. Contribution to strengthening sustainable development of a professional seed sector (private and farmer cooperatives). Besides its contribution share to certified seed production, ASA will facilitate and promote the gradual development of a professional private seed sector. To this end, AFDP will support partnerships and capacity building towards gradual development of a sustainable and professional private seed industry for certified seed

production in response to demand of certified seeds for targeted priority crops in the target area. This will involve a large range of partners including individuals, small and medium enterprises, and specialized farmer cooperatives, specialized producer associations currently involved in certified and QDS seed production, but also newcomer in the seed business, especially young entrepreneurs. Professional seed producers/cooperatives/ networks will be registered as seed producers, use high quality basic seed produced on ASA farms, and undergo seed quality control and certification process (by TOSCI) in line with official seed production protocols for certified and/or QDS seeds

127. AFDP will support ASA to facilitate innovative productive PPPs in close collaboration with TASTA, towards increased private sector participation in the seed industry development by : (i) consolidating knowledge on current and potential partners involved in the seed sector of the target area and their specific capacities and needs; (ii) providing technical assistance (international and national) to consolidate and adjust the technical process and the business plan of scaling-up the seed systems for maize, sunflower and pulses for the target area and strengthening ASA technical and business capacities; (iii) promoting temporary joint ventures for contract production and bulking-up of certified seeds with specialized professional seed producers and farmer seed cooperatives; (iv) providing technical support and management capacity strengthening for local seed producers (especially youth managed SME, seed farmer cooperatives and QDS associations); (v) facilitating access to markets and seasonal/investment credit (TADB, SACCOS, etc.) for certified seed producers/organizations); and (vi) supporting the organization/association of professional seed producers to strengthen their linkages with seed input/output markets and regional AB involved in the three targeted seed value chains.

128. On a results-based approach, AFDP will promote business development and reduce financial risks of private/cooperative seed producers, especially for young professionals, by supporting supplementary operating costs related to additional annual certified seed productions expected (see respective private sector outputs in Table 9). Subsidies (matching grants) would mainly cover inputs and support services involved in additional annual operational costs for certified seed production, at a decreasing rate from 75% in Y1 to 10% in Y5. This approach allows for strengthening sustainability of self-financing of private certified seed sector operations at the expected level (about 8000 tons for 3 VC in 2025) for the target area.

129. Support (matching grants) to registered private seed enterprises focusing on certified seed supply in the target area, will include: (i) supply of quality basic seed (adapted varieties and quantities) for a period of 2 years; (ii) providing specialized technical and management support services and training for seed production and processing of certified seed (in close collaboration with regional MoA and TOSCI officers); (iii) enabling full implementation of the certification process by TOSCI; (iii) facilitating, where possible, partnerships and commercial agreements with private seed producers/SMEs to use ASA facilities (land, irrigation); (iv) payment of initial certification operations at the level of 100%, 75%, 50% and 25% respectively in year 1 to 4; where necessary and (v) facilitating seed treatment support services at cost (sorting, treating packing, etc.).

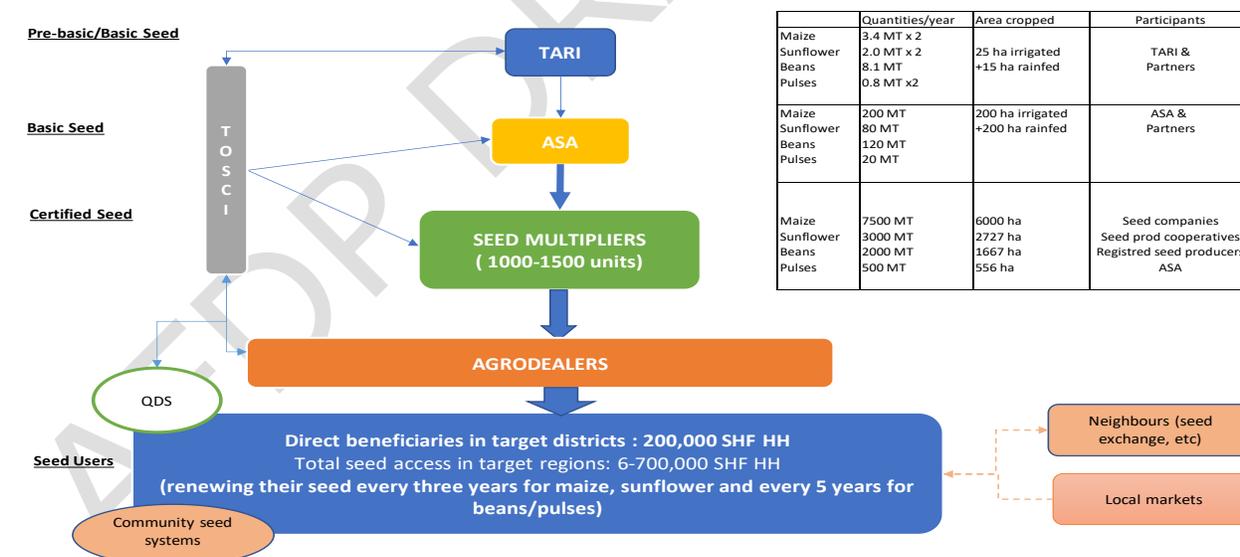
130. Strengthening of technical and management capacities of all involved partners will be provided, including annual zonal training sessions for seed producers, selected technical assistance, diffusion of technical information by ICT, exchange visits etc. are essential for consolidating working capital towards success. Furthermore, private seeds producers / SMEs /Cooperatives and youth businesses will be linked with Financial Institutions partnering with TADB under the SCGS and other financial instruments for working capital (to finance inputs) and asset financing (to finance production and storage equipment).

Seed quality control and certification.

131. AFDP will provide targeted support to Tanzania Official Seed Certification Institute (TOSCI) for strengthening its role in seed quality control and certification, to ensure availability of quality seed of improved varieties to farming communities, while also implementing DUS (Distinctness, Uniformity and Stability) and NPT (National Performance Trials) testing of new varieties prior to the integration into the official national crop variety catalogue. To this end, the programme will strengthen the physical, technical and management capacities of TOSCI, towards a more efficient and autonomous (currently self-financed at 50% level) professional seed quality control and certification system in Tanzania, while broadening TOSCI initiatives to expand OECD Seed Schemes and the scope of ISTA Accreditation.

132. As a means of improving TOSCI's performance and sustainability in supplying regulatory services for the seed sector outcomes, AFDP will support investment in: (i) upgrading operational and laboratory facilities at the National seed testing laboratory (Morogoro) and zonal levels (NO-Arusha, NW-Mwanza) including infrastructure rehabilitation and equipment; (ii) enhancing technical and management capacities of seed inspectors, samplers and analysts; (ii) strengthening seed quality control and certification procedures and guidelines; (iii) promoting third party seed certification and data management and build a cadre of private (young and female preference) seed inspectors; (iv) rolling-out of e-tags for digitized authentication of quality seeds by smallholder farmers and reduce fake seeds (in collaboration with other partners); and (v) enhancing overall technical and management/business capacities of TOSCI at national and regional levels.

Figure 4: Summary of seed system production flow:



	Quantities/year	Area cropped	Participants
Maize Sunflower Beans Pulses	3.4 MT x 2 2.0 MT x 2 8.1 MT 0.8 MT x 2	25 ha irrigated +15 ha rainfed	TARI & Partners
Maize Sunflower Beans Pulses	200 MT 80 MT 120 MT 20 MT	200 ha irrigated +200 ha rainfed	ASA & Partners
Maize Sunflower Beans Pulses	7500 MT 3000 MT 2000 MT 500 MT	6000 ha 2727 ha 1667 ha 556 ha	Seed companies Seed prod cooperatives Registered seed producers ASA

	Item	Maize	Sunflower	Beans	Pulses	
	Available seed (MT)	7,500	3,000	2,000	500	
	Seed use kg/ha (loss included)	25	15	50	15	
Within 10 regions Seed access	Area planted ha/year	225,000	150,000	30,000	25,000	Considering 25% loss
	Potential area planted /3-4year cycle	675,000	450,000	120,000	100,000	
	Total number of farmers access seed	750,000				
	% of total cropped area in Target region	48%	66%	25%	25%	
Within 42 districts	Beneficiaries (Households / HH)	200,000	(5000 HH x 40 districts)			Renewal every 3 years
Seed access + extension services	Area (ha) in target districts	Maize	Sunflower	Beans	Pulses	HH
	Avg ha/HH/yr	0.9	0.5	0.15	0.12	
	Area (ha) in target districts (3 yr cycle)	270,000	150,000	45,000	36,000	
	% of total cropped area in target districts	55%	75%	35%	35%	
						Renewal every 3 years

133. SECAP for Seed components. IFAD's SECAP categorises for irrigation schemes consider ≤ 100 ha as Category B, requiring environmental and social management plans (ESMPs) to be prepared, including a management plan which indicates, at a minimum, the types of impacts, mitigation and management measures and associated costs. Irrigation command areas between 50 and 200 ha belong to Tanzanian B2 Category requiring a Programme Brief, although large scale monoculture for food and cash crops between 50-100 ha is considered Category B1 – where the Programme Brief is submitted to the National Environmental Management Council for screening, and then NEMC will decide whether a higher level environmental and social assessment is required. For monoculture of food and cash crops of < 50 ha, only a Programme Brief is necessary. The irrigation systems in each of the 2 targeted farms will cover about 100 ha: these farms are primarily producing basic seed (but also some certified seed) for several crop species, while practicing seasonal rotations between cereals, leguminous/pulses and other crops (sunflower, sesame, etc.) and time differentials between varieties of the same species. Thus it will be highly unlikely to get over 50 ha of one species (even more of one variety) at a given time (at similar phenological stage) on the 100 ha irrigated.

SUBCOMPONENT 2.1. QUALITY SEED USE AND BUSINESS DEVELOPMENT

134. Based on sustainable seed supply of adapted varieties (see subcomponent 1.1), the aim is to strengthen flows and use of improved seeds by engaging partnerships with local agricultural sector actors (public, associative and private) to respond to farmer needs in terms of innovation access and use for up-scaling productivity and resilience of farming systems in target regions and communities. Quality seed access targets about 25% of local farming activities and allow replacing smallholder farmers OPV seed for priority value chains every three years, while enhancing seed maintenance capacities. The annual renewal and use of national hybrid varieties is expected to reach seed use levels of about 20% (Maize) and 10% (sunflower- national varieties) not taking in account international private hybrid varieties produced/imported by registered seed companies.

135. Within the programmatic approach adopted by ASDP II, it is envisaged that all new projects and programmes will contribute to the overall 'mother' programme, especially for the common services/enablers section (i.e. coordination, policy, extension systems, M&E) to enable the local extension system (outreach) to deliver efficiently sustainable interventions, towards scaling-up innovation use. The AFDP will contribute to (re)dynamize the local extension system to deliver specific objectives of AFDP (short-term outputs) while contributing (with other partners) towards a sustainable agricultural support framework (long term result), within a subsidiarity approach.

136. Overall, it is essential to strengthen the existing support systems (but also functions/roles of institutions) for efficient and sustainable technology/innovation flow: (i) relay and scaling-up of interventions of the TARI, ASA, private seed producers and TOSCI; (ii) deliver specific AFDP results, but also contributing to the mother programme ASDP II objective for efficient common innovation services; and (iii) integrate new approaches and tools such as intensive use of ICT to complement and beef-up local extension by lead smallholder farmers & farmer organizations, integration of agrodealers and other rural actors (agribusiness, financing).

137. Towards enhancing quality seed use and business development in the target area, AFDP will support four action areas: (i) Regional multi-stakeholder innovation platforms; (ii) Promoting supply and access to improved seeds; (iii) Promoting farmer awareness and

demand for improved seeds; and (iv) Facilitating synergies for effective market linkages with grain buyers and processors.

Regional multi-stakeholder innovation platforms.

138. AFDP will support zonal multi-stakeholder innovation platforms targeting key associative, public and private local value chain stakeholders to foster coordinated stakeholder planning, coordination and monitoring of seed demand, supply and use of preferred varieties. Regional platforms will contribute to identify smallholder farmers demand and adjust the seed multiplication on appropriate locally-adapted varieties that are more resilient to climate variability and change, the evolution of pests and diseases and local edaphic conditions, while simultaneously promoting CSA practices.

139. Programme interventions will: (i) facilitate the organization of annual stakeholder platforms of seed value chain actors in each target region of the Central Tanzanian corridor; (ii) coordinate planning, coordination of implementation and monitoring of regional seed use and promotion activities in selected value chains (seed fairs, etc.); (iii) specialized technical and economic/market studies on seeds sector; (iv) promote the emergence/strengthening of district and regional professional seed producer and distributor organizations around the selected crops/value chains.

140. Participative innovation platforms will allow for local value chain stakeholders to be directly involved in the evaluation of seasonal progresses and issues in the seed value chains and to discuss future needs in terms of specific varieties and required seed quantities at local level. These annual stakeholder meetings will be coordinated each by the regional MoA office (RAS), in close collaboration with involved district facilitation teams and regional representatives of seed producers (TASTA, local seed producer organizations) and distributors (agrodealers), farmer organizations, targeted agri-business and civil society representatives. Outputs will be shared among local stakeholders for further discussions and actions, and feed into the national seed information systems to contribute to the national seed demand and supply planning and coordination (see subcomponent 1.1.1). AFDP will also support on-demand technical and market surveys, including specialized studies to assess seed demand and constraints and opportunities for the seed value chains in the selected regions of the target area.

Promoting supply and access to improved seeds.

141. The programme interventions will strengthen the sustainable development of agrodealer networks (SMEs and local seed farmer organizations) in the Central Corridor of Tanzania, to improve local smallholder access to quality (certified) seeds of preferred improved varieties and adapted technical practices and information.

142. In complement of common local extension services supported in the ASDP II framework, AFDP will provide specific support to: (i) enhance access to seed markets and partnerships of local agrodealer networks with national/regional seed producers (members of TASTA) and agricultural input importers (fertilizer, agrochemicals); (ii) strengthen capacities of regional and district agrodealers (and their network) by technical and management training (1/region in Y1 and Y4), re-training (every other year) and specialized TA to support district level agrodealer network consolidation and development (as required); (iii) promote further development of the last link for seeds and inputs to reach local smallholder farmers, including technical/business support for village input shops/outlets managed especially women and youth; (iv) facilitate grouped purchases of quality seeds and agricultural inputs by local farmer organizations; (v) strengthen adapted technical information diffusion to smallholder farmers by distribution of information material (pamphlets, posters etc.) in agrodealer shops and

varietal demonstrations (2/district for 3 years) established at proximity agrodealer shops. At the beginning of the programme, a participative evaluation of strengths and weakness of the agrodealer network in each district will allow for determining specific support towards specific priorities towards improved smallholder farmers access to agricultural seeds and other inputs.

Table 13: Seed companies in the target area (TOSCI 2019)

S/NO	Name of Seed Companies	Location		Business	Registration Number
		District	Region	Premise	
1	JTI Leaf Services Ltd	Morogoro MC	Morogoro	Kihonda	SD/19/MOR/18
2	Premium Active Tanzania Ltd	Morogoro MC	Morogoro	Kihonda	SD/19/MOR/14
3	Tanzania Leaf Tobacco Comapany	Morogoro MC	Morogoro	Mazimbu	13
4	Kings Medics	Nyamagana	Mwanza	Nyamagana	SD/17/MWA/87
5	Agreseed Technologies Ltd	Morogoro MC	Morogoro	Morogoro	63
6	ETG Inputs Ltd	Morogoro MC	Morogoro	Masika	SD/19/MOR/396
7	Agri Grow Tanzania Ltd	Morogoro MC	Morogoro	Msanvu	SD/20/MOR/561
8	Regina Seeds Ltd	Arusha	Arusha	Arusha	SD/17/ARU/410
9	Agrinature Co. Ltd	Morogoro	Morogoro	Morogoro	SD/17/MOR/323
10	Agriscope Africa Ltd	Nyamagana	Mwanza	Uhuru	SD/19/MWA/382
11	Quton (T) Ltd	Nyamagana	Mwanza	Nyamagana	SD/17/MWA/357
12	Afrisian Ginnig Ltd	Shinyanga			SD/18/SHI/618
13	Matange Investment & Fumigation Services CO	Mvomero	Morogoro	Dakawa	SD/18/MOR/668
14	Dorcorp Investment	Iringa			SD/18/IRI/666
15	Kinesi Agro Services Ltd	Morogoro	Morogoro	Morogoro	32
16	Agrinature Co. Ltd	Morogoro	Morogoro	Msanvu	SD/17/MOR/323
17	Royal Agri Company Ltd	Morogoro	Morogoro	Kihonda	SD/17/MOR/329
18	Alliance One Tobacco Tanzania Ltd	Morogoro MC	Morogoro	Kinguruila	SD/18/MOR/699
19	Efrem Agro Trading	Ifakara	Morogoro	Ifakara	SD/18/MOR/700
20	Sunflower Farmers Association	Dodoma	Dodoma	Nane nane	SD/18/DOD/777
21	Pachama Tnzania Limited	Nyamagana	Mwanza	Lumumba	SD/18/MWA/857
22	Biosustain T Ltd	Singida	Singida	Unyankhae	SD/18/SIN/843
23	Kifa Investment Co LTD	Nyamagana	Mwanza	Nyerere Road	SD/18/MWA/845
24	Maruthi Godwa	Morogoro	Morogoro	Morogoro	SD/18/MOR/921
25	Jayze Traders Seed Production	Dodoma	Dodoma	Dodoma	SD/18/DOD/1182
26	Positive International L td	Morogoro MC	Morogoro	Masika	SD/18/MOR/1004
27	AJ Momba Agri International T Ltd	Ifakara	Morogoro	Kibaoni	SD/18/MOR/999
28	Ayegro Group Limited	Dodoma	Dodoma	Uhuru	SD/18/DOD/1110
29	Afrisian Ginnig Ltd	Shinyanga	Shinyanga	Shinyanga	SD/18/SHI/618
30	N&N Trading Co Ltd	Dodoma	Dodoma	Kizota	SD/19/DOD/1376
31	Kahama Oil Mills Ltd	Kahama	Shinyanga	Kahama	SD/19/SHI/1590
32	Smart Step Co Ltd	Dodoma	Dodoma	Kinyambwa Road	SD/19/NJO/2203
33	Alnoor sava Impex Ltd	Nyamagana	Mwanza	Karuta	SD/19/NJO/2205
34	Lima Africa Company Ltd	Tabora	Tabora	Min Bus Stand	SD/19/TAB/2596
35	Novatel Agrofarm Company Limited	Nyamagana	Mwanza	Uhuru Mission	SD/19/MWA/2963
36	Pyxus Agriculture Tanzania Ltd	Morogoro	Morogoro	Kingolwira	SD/19/MOR/2968
37	Tetra Agri -Consultant & Learning Ltd	Morogoro MC	Morogoro	Modecao	SD/19/MOR/3131
38	Tanzania Agricultural Research institute	Dodoma	Dodoma	Makutupora	SD/19/DOD/1377
39	Agricultural Seed Agency	Morogoro MC	Morogoro	Komoa	SD/19/MOR/3350
40	Agricultural Seed Agency	Kilosa	Morogoro	Msimba	SD/19/MOR/3354
41	Kilimo ni Ajira Co Ltd	Dodoma urban	Dodoma	Dodoma urban	SD/20/DOD/3641
42	Kinasoru East Africa Ltd(Aman Kipande	Dodoma urban	Dodoma	Msalato	SD/55
43	Kilombero Sugar Company Ltd	Kilombero	Morogoro	Kilombero	SD/52

143. To this end the programme will finance: (i) contracting specialized service providers to organize technical support and agribusiness management training towards strengthening the existing and new agrodealers to activate the district and ward level agrodealer network and their personnel; (ii) the production of technical information material for diffusion through the agrodealer network, and (iii) support agrodealer managed variety demonstrations.

144. To establish new agrodealers and increase agrodealer capacity to supply seeds and other inputs to smallholder farmers, the programme will facilitate linkage with local financing/credit institutions (TADB, SACCOS etc.) to access working capital and asset financing (for storage and transportation). This will build on the experience of MUVI, including blended finance mechanisms, loans, SCGS guarantee and performance-based incentives. This support will also provide opportunities for establishing new agricultural input shops and village outlets (where required), managed especially by young and female entrepreneurs.

Table 14: Active agrodealer in target area

Zones	Regions	Number of districts	Rural HH (est. 2020)	Active agrodealer NAIV 2011/12 /a		Agro-dealer 2020 /b	Estimated agrodealer /selling points requirement 2025 /c
				Target regions	Target districts	Target regions	
Central	Morogoro	5	228 695	207	162	200	220
	Manyara	4	173 733	51	48	18	170
	Singida	5	220 344	18	18	7	220
	Dodoma	6	311 110	18	18	176	300
	Tabora	3	241 540	60	20	17	240
Lake zone	Mwanza	3	232 614	53	53	62	230
	Shinyanga	2	159 629	87	28	53	160
	Geita /b	3	241 870	65	65	52	240
Coastal	Tanga	5	165 546	26	17		160
	Pwani	4	98 577	20	14		100
Total		40	2 073 658	606	444		2040

/a: Active and trained agrodealers involved in NAIVS; /b estimated from former geographical distribution. Total active NAIV agrodealer at national level in 2012 = 2280 (out of about 3775 trained agrodealers)

/b: Registered agrodealers in the target area in 2019, as per TOSCI database (high concentration in main towns, such as Morogoro and Dodoma with a multiple region coverage)

/c: On average, improved farmer access to inputs requires a (village) selling point for 1-3.000 HH connected a district/regional professional agrodealer network (5-15 selling points per agrodealer).

Promoting farmer awareness and demand for improved seeds.

145. The Programme aims at reaching about 300,000 farming households in 40 districts of 10 regions in the Central Tanzania Corridor to access, use and maintain improved seeds of preferred varieties for maize sunflower and beans/pulses production. Quality seed of improved varieties form the basis of sustainable intensification and productivity gains (20-30% on average) of maize-sunflower-pulses based cropping systems, in highly vulnerable cropping systems of low potential areas, especially when combined to integrated soil fertility (organic and mineral) and pest & disease management and CSA practices to improve their resilience

146. To this end, AFDP will promote farmer awareness by strengthening support capacities of the LGA agricultural extension system. To this end AFDP will enable district extension facilitation teams to activate district & ward agricultural extension networks to promote demand and use of improved seed (and inputs) by: (i) enhancing farmer exposure to

innovative technologies (varieties, best practices for on-farm seed maintenance and preservation⁴², CSA practices), through participatory varietal evaluation, including the use of farmer field schools (FFS), on-farm demonstrations and farmer field days; (ii) promote seed fairs and seed sample distributions for farmer self-testing in own production field, farmer exchange, etc.; (iii) empowering local farmer organizations to provide sustainable support services on quality seed management through village-based advisors (M/F local farmer leaders); (iv) facilitate large scale access to information on quality seeds and varieties, disseminated through digital platform and ICT channels through subsidies for lead smallholder farmers for communication equipment and use; and (v) facilitating access to financial services for the smallholder farmers and their organizations for grouped seed and other input purchase

Overall AFDP target: 200000 smallholder households in 40 districts of 10 regions in the Central Tanzania Corridor.

Table 15: AFDP targets for seed systems development

Target REGIONS		Notes
Total number of regions	10	
Total number of Rural HH in target regions (2025)	3.5 million HH	Target = 10-15% of total HH
Target Districts		
Total number of districts targeted	40	
Total number of Rural HH in target districts (2025)	2.0 million HH	
Average number of rural HH/district	50,000	
Access to improved seeds / agrodealers	All	About 50% of adoption rate
Average number of HH benefiting from intensive seed PROMOTION CSA practices (about 15-20%)	500à HH/ district	Local support will be for 1 year and benefiting households shared over a 3-year period
Annual intensive support HH per district	200 HH/annum	

NB. Average hypothesis elements (calculated from projected 2026 levels in target area)

147. Implementation modalities. Extension services form local link to enhance smallholder farmers skills and promote scaling-up of R&D innovations into use, including farmer use of quality seed for preferred varieties. Based on current policies and lessons learned, ADSP II promotes strengthening of implementation capacities of decentralized extension systems (common services) to fit current farmer needs, including among others, further involvement of farmer organizations (lead smallholder farmers) and other local stakeholders (agrodealer, agribusiness), and intensive use of ICT by extension workers and smallholder farmers towards improved efficiency and sustainability. AFDP will contribute to these overall changes, while considering specialized tools contributing to its specific objective of increasing smallholder farmers use of quality seeds for resilient intensification of cropping systems in targeted vulnerable areas.

148. AFDP support will be provided within the integrated and decentralized framework for agricultural extension at LGA level as proposed ASDP II, and currently in early implementation stages. Local level demand-driven advisory services will follow the gradual building-up of

⁴² Main attention will be given to seed preservation and maintenance (between 2 consecutive purchases every 3 years for OPV) and climate smart agricultural practices adapted to local agro-ecological conditions for increased productivity and resilience

certified seed production (see sc. 1.1) and distribution. Therefore activities will be phased to cover all selected regions from the beginning on (with gradual activity intensification), starting with 1 district per target region in year one and scaling-up activities (as quantities of seeds are increasing) towards progressively cover all selected districts (40) from Year 4 on. The final choice of district sequencing will be done at the inception stage through stakeholder consultative processes.

149. In each targeted district, besides the overall capacity strengthening of the district facilitation team and local farmer organizations (including women and youth), intensive advisory services will target about 5000 farming HH to be covered in 3 successive annual shifts of 1500-2000 selected smallholder farmers (see table below). Meanwhile, while the number of involved smallholder farmers and their experience will gradually increase from year to year, the programme will collaborate with more experience and partners, but also strengthen the performance of its ICT platform and tools for enhancing large scale regional promotion, even outside selected districts. This phasing will also enable to gradually strengthen technical and management skills and knowledge for respective district extension facilitation teams, field extension workers (ward level), farmer organizations and other involved stakeholders.

150. The gradual increase in promotion intensive extension services could be channeled as follows:

151. For efficiency, application of specific roles and subsidiarity principles, seed system involved agencies (TARI, ASA, TOSCI) will primarily interacting with and provide technical support to the extension facilitation teams at district level (40 entry points in target area). The district facilitation team and their ward level extension worker network will take over and implement the local extension work at field level (as per LGA duties). The efficiency of this relay will determine the success of scaling-up of smallholder farmers use of improved varieties and maintenance of quality seed at farm level.

Facilitating synergies for effective market linkages with grain buyers and processors.

152. To further facilitate the development of market responsive seed system, the Programme will promote technical and business synergies through close collaboration with local agribusiness involved in targeted seed value chains, including among others: (i) large/medium-scale sunflower oil extraction businesses for promoting contract farming, pricing agreement on product quality, use cake for animal/fish feed, etc.; and /or (ii) commodity whole sellers especially for pulses (but also maize) for contract production, pricing agreements, but also enhancing use of low grades for animal/fish feed.

153. AFDP will finance: (i) technical and business mapping studies (regional and AEZ level) to identify production areas/cooperatives and potential off takers and processors; (ii) stakeholder dialogue and concertation for promoting partnerships with agrobusiness and other VC actors by contract production, pricing/quality agreements, etc. with farmer organisations, (iii) specialized technical services and management assistance to young entrepreneurs and cooperatives; (iv) targeted subsidies/grants for participative testing production and post-harvest innovations in selected VC and new management approaches (primarily for young entrepreneurs), (v) diffusion of technical and business information, and linking with structured trading platforms for small holder farmers like G-Soko by the East Africa Grains Council for maize and beans⁴³. Financial instruments managed by TADB will be leveraged to finance off takers grain businesses and processors, but also financial services for the smallholder farmers and their organizations for input purchase (see section on financing).

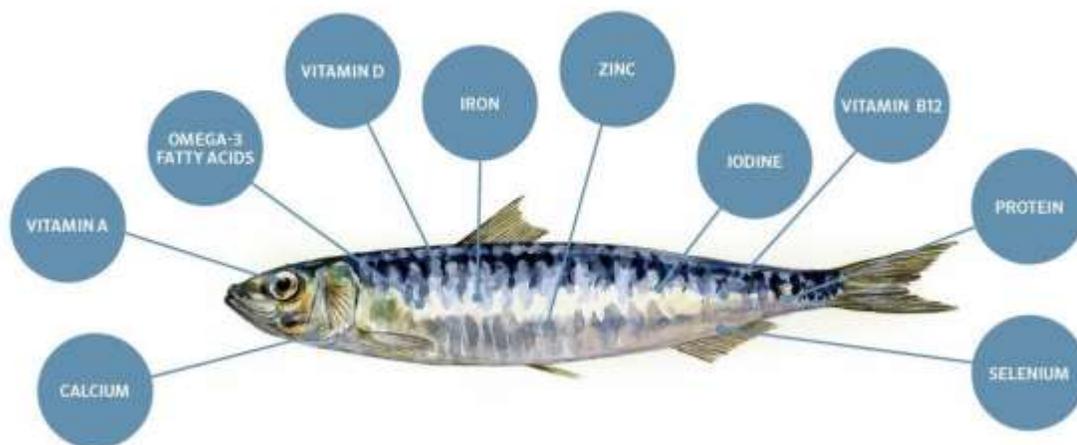
⁴³ <https://www.oecd.org/aidfortrade/casestories/casestories-2017/CS-70-DFID-G-Soko-market-system%20.pdf> .

154. To this end, the programme will enhance co-benefits and promote collaboration with on-going programmes active in the same area, including AMDT (Agricultural Market Development Trust) a flagship 'Market for Poor' that creates a platform to build the best practices especially in the sunflower value chain, ASARECA as the regional agricultural R&D platform, and the Pan African Bean Research Alliance for the implementation of bean business corridor through lead firm model nested in private public consortium.

B. FISHERIES AND AQUACULTURE DEVELOPMENT

155. Current fish production has not been adequate to keep up with growing population resulting in a declining per capita consumption of fish. There has been a steady decline from 14kg in the late 1980s to the current 8.5 kg due to dwindling fish catch and slow aquaculture growth. The current per capita consumption is below 9.9 kg and 20.5 kg for Africa and World respectively (MLF, 2020; FAO, 2020). The downward trend pose a serious threat to nutrition and food security as fish contribute 30% of animal protein intake. One of evident effect of the downward trend is the increased prevalence of undernourishment in terms of chronic malnutrition among children (31.8%) and anemia in women (28.8%) (TNNS 2019). This is attributable to high consumption of monotonous diets based on starchy staple crops due to insufficient intake of animal-source foods (ASF). This leads to deficiencies of nutrients such as vitamin A, iron, folate, and iodine particularly among children under-five, pregnant women and other vulnerable groups. Fish is one of such ASF regarded as nature's superfood because of being very rich in variety of nutrients as shown in figure 5.

Figure 5: Nutritional value of fish



FAO, Nutritional value of fish, 2016

156. To reverse the declining per capita consumption and to reach at least half of the global per capita consumption of fish i.e. 10.25 kg, Tanzania needs an additional 105,000 tons of fish per year (60,000,000 people x 1.75 kg i.e. deficit in per capita to reach 10.25 kg {10.25-8.5}). Given the presumption that most of the traditional fishing grounds have almost reached their maximum sustain yield, therefore this additional fish will have to come from exploitation of deep sea fish stocks and aquaculture. In context of aquaculture, the country endeavors to increase annual fish production from current 17,233 tons to 50,000 tons by 2025 and 100,000

by 2030. To produce 50,000 tons of fish per year, the country will need at least 250,000,000 fingerlings (50,000,000 kg x 4 fingerlings {assuming harvest weight of 250g per fish} + 20% to compensate for mortality) and 75,000 tons of feed (assuming a Feed Conversion Ratio of 1.5 x 50,000 tons of fish) per year.

Subcomponent 1.2. Sustainable fisheries and aquaculture development

157. This subcomponent will support Tanzania mainland and Zanzibar government's strategic objective of promoting sustainable fish production systems from both capture fisheries and aquaculture. It is projected that AFDP's interventions will lead to additional increased fish production, amounting to 100,000 tons per year (representing 25% increase) from the current production of 392,933 tons to 492,933 tons, of which 20% (30,000 tons) will come from aquaculture and 80% (80,000 tons) will come from both Deep sea (50,000 tons) and inshore fishing (30,000 tons). The programme will support the establishment of the necessary infrastructure, technologies and systems for sustainable utilization of marine fisheries in the inshore areas and in the deep sea and development of inland aquaculture, towards meeting the country's increasing fish demand and achieve a 10.5 Kg per capita consumption. It will also support seaweed production and post-harvest activities in Zanzibar.

158. The Programme's interventions under this sub-component will support the livelihoods of 18,000 artisanal fishers, 6,000 fish smallholder farmers and 15,000 seaweed producers who are dependent on fisheries and aquaculture. The sub-component focuses on four areas with high potential to contribute to Tanzania's ambitions for increased production from marine fisheries and aquaculture:

- (i) Artisanal fishing in the marine inshore areas, aiming to reduce fishing pressure by promoting sustainable fishing practices, strengthening fisher's co-operatives, and reducing post-harvest losses;
- (ii) Deep-sea fishing, aiming to develop the country's capacity to utilize the fisheries resources in the EEZ through 4Ps arrangement, while building a strong framework for sustainable management of these resources;
- (iii) Inland aquaculture, with a focus on developing the capacity of the ADCs to support the growth of small-holder aquaculture in high potential areas through cluster models, strengthening linkages with the private sector and enhancing the input supply systems; and
- (iv) Seaweed production in Zanzibar, with a focus on improving the production practices and skills, enhancing seed quality and promoting technologies for increased production.

Development of sustainable artisanal marine fisheries production systems

159. In terms of fish production, fresh water bodies contribute about 85% of the total annual fish landings while marine waters contribute about 15 %. Emerging evidence suggests that inshore fishery is on the verge of collapsing, this can be evident from declined annual landings catch. 32 MT in 2015 and 52MT in 2013. The decrease in fish stock in territorial waters can be linked to increase in demand of the fisheries resources due to the increase in population, food demand and growth of the tourism sector. Illegal fishing and use of destructive fishing gears like dynamite which destruct fish habitats.

160. Improved livelihoods of fisherfolks and other value chain actors by increasing fish production and value addition through effective management of marine environment, biodiversity and safety. More specifically, the investments will result into (i) increased fish production and productivity; (ii) increased and sustainable income for fisherfolks; (iii) Improved nutrition as a result of increased consumption of fish and fish products; and (iv) improved fisheries resources management, protection and conservation for sustainable fisheries productivity

161. The programme will support sustainable utilization of fisheries resources in the country's inshore waters, supporting the livelihoods of about 18000 small-scale fishers in this zone. The objective is to promote sustainable fishing practices and contribute to the reduction of fishing pressure, encourage a shift in effort from overfished areas, sensitive habitats such as coral reef area and inhibition of certain destructive fishing methods. The programme will (i) promote the use of recommended gears suitable for sustainable fishing; (ii) promote the use of Fish Aggregating Devices (FADS); (iii) support increased access to ice by artisanal fishers to reduce postharvest losses; and (v) strengthen fishers' co-operative organizations and streamline the marketing arrangements and processes from sea to market in order to enhance value of catch.

162. AFDP will capitalize on the achievements, physical assets and co-management approaches of coastal resources in both mainland and Zanzibar of the South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFISH), a World Bank financed regional Project, which aims at improving the management effectiveness of selected priority fisheries at regional, national, and community levels.

Table 17. Artisanal fisheries statistics for Marine water of Tanzania mainland, 2018

Item	Pwani	DSM	Lindi	Mtwara	Tanga	Totals
Landing sites	93	31	57	37	56	274
Number of Fishers	13,804	8,792	10,742	5,620	14,077	53,035
Number of Fishing vessels	3,057	1,240	2,337	1,273	1,335	9,242
Weight of fish in metric tons	10,862.7	23,110.4	5,224.0	4,183.8	9,850.9	53,231.94
Value of fish in 000's TShs.	51,054,878	108,619,021	24,552,753	19,664,048	46,299,418	250,190,118

AFDP will support GoT to ensure these marine fisheries resources are used sustainably. Specifically, AFDP will support the following interventions and activities in the artisanal fishery sub-sector;

163. Promoting the use of Fish Aggregating Devices (FADS) as a means to enable small-scale fishers avoid fishing from the critical habitats and reduce by-catch of endangered species, including sea turtles. Among other advantages, FADS can increase catch by the small-scale fishers and reduce the cost of fishing since fishers only need to move to designated places where FADS have been installed. In this way, FADS will encourage a shift in effort from overfished areas, sensitive habitats such as coral reef area and inhibition of certain destructive fishing methods. It is estimated that FADs will increase fish catch by 50,000 tons to the small-scale fishers. The Tanzania Fisheries Research Institute (TAFIRI) has been investigating the potential of FADs in the artisanal fishery, generating knowledge and expertise that they will leverage for this activity. TAFIRI will spearhead installation of FADs, in collaboration with MALF and fishers' cooperatives, identifying the areas suitable to install FADS, develop guidelines for

FADs and monitoring impacts of this activity. The Programme will support the installation of an estimated 90 FADs, with funding directed at the following activities;

- a. Construction of FADs: The FADs will be constructed by the Fisheries Extension and Training Agency (FETA) Mbengani, using locally purchased materials and deployed according to protocols to be developed by TAFIRI. The Programme will finance the cost of materials and any chargeable labour costs for constructing the FADs.
 - b. Installation of FADs: This involves identification of suitable sites and actual deployment of FADs in the designated areas, activities to be carried out by TAFIRI and incorporating the knowledge and experience of the local fishermen and fisheries officials. The associated costs of these activities which the Programme will finance are: cost of hiring a suitable vessel, fuel and subsistence for the vessel crew and TAFIRI scientists.
 - c. Monitoring impacts of FADs: TAFIRI will develop a plan for monitoring impacts of FADs, which will involve monitoring fishing grounds as well as catches from fishers. This exercise may involve SCUBA diving and other methods of visual observation as well as use of echo-sounders to assess aggregation rate of fishes around FADs. Fishers co-operative societies will participate in the activity by keeping records of fish catches from these areas by fishers who are their members. The specific costs financed by the Programme under this activity will include fuel for vessel and subsistence for crew and scientists.
164. Strengthening the capacity of fisher's co-operatives to participate in management of fisheries resources and carry-out viable fisheries value chain businesses for the benefit of their members. The main financed activities will be;
165. Fishing gear exchange programme, aiming to replace destructive and illegal fishing gears with the more sustainable and legal gears such as handlines, droplines, longlining or pole and line, to reduce unsustainable fishing efforts. The Fisher co-operative societies will have access to small loans of up to USD 100,000 per fisher co-operative, which will enable them to open shops and run the business of selling legal and appropriate gears to their members. The micro-loan will be operated inform of Village Community Banks (VICOBA), where fishers members save money with their cooperative which makes them eligible to get loans from the fisher cooperative once they have attained a certain savings level. Such a system has been successful in rural areas in Tanzania. Payment for the loan from fishers will be defined and agreed with the Fisher cooperative at the time of formulation and registration.
166. Business skills development for cooperatives. . MLF and TAFICO will conduct (8) community-based short training workshops for Fisher Cooperative Societies and their members, focused on the management of co-operative societies and how to conduct their business in a profitable manner. The trainings should involve a ToT training approach, through which at least 400 artisanal fishers linked to four co-operatives to be supported by the Programme, will be trained. Training will be extended to at least 2 District Fisheries Officers from each participating district. The specific activities financed by the Programme are: 1 vehicle, fuel, subsistence, production and publication of training manuals, workshop facilitation (trainers and trainees subsistence, training facilities hired etc.).

Private-Public-Producer Partnerships (4Ps) joint venture for development of National Tuna Fishing Fleet.

167. Despite the lucrative potential of fisheries resources in the Exclusive Economic Zone (EEZ), Tanzania has never undertaken large-scale commercial fishing activities in the EEZ. The only benefit that the country gains from its EEZ is revenue from the issuance of licenses to foreign fishing vessels. By understanding that the country can benefit enormously from marine resources in the EEZ, TAFICO has initiated a Long Line Fishing Programme (LLFP) that will undertake fishing activities in the EEZ using Long line fishing vessels. The LLFP will fish tuna and tuna-like species and sell to local and international markets.

168. The main product obtained in the EEZ is tuna and tuna-like species from the family Scombridae, which are not a single species of fish but several species. Only four (4) tuna species, and one (1) tuna-like species are considered of major commercial importance in the Indian Ocean, including Tanzania EEZ. These five species in the Indian Ocean are the main products of Long line fishing, purse seines and gill nets. The four (4) tuna species include skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), bigeye (*Thunnus obesus*), and albacore (*Thunnus alalunga*) while the tuna-like species is swordfish (*Xiphias gladius*). These are target species for commercial purposes, mainly targeting the local (and regional) market, and a lot of potential for international market.

169. The programme will support the development of a semi-commercial fishing joint venture through 4Ps⁴⁴ arrangements between the respective government fishing agencies in Tanzania Mainland (TAFICO) and Zanzibar (ZAFICO), private sector investors and small-scale fishers' cooperative societies. AFDP will promote 4P joint-venture shareholding schemes or supply-based arrangements⁴⁵ as a mechanism to include smallholder fishers and fish traders in deep sea fishing and fish processing plants. To this end, the programme will finance technical assistance (TA) in form of 4P advisors/facilitators to support TAFICO and ZAFICO in developing a concept note and prefeasibility study for a small-scale PPP⁴⁶.

170. TAFICO is at initial stages of formalizing PPP arrangements with "Wavuvi wa Bahari Kuu" Cooperative Society Limited to jointly undertake the fishing operations in Tanzania EEZ. The cooperative is comprised of members who own medium sized fishing vessels that are currently fishing in Indian Ocean waters including on fringes of the EEZ. They have fairly good experience in fishing and desire to explore the EEZ but limited by size of the fishing vessels and operation capital. It is therefore anticipated that the partnership will have mutual benefit to both TAFICO and the Cooperative. TAFICO being new to the industry will benefit from experienced crews in operating the newly acquired fishing vessels. The cooperative will benefit from increased ability to fish deeper into the EEZ due to larger vessels which will be procured by TAFICO. Both parties will also benefit by sharing of operation costs which will enable effective use of the fishing vessels and staff time.

171. The Programme will facilitate the establishment of partnership arrangements involving ZAFICO/TAFICO, private investors and small-scale fishers to facilitate joint investments. In this regard, the programme will finance (i) technical assistance for structuring and brokering PPP; (ii) procurement of eight fully equipped marine fishing vessels (18-25 m) guided by the

⁴⁴ 4Ps involve cooperation between a government, business agents and small-scale producers, who agree to work together to reach a common goal or carry out a specific task while jointly assuming risks and responsibilities, and sharing benefits, resources and competencies. It focuses on the delivery of public or semi-public goods that are not be funded by the private sector, to address possible market failures and the perceived risks and transaction costs of working with small producers

⁴⁵ IFAD 2016. How to do public-private-producer partnerships (4Ps) in agricultural value chains. [https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+ percent284Ps+ percent29+in+Agricualtural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3](https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+percent284Ps+percent29+in+Agricualtural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3)

⁴⁶ A small-scale PPP is a public-private partnership whose total Programme value does not exceed US\$ 20 million; GOVERNMENT NOTICE No. 37 Published On 24/1/2020 THE PUBLIC PRIVATE PARTNERSHIP ACT, (CAP.103)

financing instruments, business models and partnership modalities developed above; and (iii) facilitate the implementation of a sustainable Tuna Fisheries Management Plan that will include monitoring of stocks and catches on a regular basis and effective system for Monitoring, Control and Surveillance to ensure compliance with regulations and avoid overfishing.

172. **Technical Assistance for brokering PPP.** The programme will finance **technical assistance in form of PPP experts** for structuring and brokering of PPP modalities in compliance with the PPP Regulations published on 24 January 2020. The PPP advisor will, among other things, undertake the following duties: (i) review existing business plans and prepare appropriate business cases and financial models; (ii) conduct market sounding to secure investor's interest in the proposed investments and inform potentially interested private parties, investors, lenders and other entities of PPP procurement plans and requirements; (iii) prepare pre-qualification documents, request for proposal and draft agreements; (iv) advice and participate in negotiation; (v) prepare counter-business case for feasibility studies submitted by the private party; (vi) facilitate financial closure; and (vii) prepare PPP Contract Management Plan.

173. The 4P advisors/facilitators will act as "honest broker" to assist in establishing and negotiating 4P business models and related contractual arrangements. TA will also support fisher cooperative societies in becoming better organized and prepared for engagement in formal market-based transactions. Fishers cooperative societies will play an active role in the negotiations and partnership arrangements, roles and responsibilities, as well as risks and benefits. Between 30-40 percent of the catch is expected to be used in the domestic markets through small scale fishers and other actors involved in the fishery value chain including youths and women. On the other hand, small scale fishers will supply bait to the vessels which require sufficient amount of baits during its operations. These investments will generate employment directly and indirectly for about 1 000 youth along the Tuna value chain, and will provide services and market outlets to over 15 000 artisanal fishers and their cooperative societies to supply fish and baits.

174. TAFICO and ZAFICO will form a **multi-disciplinary negotiation team** to work with the PPP consultant/expert and prepare negotiations with the private party on the terms, conditions and other issues of an agreement. The negotiation team shall be comprised of not less than five members with knowledge, experience and skills on the subject matter of the Programme which may include among others, experts in economics, law, finance and banking, engineering and PPP management.

175. **Concept note and prefeasibility studies for 4Ps.** TAFICO and ZAFICO will prepare and submit to the PPP Centre a concept note for a small-scale PPP⁴⁷. The 2020 PPP Act presents detailed outlines of the concept note, pre-feasibility study and feasibility study for public-private partnerships. TAFICO and ZAFICO will update and refine their business plans and existing prefeasibility studies prior to the start of the Programme. These will include the following preliminary information: (i) economic, financial and commercial analyses; (ii) social and environmental analysis; (iii) technical assessment and risk analysis; (iv) institutional and stakeholder's analysis; and (v) Action Plan. The Programme will then finance comprehensive feasibility studies to confirm the technical, economical, commercial, financially, environmentally, social viability of the partnerships.

⁴⁷ GOVERNMENT NOTICE No. 37 Published On 24/1/2020 The Public Private Partnership Act, (CAP.103)

A smallscale PPP is a public-private partnership whose total Programme value does not exceed US\$ 20 million;

176. **Finance the acquisition of 8 fishing vessels.** Long Line Fishing Programme (LLFP) within TAFICO focuses to undertake fishing activities in the EEZs and help the country to benefit from marine resources available in the EEZ. TAFICO has developed a Business Plan LLFP that provides the business roadmap for the LLFP for 10 years elaborating LLFP's products and services, presenting the industry and market analysis, marketing plan, as well as management and operational plan. It also describes the legal framework to be considered by the Programme while running its operations and outlines potential risks and mitigation strategies as well as providing a ten-year financial outlook of LLFP.

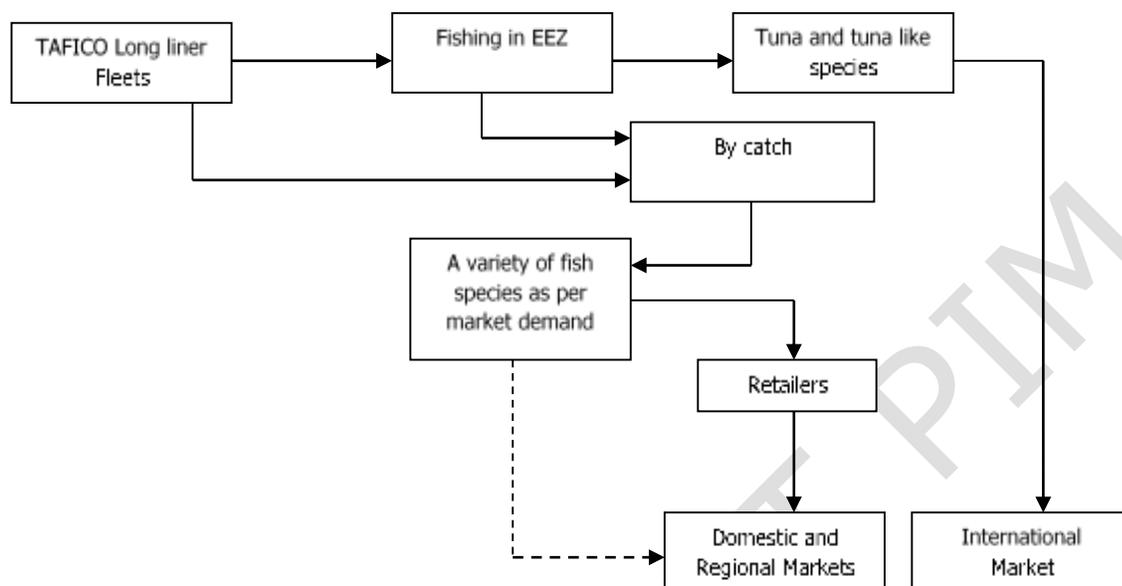
177. The market analysis suggests that there is untapped potential in the EEZ, and the competitive situation is generally favorable. The only direct competitors of this Programme are foreign fishing vessels, which have been licensed to operate in EEZ (however, the Government has limited the issuance of licenses to foreign fishing vessels in Tanzania's EEZ in the past three years). The Programme's main products are tuna and tuna-like species; thus, it will face indirect competition from other fish species in the market. The marketing plan has outlined a number of measures to address the threat of indirect competition. The measures are in the form of pricing strategies, promotion strategies, and marketing programs.

178. The Programme makes provision⁴⁸ (USD 8.36 million) to finance the acquisition of 8 fully equipped long line fishing vessels (4 of overall length 25m with a capacity of about 69 tons of fish for Tanzania Mainland and another 4 of overall length 18m, with a capacity of 35 tons of fish for Zanzibar), starting with four vessels (two each for Zanzibar and Mainland) in the first year and expanding to eight the following years, when it is expected that the programme will have gained more experience in operationalizing 4Ps and increased technical capacity and knowledge about the stock status. The integrated fish processing plants will be designed and equipped with modern technologies to meet the regional and international market standards.

179. **Finance the construction of fish processing plants:** - Support to TAFICO and ZAFICO to put up two (2) fish processing Plants to provide markets for the anticipated increased fish both from artisanal fisheries and the deep-sea fishing. One plant to be located in Zanzibar and another in coastal area Mainland. Actual location in the mainland will be determined after completion of feasibility on the Fish harbour. However, in the mainland location of the plant should be considered close to the place where fishing port will be constructed to be able to absorb fish immediately it is landed. The plants will process fish from the fishing vessels with the aim of exporting. The plants will also provide market for small-scale fisher's fish

⁴⁸ Private-sector partners are expected to allocate matching financial resources. They will be mobilized through TADB, making use of innovative finance instruments and engaging the network of partner financial institutions to help attract and scale up financing in fisheries.

Figure 6: TAFICO’s business flow for Long liner vessel



Operationalization of PPP Arrangement for fishing vessels

180. TAFICO and ZAFICO will acquire eight long line fishing vessels and will ensure small scale fishers have access to valuable fish resources and put a mechanism to reduce post-harvest losses to actors mainly women and youth. One of TAFICO’s mandate is to work with small-scale fishers in the country. TAFICO will work with Fishing Cooperative Societies in operating Fishing Vessels. Fishing Cooperatives will buy shares from TAFICO. The established partnership will hire experts in contract bases from the Private Sector to Operate the Fishing Vessels. The contract will be renewable after every three years. The share will be awarded after calculation but TAFICO is expected to have large share.

181. TAFICO will enter into partnership with Private Sector (Local or International) who will provide expertise on running Vessel for about six months. During that period, Private partner will be responsible for providing expertise in operating the vessels at different levels including Captains, Seamen and other crews. In that period Private Sector will team up with TAFICO or local staff to build capacity on operating fishing vessels depending on the agreement which will be made between the two parts (TAFICO and Private Sector)

182. Between 30 - 40 percent of the catch is expected to be used in the domestic markets to benefit small scale fishers and other actors involved in the fishery value chain and allied businesses including youths and women. On the other hand, small scale fishers will have the opportunity of selling quality bait to TAFICO LLFP which requires sufficient amount of baits during its operations.

Table 18: Proposed Operationalization of PPP Arrangement for fishing vessels

S/N	Programme function/component under PPP	Type/category of PPP	Details of the PPP
1	Operationalization and during inception phases for long	Service Contracting	Suppliers of vessels and experts of fishing in EEZ to provide expertise on the

	line/purse seine and territorial fishing vessel		operationalization of vessels during initial stages.
2	Serving international markets for Tuna and tuna-like species	Service Contracting	TAFICO will conduct all fishing activities in the EEZ but collaborate with fish exporting Companies to handle the selling function. The remuneration will be a combination of fixed fee and variable success (performance).
3	Technological support	Service contracting/ Joint venture	Private Sector or other parties provide expertise and experiences such as fishing in the EEZ while building the local capacity which TAFICO could not have managed to access without PPP
4	Cooperative societies, small scale fishers	Joint venture	TAFICO to enter a joint venture with comparatively Strong Cooperatives and agree on roles and responsibilities as well as sharing costs and benefits depending on shares. Further, to capacitate small-scale fishers to form fishing cooperative societies and or similar organizations through which they can be loaned out the fishing vessels.
		Joint Venture	Joint ownership between TAFICO and a private sector operator who will operate the vessel as local capacity is built.

Implementation of Tuna Fisheries Management Plan:

183. MLF, in collaboration with Deep Sea Fishing Authority (DSFA), will be responsible for the implementation of Tuna Fisheries Management Plan (TFMP), to guide integrated development approach for sustainable management of tuna fisheries resources, including monitoring catches on a regular basis as well as development of a fleet management strategy. MLF will ensure the implementation readiness of TFMP at the initiation of the deep-sea investment, and address any existing gaps to finalize the plan. This activity ensures synergies between AFDP and SWIOFISH, including monitoring control and surveillance of deep-sea fishing activities:

Increasing aquaculture productivity and output.

184. Aquaculture in Tanzania offers the most suitable option to expand fish supply in order to meet the food requirement given the extensive water resources from lakes and rivers, ideal temperatures and availability of raw materials for feed. AFDP will therefore intervene through developing the capacity of Aquaculture Development Centers (ADCs) (Kingolwira, Mwamapuli and Rubambagwe) to supply high quality Tilapia fish seeds and deliver effective extension services. The ADCs are envisaged to be a critical driver for transformation of aquaculture from predominantly small-scale subsistence activity into competitive enterprises. The ADCs will offer hands-on training on best practices for fish farms, fish hatcheries and fish feed mills. The programme targets to raise the level of Tilapia fingerlings production to an additional 25 million fingerlings per year at the end of the six-year investment period.

185. Tanzania lacks reliable supply of fingerlings in both quality and supply despite being a hotspot for tilapia biodiversity. Currently, hatcheries rely on wild caught broodstock which is often contaminates with other tilapiines species such as *Oreochromis leucostictus* which is early maturing, prolific and small in size. Consequently, ponds stocked with these fingerlings

are often overcrowded with small sized fish with poor market value resulting in economic losses to the smallholder farmers. Importation of improved strain from elsewhere is not recommended due to risk of genetic pollution and diseases (such as deadly Tilapia Lake Virus). There is therefore a need for establishing a selective program to improve performance of existing breed in context of local conditions.

186. Currently the country produces only about 15 million fingerlings from 24 hatcheries across the country partly due to lack of appropriate hatchery management skills resulting in underutilization of installed capacities. The production is not sufficient to meet current demand estimated at 85 million fingerlings per year. Consequently, subsistence fish smallholder farmers are often compelled to use recruits within their ponds for subsequent stockings which results into poor yields due to inbreeding depression. Commercial smallholder farmers often have to wait for some time to obtain fingerling from hatcheries which overburdened by orders. Some commercial fish smallholder farmers at times resort to ordering fingerlings from neighboring countries incurring extra costs and risking introduction of diseases. The programme targets to raise the level of fingerlings production to 25 million fingerlings per year by 2026.

187. There are six (6) government owned Aquaculture Development Centres (ADCs) functioning sub-optimally due to limited infrastructure. The ADCs are Kingolwira – Morogoro, Ruhila – Ruvuma, Mwamapuli – Tabora, Rubambagwe – Geita, Nyengedi – Lindi and Machui – Tanga. These ADCs have inadequate infrastructure and are ill equipped to undertake those functions effectively thus limiting transfer the much needed knowledge and skills in aquaculture BMPs.

188. Fresh-water aquaculture interventions under AFDP will focus on (i) rehabilitating/ developing the basic infrastructure for hatchery production in ADCs; and (ii) building an aquaculture cluster growth model to support and nurture the growth of aquafarmers and aquaculture service providers within their clusters.

Rehabilitating/ developing the basic infrastructure for hatchery production in ADCs

189. The investments will focus on: (i) rehabilitating/ developing the basic infrastructure for hatchery production (including water supply systems, access roads, hatchery facilities, feed mill and equipment etc.) in ADCs (Kingolwira, Mwamapuli and Rubambagwe); (ii) developing the Kingolwira ADC to become a breeding nucleus for producing quality broodstock to be multiplied in other ADCs and private hatcheries for mass production of fingerlings; (iii) strengthening the capacity of ADCs to provide hands-on training on best management practices of aquaculture to aquafarmers and service providers as well as technical support to aquaculture enterprises; (iv) establishing linkages with the small and medium scale enterprises grain millers (possibly linked to the crop seed value chains under the Programme) for the supply of fish feed; (v) and supporting extension services and community outreach including use of lead aquafarmers to make aquaculture economically viable and sustainable (e.g. water channels, standard ponds etc.), improved access to inputs, including capacity to produce locally-made feeds, etc.

190. AFDP investments will therefore finance the following:

- a. Rehabilitation of infrastructures in the ADCs. This will involve rehabilitation of small size ponds, 333 fish ponds, totaling 159,840 square meters each measuring less than 500 sq m, establishment of hatcheries with a capacity to produce one million fingerlings per month, laboratories and water system in the three ADCs.

- b. Breeding and production of broodstocks. This will involve developing the Kinglowira ADC to become a breeding nucleus for producing quality broodstock to be multiplied in other ADCs and private hatcheries for mass production of fingerlings. The Programme will finance the rehabilitation of the hatchery and fish production facilities at the centre and the acquisition of inputs for fingerlings production. AFDP will produce 36,000 Broodstock in the first year increasing to 120,000 in the final year of the Programme.

Table 19: Types of ponds at ADCs

SN	TYPE OF POND	AREA (M ²)	STOCKING DENSITY (Fingerlings)	TARGET No. OF FINGERLINGS
	KINGOLWIRA ADC			
1.	Brood stock	12,000	24,000	12,000,000
2.	Breeding	4,000		
3.	Nursery	3,600		
4.	Growout	28,000		
	MWAMAPULI ADC			
1.	Brood stock	6,000	12,000	8,960,000
2.	Breeding	6,000		
3.	Nursery	1,800		
4.	Growout	48,000		
	RUBAMBAGWE ADC			
1.	Brood stock	12,000	24,000	12,000,000
2.	Breeding	4,000		
3.	Nursery	3,600		
4.	Growout	28,000		

191. **Kingolwira ADC** is currently supporting 1,004 fish smallholder farmers who are getting support through aquaculture extension despite limited infrastructure. Under the programme a total number of 2,000 smallholder farmers are expected to be reached. MADC is currently supporting 232 fish smallholder farmers who are getting support through aquaculture extension despite limited infrastructure. Under the programme a total number of 2,000 smallholder farmers are expected to be reached. Similarly, the **RUBAMBAGWE ADC** currently is serving 146 aquafarmers and will scale up support up to 2000 smallholder fish smallholder farmers (having at least one pond of 300m²) available in Geita Region and close-by districts of Kagera and Shinyanga regions.

Table 20: Rehabilitation of ADC

INTERVENTION	ACTIVITY
Infrastructure development	Rehabilitation of office building
	Construction of hatchery at Kingolwira ADC substation-Boma road
	Rehabilitation of 16 ponds

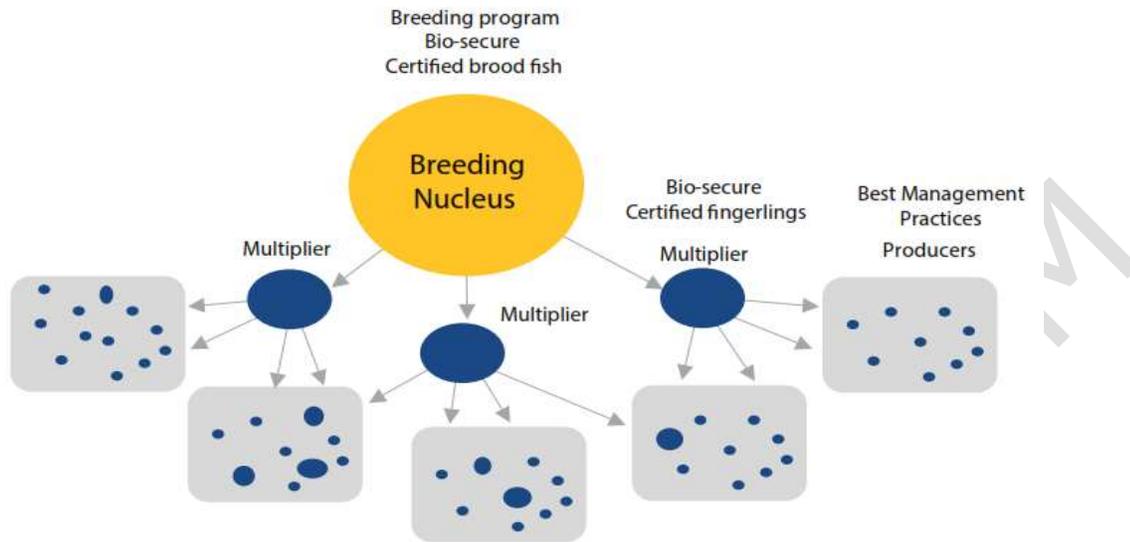
	Construction of 26 fish ponds
	Construction of store, seminar room, office building at Kingolwira substation-Boma road, hatchery and cold room.
	Bio-security setting such as footbath
	Automatic standby generator KVA and Solar systems
	Purchase of fish feed mill
	Construction of a storage facilities
Strengthen Water supply system	Rehabilitation of water supply line for Mwanzomgumu
	Rehabilitating existing reservoir and harvesting surface water runoff and designing water reuse system.
	Construction of new line from Morogoro river catchment
	Rehabilitation of two existing Boreholes (Kingolwira and Kingolwira substation-Boma road) and drilling of two extra boreholes
Designate aquaculture Hatchery development	Tilapia eggs incubation system
	Catfish eggs incubation system
	Fry rearing system
	Fingerlings quality control laboratory with microscopes and other necessary equipment
	Water quality equipment (Multi-parameter Probe-DO, Temperature, pH) Test strips for testing ammonia.
Promotion of aquaculture investment	Re-tooling of staff in extension and business skills
	Kingolwira ADC will collaborate with medium scale investors in fish feeds production.
	Partner with local Government extension officers in providing fish farming technologies and reaching more smallholder farmers
	Special fish farming programs through mass media 2 TV sessions per month on community TV and radios such as Abood TV, SUA TV, Imaan TV; and 4 Radio programs per month using community radios such as SUA FM, Abood FM, Planet FM and Arise FM
	Print media such as booklets and leaflets on best management practices in fish farming
	Use of lead smallholder farmers to demonstrate best management practices in fish farming.
Facilitate capacity building to the ADC	Purchase of 2 Vehicles-Toyota D/Cabin, Land cruiser hard top
	Purchase of 4 Motorcycles

Establishment and strengthening of Aquaculture clusters

192. The ADCs will adopt a cluster growth model through which it will nurture and support growth of aquafarmers and aquaculture service providers within three (3) clusters. Such clusters will be formed during the first year of the programme. ADCs will be linked to, and support the development and provision of services to, at least one aquafarmers cluster in their respective areas.

193. It is envisioned that Kingolwira ADC will become a breeding nucleus for producing quality broodstock which will be multiplied in other ADCs and thereafter distributed to private hatcheries for mass production of fingerlings (Fig 7).

Figure 7: Linkage between ADCs, service providers, Lead smallholder farmers



194. Aquafarmers clusters, in this case, refers to a group of smallholder farmers located in the same local area and often sharing the same source of water or other vital inputs, and who are organized for collective functions and services. Such smallholder farmers will be expected to collectively implement certain production standards and Better Management Practices (BMPs) at the farm level, ensuring responsible, sustainable and high-quality aquaculture production in a specific locality. Aquafarmers clusters are necessary partly because irresponsible water use and bad management practices of one farmer have the potential to affect other smallholder farmers within the same cluster as well. Through this programme, clusters will be formed around ADCs.

195. The focus of cluster formation will be to improve production practices, decrease the cost of farming and ensure economic viability; minimize disease occurrence or other causes of fish mortality; improve environmental conditions; facilitate collective marketing and develop sufficient economies of scale in accessing inputs, knowledge and technologies; and adhere to codes of practice or BMPs as a group. Through the clusters, aquafarmers will get information, from the ADCs, in good pond preparation, high-quality seed selection, water quality management, feed management, fish health monitoring, food safety, market information and environmental awareness.

196. The clustering will be carried out with a set of criteria including: (i) concentration and commitment of smallholder farmers engaged in the production and marketing of fish, (ii) proximity to each other for clustering to ensure they are not widely scattered across the districts; (iii) proximity to ADC and to markets; (iv) potential for commercialisation and expansion of aquaculture; and (v) poverty and inclusion targets set by the programme.

197. ADCs will play the role of an aquaculture knowledge hub where aquaculture experts are located and are in positions to access, accumulate, synthesize and disseminate local, regional and international knowledge and expertise for the benefit of aquaculture value-chain actors. The ADCs will also demonstrate various aquaculture practices and will offer good opportunities for transferring practical knowledge and skills to new entrants and existing operators in all elements of the aquaculture industry as well as supplying products to the smallholder farmers. At the ADCs, the focus will be to rehabilitate breeding, broodstock,

nursery and grow out ponds, which will lead to fingerling production totaling about 25 million annually once all nursery ponds have been put to use. This will be achieved from rehabilitating 9,000 square meters of the nursery ponds, each square meter stocked with approximately 200 fingerlings on a monthly production cycle.

198. In the cluster, ADCs will work with aquaculture service providers and lead fish smallholder farmers whose capacities in aquaculture will be enhanced so that they can act as avenues for easy access and the transfer of knowledge to fish smallholder farmers. Such service providers would include but not limited to non-state actors such as fish farmer's associations/ co-operatives, Non-governmental organizations and community-based groups. Lead smallholder farmers are individuals willing to share knowledge and skills (farmer to farmer) and are good performers in fish production in the community. This model is also expected to drive aquaculture practice by increasing smallholder farmers production to between 40,000 – 50,000 tons annually. It is also expected that private sector will also continue production. The number of fish smallholder farmers is also projected to increase from 2,021 in 2020 to 5,434 by 2025 (Table 21). Through this AFDP investment, the expected yields per farmer is expected to rise from the current 0.6 tons to 2.4 tons per year.

Table 21. Projected fingerling production from AFDP investment

Production Centers	Projected fingerling production from AFDP investment between 2021 to 2026					
	2021	2022	2023	2024	2025	2026
Projected fingerling production from ADCs ('000)*	7,614 (30%)	17,766 (40%)	25,380 (30%)	25,380	25,380	25,380
Programmeed number of Fish smallholder farmers	2,438 (15%)	2,852 (17%)	3,423 (20%)	42,79 (25%)	5,434 (27%)	7,064 (30%)
Programmeed Smallholder farmers ponds in Sq. m ('000)	5,851.2 (13%)	6,844.8 (17%)	8,215.2 (20%)	10,269.6 (25%)	13,041.6 (27%)	16,953.5 (30%)
Programmeed smallholder farmers fingerlings ('000)	119,932 (158,699 (41%)	197,466	236,233	1275,000	313,767

Note: * - It is expected that during implementation 30% of fish ponds will be rehabilitated in the first year, 40% in the second year and the remaining 30% in the third year. Production will therefore remain constant till end of Programme period at the ADCs.

- The percentages in brackets show annual increase

199. Support smallholder farmers' access to aquaculture inputs. This will enable smallholder farmers to access fish farming inputs through micro-loan channelled through the smallholder farmers associations. Through AFDP programme, ADCs will provide selected fish smallholder farmers, with subsidized start-up inputs, especially for the first and second cycles of fingerlings and feed, through a cost-sharing (80% from AFDP and 20% from fish smallholder farmers) mechanism based on the need of the smallholder farmers. This start-up inputs provision will be managed by the ADCs through their Fish farmer cooperatives. Fish smallholder farmers will be identified if they own a fish pond.

200. Support aquaculture extension services: Extension services will be provided through aquafarmer clusters. The Programme will therefore support organization of smallholder farmers clusters. This will be a step-wise process, starting with formation of smallholder farmers associations where smallholder farmers are not yet organized. Gradually the Organizations will be strengthened to transform them into one (1) fish farmer co-operative societies, in each ADC area, thus a total of three cooperatives as a start will be formed under AFDP. Training, to small-holder fish smallholder farmers, will be offered, at each ADC by aquaculture extension officers at the ADCs, in the areas of production of seeds as well as feed and pond management, and importantly, in business skills and organization management. These are expected to increase production by at least 20,000 tones a year.

201. Other activities include refresher training for ADCs' staff to provide hands-on training on best practices and business skills to effectively offer technical support to aquafarmers (including identification and support of lead aquafarmers) and service providers. In addition, AFDP will support Aquaculture Field and business schools as a means of reaching the fish smallholder farmers in their farms. Capacity of ADCs for extension will also be strengthened, including the basic infrastructure and facilities for operations and logistics, such as office and accommodation facilities, vehicles for extension services etc.

202. In addition, the programme support the establishment of a commercial fish feed plant, preferably by an existing private livestock feed miller who can partner with ADCs and fish farmer cooperatives to produce fish feed to supply the established clusters. This could be possibly linked to the crop seed value chains under the Programme for the supply of fish feed.

Increasing mariculture productivity and output.

Increase production of high value seaweed

203. Production within recent years has declined in Unguja, Zanzibar (increasing tourism industry), is stable/semi-declining in Pemba, Zanzibar and is stable/semi-declining on the mainland. 83 villages are farming seaweeds across Zanzibar, with 50 in Unguja and 33 in Pemba—notably, 25% of current production is from Unguja whereas 75% is from Pemba. In certain village communities that have been most significantly impacted by increasing tourism (e.g., Pwani Mchangani which has seen multiple hotels built within the past 5 years), these impacts have included restricted access to the beach and farm sites (i.e., land access from villages to the beach is restricted by construction and development of hotels). Production of seaweeds linearly increased from 880 MT in 1990 to a peak in 2012 at ~17,000 MT, but has declined to between ~6-7,000 MT or 11-15,000 MT in recent years

Table 22: Challenges and proposed interventions in seaweed production

CHALLENGES	PROPOSED INTERVENTIONS
(1) PRODUCTION	
Vegetative propagation (i.e., asexual budding of a single 'sprig' of seaweed) is the common method of planting seaweeds; challenge is that this leads to no genetic and seed diversity in the production system.	-Scientific research and development in the following areas: (1) strain evaluation (e.g., multiple strains evaluated in multiple geographies to determine and optimize growth rate and carrageenan), (2) production method evaluation (e.g., multiple methods in multiple geographies for same outputs as listed above), and (3) evaluation of climate-resilient strains. The research should be at a 'commercial scale' and

	<p>integrated into existing farming activities to increase transferability</p> <ul style="list-style-type: none"> -Establishment of an experimental nursery and ultimately a hatchery
<ul style="list-style-type: none"> -Not meeting optimum production (20,000 tons per year would be a target for all of Tanzania, peaked in mid-2010s at 17,000 tons per year, but is currently ~6-7,000 tons per year) -Scattered smallholder farmers, low level of production per farmer -Low awareness and understanding of environmental and social issues of seaweed farming 	<ul style="list-style-type: none"> -Form village-level clusters of smallholder farmers (circle, cooperative, or existing governance structure) with a target for production -Education to increase awareness of appropriate production methods, financial management, and environmental impacts (<i>particularly youth engagement</i>) -Microfinance/investment in inputs—create novel framework for sourcing of inputs -Extension services to provide education
<ul style="list-style-type: none"> -Climate change impacts are being observed (maximum temperature today is higher than 10-20 years ago) -Issues with low viscosity of seaweeds (this has declined over the past 10-20 years) 	<ul style="list-style-type: none"> -Scientific research and development regarding climate-resilient seaweed strains and those with better viscosity
<ul style="list-style-type: none"> -Unclear seaweed management (previous management policy developed in 1980s) and existing policy impacting production and business environment (e.g., VAT applied to materials used for seaweed farming, but NOT to materials used for agriculture) 	<ul style="list-style-type: none"> -Develop and instate a revised seaweed management policy for Tanzania with input from all key stakeholders
<ul style="list-style-type: none"> -Mangrove stakes / cheap vinyl lines and environmental impacts from visiting sites 	<ul style="list-style-type: none"> -Education campaigns for smallholder farmers on reducing environmental impacts -Alternatives to mangrove stakes and cheap vinyl lines (note that the use of cheap vinyl lines is tied to a deeper policy/economic issue)
2) STORAGE AND PRESERVATION	
<ul style="list-style-type: none"> -Quality issues (smallholder farmers adding water, sand to product at the time of sale, other challenges) 	<ul style="list-style-type: none"> -Education and monitoring to improve quality -Cluster-based enforcement mechanisms (e.g., village-based clusters made aware of those 'cheating' the system and enforce internally)
<ul style="list-style-type: none"> -Farmer storage challenges 	<ul style="list-style-type: none"> -Education and awareness on best practices for storage of seaweeds prior to sale
<ul style="list-style-type: none"> -Drying materials and facilities (particularly during rainy season, <u>post-harvest losses can be significant during rainy season</u>) 	<ul style="list-style-type: none"> -Education of best practices for drying (e.g., techniques to dry quicker) -Drying racks and tools to improve drying -Drying warehouse/facility → solar dryer

204. Production of *Kappaphycus* has significantly declined in the past decade given increased incidences of 'ice ice' disease and other production challenges (e.g., extensive herbivory), nearly all smallholder farmers have transitioned to *Eucheuma* production. Notably these red seaweeds that are continuously replanted represent asexually reproduced seaweeds meaning that these are small branches or bunches of a mother plant. There is little to no genetic diversity in the crop of seaweeds produced in Tanzania, yielding substantial risk to production.

205. Cultivation methods primarily rely upon shallow-water farming using ropes and wooden pegs (peg and line method)—small branches of red seaweeds are tied to these ropes for cultivation. In some cases, deeper water farming production methods are being adopted with substantial performance improvements—including improved growth rates and reduced

disease incidence (e.g., Tumbe Village, North Pemba, Zanzibar), but have unique challenges such as challenges to access, maintain and harvest—alongside unique safety challenges (e.g., lack of swimming knowledge). Notably, depending upon where the peg and line method is utilized (e.g., the sheltered, low energy site at Tumbe Village, Pemba vs the rocky, high energy site at Makangale, Pemba) the line material used can last as long as 6 months, or as little as 1 month indicating a need for trainings in best practices for environment- and site-appropriate farm methods.

206. The current method of cultivation relies upon vegetative propagation (i.e., reserving a few branches of red seaweeds from the harvest for re-planting). This method has yielded no genetic diversity in the cultivated crop. There is an important need for research into sexual reproduction of seaweeds to: 1) improve genetic diversity, 2) examine the potential for 'climate resilient strains' of seaweeds, and 3) improve the quality of the product yielded from the seaweeds (e.g., current seaweed is plagued by reduced viscosity, research could identify strains with improved viscosity). This will also include similar research into optimization of native strains, and will involve or require collaboration between researchers, smallholder farmers, industry, and other stakeholders who are currently not interacting in a meaningful capacity.

207. **Develop high value seaweed seedlings.** Two species namely; *Euचेuma denticulatum* (*E. spinosum*) and *Kappaphycus alvarezii* (*E. cottonii*), the red seaweeds species produced for high-value extract known as carrageenan, have been farmed since in Tanzania. In large part, the seaweed farming operates at subsistence level, with an overall average annual production of 11,000 tons (10,000 tons from *E. spinosum* and 1000 tons *E. cottonii*). Production is undertaken by individual households owning seaweed production units, typically consisting of an average of 50 ropes of 15-20 meters length from which they harvest on average about 400 kg per farmer annually. Seaweed production is irregular because weather changes sometimes lead to die-offs often occurring during the long rainy season, when smallholder farmers can lose up to 3 out of 8 harvests that make up an annual cycle. With the proposed new seeds, and improved drying facilities, such losses will significantly reduce or completely eradicated.

208. **Zanzibar Agricultural Research Institute (ZARI)** with the propagation technology will carry out laboratory tissue culture and multiplication in designated ZARI plots to produce at least one ton of *E. cottonii* to be multiplied in smallholder farmers plots. About 100 smallholder farmers will be selected to the testing. ZARI will establish the production cycle during the propagation and trial. Investment in *E. cottonii* will notably increase incomes to small holder smallholder farmers with just a little increase in production. The programme will finance the rehabilitation of ZARI laboratory, procurement of laboratory equipment, reagents and inputs for tissue culture and on farm multiplication, seaweed micro-propagation, field testing at smallholder farmers' fields (10 villages four in Pemba and 6 in Unguja, 10 pilot smallholder farmers per village and train at least 5 staff, 100 pilot smallholder farmers and 150 young people. Smallholder farmers will be provided with subsidized seedlings for the first cycle and subsequently through a micro-credit system. The micro-credit will be administered within the framework of VICOBA (funded by TADB and/or by the Programme).

209. AFDP will aim to increase *E. spinosum* smallholder farmers inputs from the current 50 ropes to on average 400 ropes per farmer and introduce *E. cottonii* variety to smallholder farmers. It is targeted that smallholder farmers of *E. cottonii* will be provided with inputs to farm using 100 ropes. Production from *E. spinosum* will increase production from 400Kg to up to 160 tons per farmer annually. While production from *E. cottonii* will stand at 800 kg per farmer per year at the beginning. This is expected to rise to 1.5 tons per farmer per year when the smallholder farmers adapt to farming in deep waters. To achieve this target, AFDP will aim to increase the size of farms from the current 75m² to 150m² per farmer for the 6000

E. spinosum smallholder farmers targeted. This will lead to increased production of *E. cottonii* to 256,000 tons and *E. spinosum* to 1,280 tons per year.

210. **Production Innovation:** Researchers from the Institute of Marine Science in Zanzibar have partnered to develop innovative farming techniques to produce higher valued *Kappaphycus*—moving production from shallower to deeper waters (i.e., 2-6 m at low tides where conditions are more stable and temperatures are lower) using floating line systems. These floating line systems are comprised of plastic bottles used to float lines that are anchored using bags filled with sand. Experimental trials have indicated higher growth rates for *Kappaphycus* with minimized mortality. Additional trials have been conducted with bamboo rafts, as well as the use of ‘tubular’ nets that were pioneered in Brazil for seaweed production. Each of these technologies has yielded enhanced production of *Kappaphycus*, but come at the cost of increased complexity and production cost.

211. AFDP will invest in: (i) improving the quality of seaweed seeds, by developing capacity to produce high quality seedlings for the two common varieties namely *Euchaema cottonii* and *E. spinosum*, through improved vegetative propagation and other technologies; (ii) promoting new seaweed production methods and labour-saving technologies (small boats to access farming grounds in the ocean, and rafts for seaweed farming); (iii) promote incentives to encourage youth participation, so as to increase productivity.

212. **Support smallholder farmers to acquire equipment and inputs for deep-water farming.** Seaweed smallholder farmers will be supported through a micro-loan system to be managed by the Programme and/or TADB, to acquire small boats and construction of rafts for seaweed farming in deeper waters where *E. cottonii* farming can successfully be undertaken. The amount to be given to each farmer will be determined after identifying the potential acreage that each farmer can manage. AFDP will target accessing smallholder farmers to 700 ropes. The micro-loan will be managed through a VICOBA framework by the seaweed smallholder farmers through the Programme coordination.

Promotion of mariculture

213. The Programme will support the rehabilitation of two (2) Maricultural Training facilities (one each in Unguja and Pemba) which will be used to develop skills to the youth and women to increase productivity, reduce risks of diseases, ease workloads for women and promote adoption of improved production methods. The training facility will be operated under the Vocational training Agency (VTA) Mkokotoni in Unguja and VTA in Mtongoji in Pemba.

214. The facility in collaboration with Zanzibar Fisheries Research Institute (ZAFIRI) will carry out studies on breeding and feeding of potential mariculture species besides the common sandfish (sea cucumber), Mud crab and Milkfish whose experiments are either done or currently ongoing. The aim is to increase not only the species farmed but also level of production from mariculture to about 5000 tonnes annually from the current production of about 1500 tonnes.

215. The facility will drive the formation of farmer field schools where the trained youth and women will provide outreach services to the targeted 25000 seaweed smallholder farmers. Such field schools will be established among smallholder farmers. They will be operated by the department of fisheries.

216. Juvenile receiving center: The facility as well as the farmer field schools will also be used as juvenile receiving centers. The Zanzibar hatchery, when up and running, will produce millions of species. These will be distributed to smallholder farmers in Pemba and Unguja through the juvenile receiving centers.

Sub-component 2.2. Fish market development and value addition

Activity 2.2.1. Reduce fish postharvest loss

217. It is estimated that currently post-harvest loss for Dagua is as high as 80% during the rainy season while for other fish species including shrimps, post-harvest loss averages between 30 to 40%. The Programme will focus on investing in infrastructure and technologies for value addition and reducing postharvest losses, encouraging women and youth participation.

218. The Programme will target investments in infrastructure and technologies for reducing postharvest losses and value addition, encouraging women and youth participation. The Programme will invest in (i) eight (8) ice-making plants to ensure fishers have access to ice; (ii) three (3) cold-supply chain facilities and fish processing plant; (iii) ten (10) solar dryers/tents for seaweed and small-pelagic "dagaa"; and (iv) 80 dagaa drying racks; (vi) construction of two (2) fish markets to improve quality of fish onshore.

219. These will be owned and managed by cooperatives/associations as business entities, and by small and medium scale enterprises as well as 4P arrangements. Furthermore, to operate these infrastructures, the programme will invest in enhancing capacity of fisher associations/cooperatives (to include youth) for distribution, and marketing of small-pelagic fish. The programme will link fishers cooperatives and associations to TADB partner FIs, for the financing of related investments (equipment and infrastructure), working capital and asset financing (for equipment, storage and transportation). Considerations will be made to target youth and women led groups.

220. **Cold chains facilities:** Includes- two (2) cold-supply chain/rooms of 40 tons facilities in mainland Tanzania; two (2) refrigerated trucks, and; five (5) Ice making plant with capacity of producing ice blocks of up to 10,000kg/day. These will be owned by the newly established Fisher cooperative Societies. The actual specification of these cold chain facilities will be determined by the level of fish landings in each site. The target is to have at least ice making plants in all the Programme targeted landing sites, facilitate acquisition of cold rooms to the landing site with the highest quantity of fish landed.

221. **Fish drying infrastructure:** - 10 solar dryers/tents for preservation/processing seaweed and small-pelagic "dagaa"; 80 dagaa drying racks; installation of 4 electric driers for small pelagic; innovative fish-based value addition technologies and product development and linked to higher value markets, encouraging youth and women participation. These drying infrastructures will be owned by Fisher cooperative societies; and

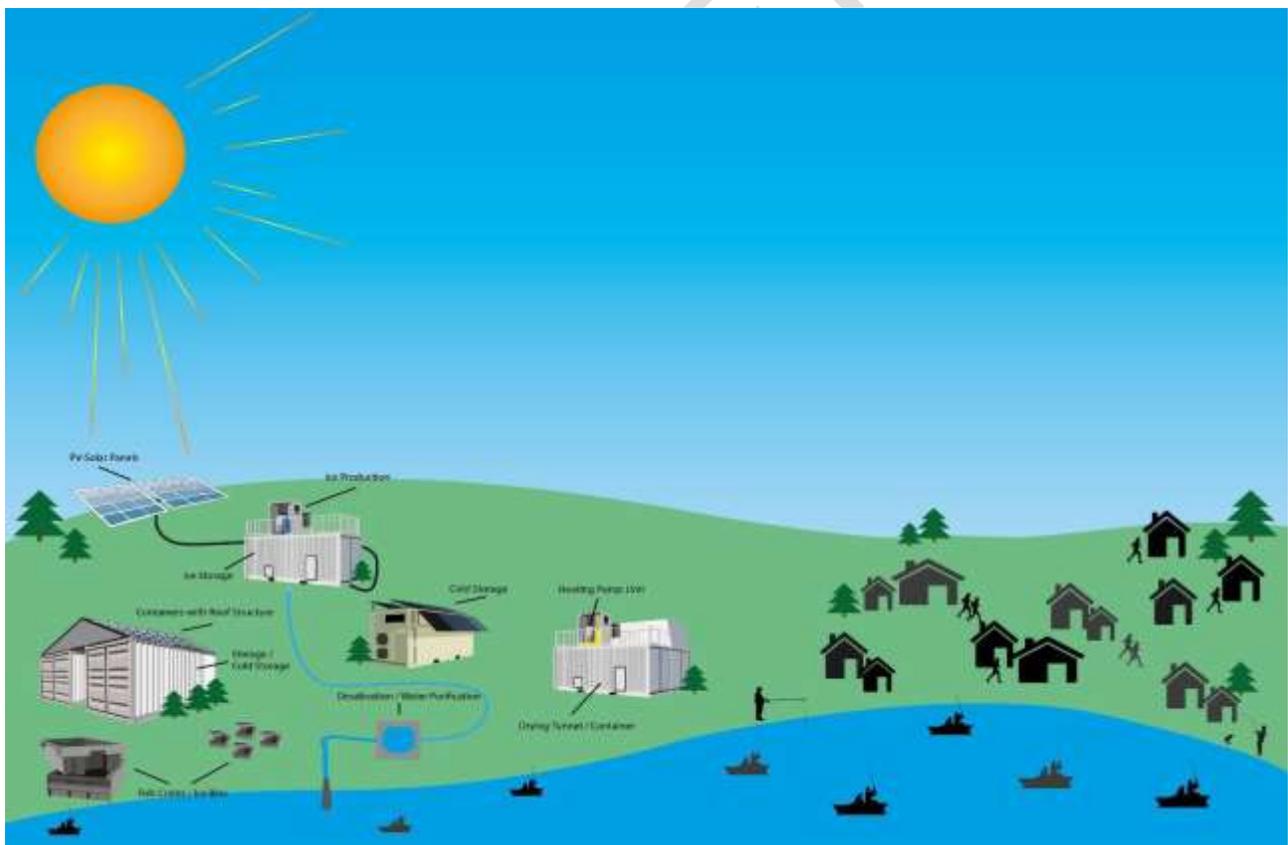
222. **Fish markets infrastructure and landing sites:-** Construction of 2 fish markets in Pangani and Bagamoyo fish landing areas to among others improve quality of fish onshore. The proposed markets will create market place to local small-scale fish traders and fishers as well as local rural vendors to sell their goods and services hence improve their incomes. The markets will be jointly managed and operated by a board appointed by the Fisher Cooperative society and the District Council under cost-sharing arrangements as is the case with other existing similar fish markets such as Ferry markets in Dar es Salaam, Mwanza and Kigoma respectively. AFDP will support a well-designed user friendly, cost effective and a multipurpose modern fish market measuring 3312.5 sq m. The markets will comprise 13 components including Fish frying center, Auction market fish handling and preservation facilities which will cater for storage of more than Ten (10) tons of fish a day. There will also be shops for the anticipated fish cooperative society, fish frying and a location for women small-scale traders. The government has already undertaken a feasibility of the facility at Bagamoyo as well as Environmental and Social Impact Assessment. What remains is construction.

223. Support to MLF to strengthen their extension programme. AFDP will support Ministries in charge of fisheries both in mainland and Zanzibar to effectively provide extension services

to the fisheries cooperatives and fishers. The programme will fund items such as transport facilities (cars, motor cycles), production of extension materials, such as booklets, brochures leaflets, Tv and radio programmes).

224. **Fish landing infrastructures.** AFDP aims at providing artisanal fishers and fish traders with appropriate fish landing infrastructures, fish handling, processing and storage facilities so as to guarantee safety, quality of fishery products and reduction of post-harvest loss to ensure food security. It is envisaged that the proposed Programme will have trickle down effects including generation of employment, income, food protein and reduction of poverty. It will further enhance national foreign exchange earnings and government revenue collection. The potential areas proposed for the establishment and construction of cold storage, ice making facilities, drying and smoking kilns and purchase of refrigerated trucks along the Indian Ocean specifically are Dar es Salaam, Bagamoyo, Pangani, Mafia and Kilwa. Proposed investment in landing sites which includes Ice production Plant, Storage facilities and Drying racks and solar driers.

Figure 8: Fish landing infrastructures



225. **Ice Making:** Tanzania consists of a large number of artisanal fishers and a few commercial, large scale fisheries companies. All these players in the fisheries business require ice for their business, particularly effective storage of fish and fish products as a result, the demand for both block and flake ice is high in the domestic market. This high demand is

attributed to the fishing operations but also in other sectors of the economy. The growth prospects of the sector suggest that the demand for ice will also increase enormously. The demand for ice by both fishing vessels and small-scale fishers is huge, according to annual fisheries statistics (2018), the annual fish production in the country is 376,352 metric tons, of which 86% of these are from freshwater and 14% from marine waters. About 80% of the fish production need to be stored in ice, whereby for each kilogram of fish requires one kilogram of ice. On the basis of this understanding, the annual demand for ice in the country is 301,082, representing a huge market size for ice. The involvement of more people in fishing activities including TAFICO fleets when start operations in the EEZ will also increase the demand for ice. The business is dominated by small scale players who supply ice to artisanal fishers in small quantities. There is no single supplier of ice with a substantial supplying capacity.

226. There are different types of ice that could be used for commercial purposes. The Programme is expected to make two major types of ice: .

- *Block ice/crushed ice:* Block ice is preferred by fishermen in many parts of the Country because it lasts longer and takes up less space in the fish hold. However, for block ice to be used effectively for storage of fish, and to make full use of its cooling power, it first has to be crushed or ground into small pieces. The majority of fishers break block ice into smaller pieces by simply using an ice pick or hammer. A much more effective means of crushing block ice is to use a mechanical grinder or crusher that can reduce block ice to small pieces of 1 cm × 1 cm or smaller.
- *Flake ice:* Flake ice is relatively easy to use since it does not need crushing before use. Because it is slightly subcooled during manufacture and can be packed well around fish, it may be more efficient in cooling fish than crushed block ice. However, because it has a higher surface area and holds a lot of air, it takes up more room in storage and melts more quickly than uncrushed block ice. The Programme will produce and sell flake ice to customers who do not prefer block ice.

227. The ice making Programme will be managed by TAFICO, but operations will be conducted in major fishing points. The Corporation owns various infrastructure and facilities in some of these locations that could be useful for the ice making Programme. Likewise, in fishing Programmes, ice making Programme can be run in partnership, otherwise TAFICO will seek the guidance, facilitation, collaboration, partnership, or support of the following institutions the way Programme could be operated under the Public-Private Partnership (PPP) mode.

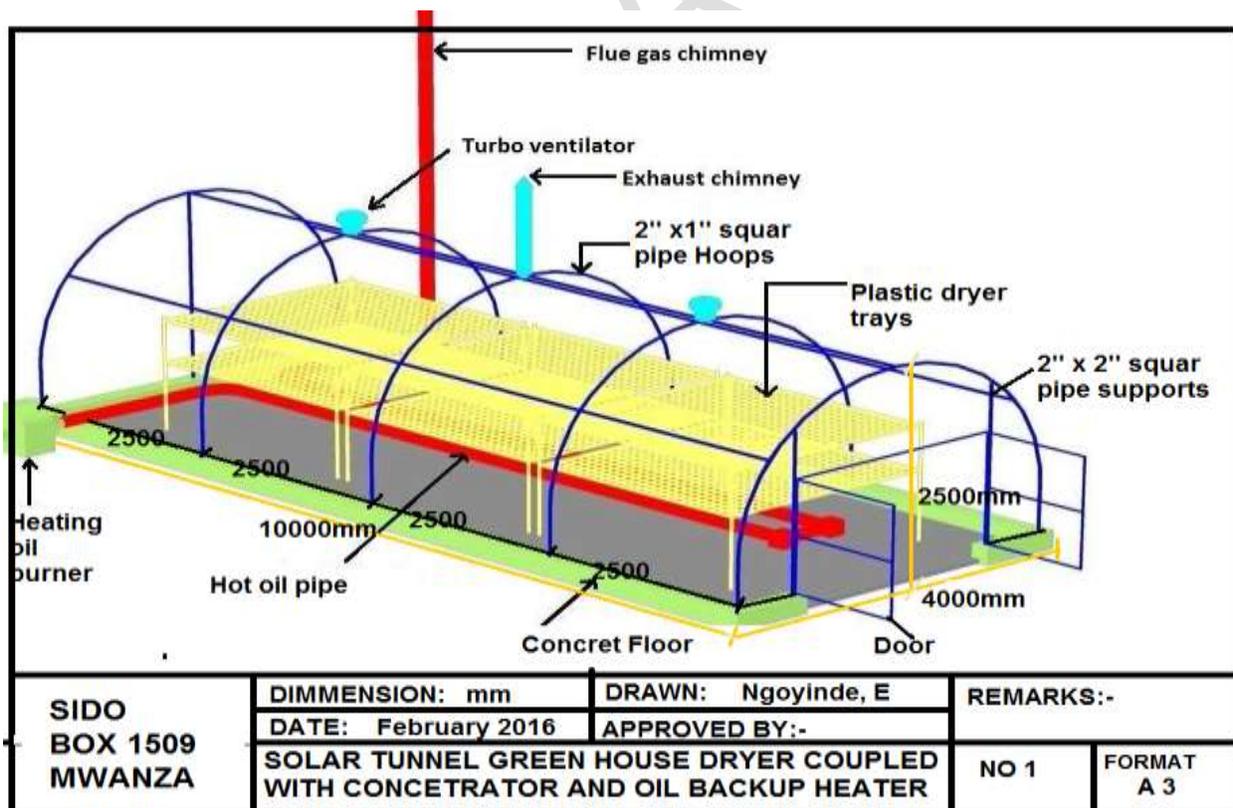
228. **Cold storage:** The provision of cold storage services is among the economic activities that emerged as a result of robust fishing operations. Tanzania consists of a large number of artisanal fishers and a few commercial, large scale fisheries companies who require cold storage services for the effective storage of their fish and fish products. The demand for cold storage facilities in the domestic market is unsaturated. Currently, there no big establishments providing cold storage facilities. The business is dominated by individual players who provide cold storage services using mainly domestic freezers. The absence of large-scale providers of cold storage services and high demand for these services makes this Programme highly valuable in terms of investment priority of the TAFICO.

229. After installation of necessary equipment and facilities, the operations of the cold storage Programme will start by soliciting stock of fish from various customer groups. A large stock of fish is expected to come from TAFICO fishing Programme (which operates fishing vessels). Other fish stock will come from industrial and individual customers. The Programme will gain returns by charging storage costs depending on the type of customers. The pricing

strategy indicates that different customer groups will pay different prices; hence the Programme will gain differently from those customer groups. The facilities will be installed in major fishing points along the Indian Ocean (Dar es Salaam, Bagamoyo, Pangani, Kilwa, Mafia and Mtwara, etc.) since the Corporation owns various infrastructure and facilities in some of these locations preferable for the cold storage Programme. The corporation should find an appropriate party to run the Programme in partnership, the Programme could be operated under the Public-Private Partnership (PPP) mode.

230. **Fish/Dagaa Drying and Smoking:** Fish handling and processing is mainly practiced using traditional methods such as sun drying and smoking. However, Sun drying of these products takes an average of 6-8 hours a day and mostly carried by wooden boxes, baskets, plastic buckets and basins. Interventions in drying methods can be improved significantly through utilization of drying racks or mechanical drying, rather than the traditional methods mostly on the ground, sand, rocks, etc. Drying racks are not difficult to implement but it requires some minor investments and some maintenance. Mechanical drying would be an excellent option, but it requires significant investments and also an energy source that is not easily available on landing sites. The need for energy also adds to cost. However, the quality of the fish would exceed all quality levels obtained so far in Africa. If one would target the EU market, that would be the only option as it is the only one that can guaranty a non-contamination by birds and insects. An alternative could be the use of greenhouses while the fish would be kept off the ground.

Figure 9: Solar Tunnel green house dryer



Activity 2.2.2. Increasing value/income from aquaculture production

This will involve (i) development/ strengthening the ADC-Smallholder farmers clusters and linkages with private sector hatcheries; (ii) establishment of aquaculture field/business schools to facilitate learning for fish smallholder farmers reaching youth and women; (iii) enhancing collective marketing strategies; (vi) expanding market horizon for farmed fish and basic cold chain facilities (e.g. cool boxes).

231. Often these lack relevant knowledge and skills in aquaculture. Furthermore, there are limited demonstration units where Best Management Practices (BMPs) for hatchery, feeds and feeding, and grow-out operations can be demonstrated and much needed knowledge and skills be transferred to aquafarmers. It is therefore, Government's desire that ADCs transfer knowledge and skills to new entrants, existing aquafarmers and service providers with all elements required to operate profitable aquaculture ventures.

232. Under AFDP the clusters will facilitate and/or make it easier for fish smallholder farmers clusters to access the following functions and services;

- a) Input supply - bulk-sourcing of production inputs (fish seeds, feeds, equipment), and to negotiate the price of such inputs, ensuring that smallholder farmers can get inputs at the lowest possible price
- b) Extension services – Extension services will be provided to smallholder farmers within the cluster arrangement, which is a cheaper and easier way to provide such services.
- c) Training - In addition to extension, smallholder farmers will receive training in literacy, numeracy, basic accounting and report-keeping, to help members manage their own business activities better
- d) Quality control - Working together in the clusters will allow to monitor and control the production process, ensuring better quality and safer produce and overall responsible and sustainable aquaculture farming
- e) Coordinated production – Members will organize and coordinate their production to take advantage of different market opportunities and to stagger the stocking of their ponds so as to supply a continuous amount of fresh produce throughout the year.
- f) Collective marketing – Working together will enable small-scale smallholder farmers to be able to market their products through a collective bargaining mechanism.
- g) Local aquaculture governance – Clusters will provide opportunity for various actors to participate in governing of aquaculture activities.
- h)

Activity 2.2.3. Seaweed value chain development:

233. The benefit of a value-chain based approach is to maximize profit for communities, improve price stability, maximize employment opportunities, diversify markets and products, maximize downstream economic benefits, and to develop an overall strategy to maximize economic value. A scoping mission and stakeholder consultations conducted by The Nature Conservancy (TNC) to scope opportunities for intervention within the seaweed farming sector in Tanzania identified the following challenges and proposed interventions to improve environmental performance and livelihood benefit.

Table 23: Challenges and proposed interventions in seaweed production

CHALLENGES	PROPOSED INTERVENTIONS
PROCESSING AND VALUE ADDITION	
->99% of current market is for export, whereas <1% is used for local products – concern regarding volatility in the global market and	-Diversify use of seaweed products (e.g., research into use as a 'binding agent' for poultry feeds rather

challenges with local market sales and diversification (concern over if global market turns, Tanzanians may not have a market to sell their seaweed to)	than the use of cassava at present, direct food consumption) -Improve quality and finishing of local products (standards) -Awareness campaigns
-Challenges with 'cheating' smallholder farmers (e.g., adding water, adding sand, etc. to increase weight) -Challenges with those selling direct to exporters instead of those that have invested in and provided gear and materials to smallholder farmers (termed 'developers')	-Establishment of village-level clusters could be a sound mechanism to ensure compliance and reduce instances of 'cheating' -Government could support enforcement of cluster bylaws (through village steering committees)
TRANSPORTATION	
-Big challenge of transport from sea → drying on shore -Barges often made of plastic/fiberglass -Need a better tool to transport to the buyer; few boats currently	-Barges to transport from sea to shore – more durable -More boats are needed to transport products; perhaps 'communal' boats for clusters (1 boat shared by many)
MARKET	
Current market consists of: -Developer: C-Weed Corporation -Trading exporter: Zanea, Zascal, ZanQue, other smaller and transient (Chinese buyers) -Challenges with developer investment in inputs, some smallholder farmers choose to sell to exporting trader (e.g., need for 'free' and 'fair' trade) -Access to capital and loans	-Strategic policy from the government (Ministry of Trade) to improve business environment – distinguish developers vs trading exporter -Discuss market issues at government committees – need to safeguard interests of the developer and farmer are protected -Need to hold immediate stakeholder meeting to address this issue → have Permanent Secretary or representative at the meeting → report generated from meeting published and discussed at Ministry-level
BUSINESS MODEL	
Weak cooperatives, organization, and ability to collectively bargain -See detailed description below	-Strengthen cooperatives -Strengthen cluster initiative -Extend cluster initiative to mainland Tanzania (<u>human resources to talk to the people, smallholder farmers, exporters, governments, and associated institutions</u>) -Exchange opportunities for Zanzibar cluster members to attend mainland and communicate how it works -Need training support

234. Seaweed processing and value Addition: Processing and value-addition were identified as the 3rd major challenge facing the sector. The main challenges requiring intervention were around quality and meeting standards requirements (e.g., Bureau of Standards) in order to sell products. Significant efforts are underway, including Programmes funded by the Tanzanian government, FAO and other international aid organizations to improve production of value-added seaweed products, but challenges exist regarding market acceptance and quality/consistency of these products (i.e., not meeting Bureau of Standards requirements, which can be expensive to receive certification from). A lack of youth engagement in the sector was often described, particularly given the perceived low prices and profits that are yielded from the sector.

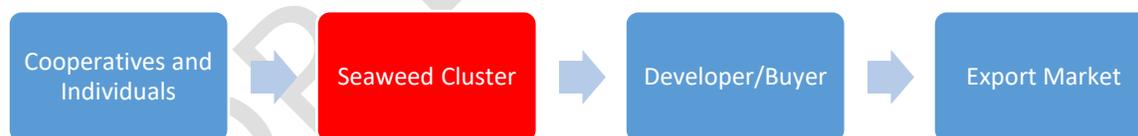
235. Seaweed smallholder farmers sell raw dried product through middlemen without any value addition. The buyers to a large extent directly determine the price which indirectly affects how much is produced. Selling raw unprocessed seaweeds promotes perennial low

prices and subject seaweed smallholder farmers to permanent dependency on the middlemen. The programme will (i) strengthen seaweed clusters and cooperative societies to enhance access to markets and increase the competitiveness of seaweed value chains and identify opportunities for improving the competitiveness of seaweed; (ii) equip women cooperatives and groups with seaweed processing and value addition equipment (seaweed drying racks and solar dryers, milling machine/plant, packaging materials); (iii) enhance women’s capacity on standards and quality control; (v) facilitate the emergence of seaweed small and medium enterprises and their linkages with financial institutions and business service providers, and (vi) promote the engagement of youth in seaweed value chain activities to increase sector productivity and create employment.

236. Seaweed farmers will be supported to construct 50 seaweed drying racks and solar dryers. This drying system will ensure that air easily circulates through the seaweed to assure good ventilation and quick drying. The drying racks will be built in such a way that transparent sheets are placed on top to limit contact with rains. In an area of 100 square meters, approximately 80 lines of mature seaweed. Through a cost-sharing grant, the smallholder farmers will acquire five (5) milling machine/plant to convert raw seaweeds to powder. AFDP will partner with TNC who have market linkages to provide smallholder farmers with necessary skills in processing quality products which are competitive. Smallholder farmers will then be trained on packaging and other value addition technologies. At the same time the capacity of women and youth seaweed smallholder farmers will be enhanced on standards and quality control. Dry seaweeds will be sold to seaweed buyer in Zanzibar while it will also be used to produce powder for use in other products such as making soap, juices, foodstuffs.

237. The programme will adapt and scale up an inclusive business model for seaweed promotion currently practiced in Zanzibar to Pemba and mainland Tanzania so that the ‘seaweed clusters’ could yield an enforcement mechanism to ensure compliance with agreed upon standards (e.g., reduce ‘cheating’ and promote efforts to meet production targets) and allow for collective bargaining to improve prices received for seaweed.

Figure 9: Seaweed value chain



C. ACCESS TO FINANCE

I. Strategy and approach to facilitate access to financial services for AFDP beneficiaries and other value chain actors

A. Need for financial services

238. The table below summarizes identified needs for financial services for the different categories of programme beneficiaries, with potential financial service providers. It also includes financial needs of other value chain actors which do not benefit directly from programme investments but provide key services to the beneficiaries, and for which the programme may facilitate linkages with financial service providers.

Table 24: Identification of financial needs and potential service providers

Category of beneficiary / value chain actor	Financial needs	Potential financial service provider
Crop seeds value chain (maize, sunflower, beans / pulses)		
Certified seeds producers (SMEs, Cooperatives)	<ul style="list-style-type: none"> - Working capital for inputs and labour costs, small equipment, etc - Asset financing for production and storage equipment - Savings and payments - Insurance (crop insurance, property insurance) 	Commercial Banks, MFBs, Community Banks, MFIs (only for credit), Fintechs and digital platforms, MNO49 (for payments) insurance companies
Agrodealers for supply of seeds and other inputs to smallholder smallholder farmers	<ul style="list-style-type: none"> - Working capital for inputs and labour costs, small equipment, etc - Asset financing for transportation means and storage equipment - Savings and payments - Property insurance 	Commercial Banks, MFBs, Community Banks, MFIs (only for credit), Fintechs and digital platforms, MNO (for payments), insurance companies
Smallholder farmers organizations for supply of seeds and other inputs to smallholder members, and commercialization of their production	<ul style="list-style-type: none"> - Working capital for supply of seeds and other inputs, and commercialization - Asset financing for transportation means, storage and equipment - Savings and payments - Property insurance 	Commercial Banks, MFBs, Community Banks, MFIs (only for credit), SACCOs, Fintechs and digital platforms, MNO (for payments), insurance companies
Smallholder smallholder farmers users of the certified seeds	<ul style="list-style-type: none"> - Working capital for seeds and other inputs, labour costs, small equipment, etc - Asset financing for production equipment - Savings and payments - Crop insurance 	Commercial Banks, MFBs, Community Banks, MFIs (only for credit), SACCOs, Fintechs and digital platforms, MNO (for payments), insurance companies
Large Offtakers / Processors	<ul style="list-style-type: none"> - Working capital for purchase of production from and input supply to smallholder smallholder farmers - Asset finance 	Commercial banks, TADB (direct lending or syndicated loans with commercial banks), Impact investment funds for debt or equity, insurance companies

⁴⁹ Mobile Network Operator.

Category of beneficiary / value chain actor	Financial needs	Potential financial service provider
	<ul style="list-style-type: none"> - Savings and payments - Property insurance 	
Fisheries and aquaculture		
Small scale producers (aquaculture, mariculture (seaweed), artisanal marine fishers)	<ul style="list-style-type: none"> - Working capital for inputs, labour costs, small equipment, etc - Asset finance (ponds, boats, other equipment) - Savings and payments - Production and property insurance 	Commercial Banks, MFBs, Community Banks, MFIs (only for credit), SACCOs, Fintechs and digital platforms, MNO (for payments), insurance companies
Producers organizations for supply of inputs to small scale producers members and commercialization of their production	<ul style="list-style-type: none"> - Working capital for supply of inputs and commercialization - Asset financing for transportation means, storage (including cold chain) and equipment (including ice making, drying and processing equipment) - Savings and payments - Property insurance 	Commercial Banks, MFBs, Community Banks, MFIs (only for credit), SACCOs, Fintechs and digital platforms, MNO (for payments), insurance companies
Feed and fingerlings private producers	<ul style="list-style-type: none"> - Working capital for inputs and labor costs - Asset financing for transportation means, storage and equipment - Savings and payments - Property insurance 	Commercial banks, TADB (direct lending or syndicated loans with commercial banks), Impact investment funds for debt or equity, insurance companies
TAFICO / ZAFICO	To be specified based on business plan to be developed	TADB (direct lending or syndicated loans with commercial banks), Impact investment funds for debt or equity, insurance companies
Large Offtakers / Processors	<ul style="list-style-type: none"> - Working capital for purchase of production from and input supply to smallholder smallholder farmers - Asset finance - Savings and payments 	Commercial banks, TADB (direct lending or syndicated loans with commercial banks), Impact investment funds for debt or equity, insurance companies

Category of beneficiary / value chain actor	Financial needs	Potential financial service provider
	- Property insurance	

239. For specific investments that will be financed on a 50% cost sharing basis for programme beneficiaries (including at least 10% from beneficiaries' own resources), as specified in the different components and sub-components, the beneficiaries may need to access loans from FIs to mobilize their contribution.

B. Strategy and approach

240. Considering:

- (i) The growing appetite of the financial sector to finance profitable and well-organized agricultural value chains, including small scale producers and agri MSMEs which are the main target groups of AFDP;
- (ii) That one of the key objectives of AFDP is to support the development of profitable, well organized and sustainable value chains, including enhancing capacities of its beneficiaries to develop profitable and creditworthy enterprises through technical, business skills and market linkage support, as well as financial support for specific investments;
- (iii) The opportunity to partner with TADB which has developed or plans to develop several financial and non financial instruments to raise appetite of the financial sector for agrifinance, including small scale producers and agri MSMEs, or for direct financing or cofinancing of value chain actors;
- (iv) The need to enhance the financial literacy of the programme beneficiaries to make them more creditworthy, and to raise their awareness, understanding and trust on the financial services on offer; which would result in increased demand and use of the financial services;

241. AFDP overall strategy and approach to support access to financial services by its beneficiaries so that they can develop and sustain their enterprise will be to facilitate linkages with the existing offer of financial services. This will be done through two key modalities: (i) Partnership with TADB, and (ii) Financial literacy training of the Programme beneficiaries.

242. Although the Programme will partner with TADB and the FIs benefitting from its financial instruments, with the assumption that this will enable the Programme beneficiaries to access the most adapted and affordable loans and other financial services, the beneficiaries should be free to select the financial service providers of their choice, building on knowledge gained through the financial literacy training.

243. AFDP investments related to access to finance will thus focus on (i) capacity and knowledge building of the Programme beneficiaries, (ii) technical assistance to TADB and its partner FIs specific to the value chains targeted by the Programme, in complement to technical assistance by other TADB partners including AFD, and (iii) linking TADB with IFAD NSO50 private sector window for investment in TADB, to increase financial resource for SCGS or other financial instruments. The last two activities will be instrumental to further incentivize TADB and its partner FIs to finance AFDP value chains and beneficiaries, in addition to the overall derisking of the value chains through its various investments and activities.

⁵⁰ Non-Sovereign Private Sector Operations.

244. AFDP will also link, when relevant, enterprises operating along the value chains that are not direct beneficiaries of the Programme but provide services to the Programme beneficiaries⁵¹ to TADB and other investment opportunities, to secure and sustain services provided to the Programme beneficiaries.

II. Programme activities and implementation arrangements

A) Partnership with TADB

245. The Programme will partner with TADB to facilitate access to adapted and affordable financial services by the various value chain actors (small scale producers and SMEs / Cooperatives along the value chains), for all the sectors targeted by the programme. Financial instruments managed by TADB will be leveraged to raise appetite of commercial banks, MFBs and Community Banks to finance programme beneficiaries. This will include the existing SCGS and other instruments to be established by TADB including concessional credit lines for wholesale lending to these FIs. Bigger or longer term investments along the value chains may be financed directly by TADB or through co-financing arrangements with commercial banks (for instance for ZAFICO and TAFICO under 4P arrangements, or large agribusiness enterprises linked to the programme beneficiaries, like offtakers and processors, input suppliers, etc).

246. A MoU will be signed between the Programme and TADB to specify respective roles and responsibilities, indicative targets and activities and budget. A framework MoU will be signed for the 6 years duration of the Programme, with annual addendums specifying yearly targets, activities and budget.

247. TADB will commit to facilitate access to finance for programme beneficiaries and other value chain actors. This will be done (i) indirectly through its partner FIs benefiting from SCGS and wholesale lending product, or (ii) directly or through co-financing arrangements with commercial banks. Targets in terms of number of clients and volume of lending will be specified annually in consultation with AFDP, including specific targets for women and youths. Agreements and sub agreements with partner FIs under SCGS and / or Wholesale lending will also specify targets for the value chains supported by the Programme. Financing will be demand based and subject to creditworthiness of the applicants, as per TADB and partner FIs eligibility criteria.

248. b) The Programme will facilitate TADB and its partner FIs to develop adapted and affordable financial services, through a technical assistance fund managed by TADB, especially for sectors deemed riskier and / or less known by the FIs, women and youths. Eligibility criteria to access this TA fund and modalities of delivery of the TA will be proposed by TADB at inception for approval by AFDP and specified in the MoU. TA will be provided on cost sharing basis with the FIs. TA to FIs will be demand based and may be provided for value chain mapping and analysis of financial needs and gaps, product development and delivery channels, update of operational manuals and processes, risk management, social and environmental management, M&E, ...). Value chain financing approach, building on linkages between value chain actors to mitigate lending risk, including the ones promoted by the programme, will be prioritized. Attention will also be given to opportunities to digitalize services and operations, to increase cost efficiency and quality of the services.

249. c) Specific products will be designed for the women and youths, building on the support to be provided by AFD in this regard. One option that will be considered is revising upward guarantee coverage under the SCGS (from 50% to 75%), to address higher financing risk for the youths. Interactions with TADB during the design have confirmed that some commercial banks or MFBs would be willing to finance youths under these conditions, even without

⁵¹ Like Purchase of the production, inputs supply, technical support, ...

financial contribution by the youths, technical and business skills support and close monitoring of the businesses by the programme being another key derisking factor.

250. d) TADB and the partner FIs will promote their financial services in collaboration with the programme staff and partners / service providers (at central and district levels), which will assist to identify the potential clients and provide required information and data, to facilitate due diligence of the applicants and loan application assessment by TADB and FIs. TADB and partner FIs may also be invited to attend various events organized by the programme to present their offer of financial services.

251. f) Joint monitoring of the implementation of the MoU by the programme and TADB will be done through desk review of TADB reports, regular meetings with TADB and partner FIs management, meetings with TA service providers and field visits to interact with programme staff and beneficiaries to assess relevance and impact of the financial products delivered. Findings and lessons learnt from this monitoring will inform contents of the annual addendums. A joint evaluation of the partnership will also be carried out in the last year of the Programme.

B) Financial literacy training of Programme beneficiaries

252. Financial literacy training of beneficiaries will aim at enabling them to understand financial services on offer (savings, loans, insurance and payments), make an informed choice of relevant financial services and financial service providers to sustain and develop their enterprise and better manage their personal and household resources, and raise their confidence and capacity to approach financial service providers to use and apply for their services. Potential financial services providers will be TADB and its partner FIs, as well as other FIs like SACCOs and MFIs, not targeted by TADB financial instruments, insurance companies, fintechs and digital platforms, and impact investment funds for the bigger enterprises.

253. Financial literacy training modules will be integrated in the business development training for the various categories of beneficiaries. Main topics addressed will be personal and enterprise financial management, savings, credit, risk management and insurance, knowledge and understanding of the financial services on offer (terms and conditions) and financial service providers, how to choose and access the most adapted financial service for each type of financial need, consumer rights / protection framework, etc. The modules will be designed in compliance with the National Financial Education Framework and will be customized for each category of beneficiary.

254. A senior agrifinance and financial inclusion expert will be contracted to develop the financial literacy training module in year 1. Considering the rapid evolution of the financial sector, short scoping studies will be conducted annually by the senior agrifinance and financial inclusion expert for an update on the financial services on offer and financial service providers, to inform update of the financial literacy training modules. The same senior agrifinance and financial inclusion expert will be contracted on retainer basis for various activities where this expertise is required, under partnership with TADB and financial literacy training. This will ensure consistency between different activities and over Programme implementation.

255. Financial literacy training will be implemented by partners or service providers contracted for business development training of the various categories of beneficiaries as specified in the different components and subcomponents. Partners or service providers will be required to mobilize the relevant expertise to deliver the financial literacy modules. The PCU M&E unit will monitor impact of the financial literacy training on access to finance and linkages with financial institutions, through sample-based interviews with beneficiaries.

C) Linkage of value chain enterprises with TADB, FIs and Impact investment funds

256. The PCU will link when relevant enterprises operating along the value chains that are not direct beneficiaries of the programme but are key for the effectiveness and sustainability of the value chains, to TADB, banks or impact investment funds, including ABC fund supported by IFAD, for debt or equity investments. Enterprises will be informed of various financing opportunities by the PCU, building on outcomes of the scoping studies mentioned above. PCU may also provide information on collaboration with the enterprises on request by the financial service providers. The table below summarizes implementation schedule for activities related to access to finance.

Table 25. Implementation schedule for activities related to access to finance.

Activity	Implementation	Y1	Y2	Y3	Y4	Y5	Y6
Partnership with TADB							
Negotiation and signature of 6-year MoU and annual addendum with TADB	PCU / Senior agrifinance and financial inclusion expert	x	x	x	x	x	x
Provision of information and data on programme activities and beneficiaries to TADB and partner financial institutions to facilitate linkages	PCU	x	x	x	x	x	x
Monitoring of implementation of the MoU	PCU / Senior agrifinance and financial inclusion expert / TADB	x	x	x	x	x	x
Evaluation of the partnership	Firm with expertise in agrifinance, financial inclusion and institutional development / TADB						x
Financial literacy training of programme beneficiaries							
Annual scoping studies of the financial sector to identify potential financial service providers and inform financial literacy training module	Senior agrifinance and financial inclusion expert	x	x	x	x	x	
Development and update of the financial literacy training module	Senior agrifinance and financial inclusion senior expert	x	x	x	x	x	x

Activity	Implementation	Y1	Y2	Y3	Y4	Y5	Y6
Financial literacy training of programme beneficiaries	Financial literacy training module to be integrated in overall business development support to beneficiaries	x	x	x	x	x	x
Monitoring of impact of the financial literacy training on access to finance and linkages with financial institutions	M&E	x	x	x	x	x	x
Linkage of value chain enterprises with TADB, FIs and Impact investment funds	IFAD	x	x	x	x	x	x

PROGRAMME PLANNING, MONITORING AND EVALUATION

257. **Implementation Readiness and Start-up Plans.** Programme implementation is planned to start in March 2021. A draft Programme Implementation Manual (PIM), a draft AWPB for the first 18 months of Programme implementation, and a draft procurement plan for the first 18 months will be prepared as part of the PDR design process. These documents aim to ensure the Programme implementation starts as scheduled, without unnecessary delays during the first Programme year. A national start-up workshop will be organized with all Programme stakeholders and implementing partners at all institutional levels to reinforce the implementing modalities of the Programme and to introduce key processes, tools, strategies for M&E and KM. Start-up workshops will subsequently be organized in all the 10 participating regions. An early implementation support mission will be mobilized within the first three months of Programme effectiveness. Continuous supervision, follow up and implementation support will be provided by the IFAD sub-regional and country office.

258. **Planning.** Planning will be guided by the programme's strategy, logframe and broader results framework, which will inform the development of annual work. The annual work plans and budget (AWPB) will be drawn up in consultation with implementing partners. The PCU will be responsible for the process and for the inclusion of beneficiaries and collaboration with key stakeholders to ensure transparent planning process.

259. **Monitoring and evaluation.** The programme M&E will be aligned with the ministry information system and IFAD's Operational Results Management System (ORMS). The programme logframe include both IFAD and ASDP II core indicators for the different levels of results (output, outcome and impact) as well as programme specific indicators. At the start-up, the programme will conduct a baseline survey on core programme and livelihood indicators to facilitate their monitoring and evaluation. In addition, correct definitions and computations of indicators will be reviewed and documented for subsequent surveys. These surveys will be repeated at mid term and programme end, using large sampling frames and panel studies that will also include non-beneficiary households with similar characteristics to those receiving AFDP support, either in the same districts, or in neighbouring ones. Design and budgeting of surveys for the mandatory Core Outcome Indicators (COI) and IFAD 11 priorities: The implementation support mission will assist in designing, planning, and

implementation of COI surveys at baseline, midterm and completion stages, as well as specific studies and surveys related to IFAD 11 priorities. These surveys will use large sampling frames that will also include non-beneficiary households with similar characteristics to those receiving AFDP support, either in the same districts, or in neighbouring ones. It is envisaged that the actual implementation of the baseline and final surveys would be contracted out to a reputable organization, either an independent academic institution or a private company through a competitive tender.

260. The programme's M&E strategy and framework will be developed as part of the first implementation support mission scheduled to take place within the first six months of the programme approval. It will comprise:

261. **M&E Staffing and Capacity Development:** the M&E department will be headed by two M&E staff; a Senior M&E Officer competitively recruited by the Programme and M&E Assistant seconded by GoT; and assisted by M&E officers in implementing institutions and District facilitation teams. The Senior M&E Officer will be responsible for: (i) developing M&E systems; (ii) tracking IFAD core outcome indicators and IFAD 11 priorities (gender, youth, nutrition, policy engagement (iii) assuring coherence with ASDP II M&E framework, and (iv) facilitating policy engagement. The Assistant M&E Officer, will work under the direct supervision of the Senior M&E Officer and will be responsible for: (i) rolling out M&E systems at district level; (ii) tracking level 2 indicators; (iii) and (iv) coordinating data collection and reporting with district facilitation teams and M&E officers in implementing institutions; and (iv) rolling out consolidated M&E geo-referencing system, building on earlier initiatives and tools developed under ASDP II; and (v) coordinating capacity development activities on M&E tools and systems such as PRiME and Deliver, and GoT ARDS and other relevant M&E tools for PCU team, Government counterparts in the line ministries, M&E staff in the implementing institutions, District Facilitation Teams and other programme stakeholders.

262. Responsibilities for M&E data collection, utilization and reporting will be divided between the following key stakeholders: (i) PCU will be responsible for coordination, integration and quality control as well as tracking COI (at the outcome and DO level) and IFAD priorities, reporting, decision making and policy engagement; (ii) Implementing institutions (ASA, TOSCI, TAFICO and ZAFICO, and in the ADCs) will provide data on activity related output indicators to the PCU and provide programme progress on quarterly basis on their respective areas; (iii) District facilitation teams will ensure activities are implemented according to design and collect and report output indicators to the PCU at the required time; (iv) Cooperative societies, seed producer organizations and agro-dealer networks: will provide data on beneficiary feedback to the DFTs and relevant implementing institutions; and (v) Village and/or Ward Agricultural extension officers will collect and submit monthly, quarterly and annual reports to their district agriculture and fisheries development officers including compiling formal reports on grievance redress.

263. M&E Systems development and support. It is anticipated that an M&E strategy and manual will be developed as part of the First Implementation Support Mission scheduled to take place within the first six months of programme approval. The Mission will include an M&E expert to ensure alignment of AFDP M&E systems with the overall M&E framework for ASDP II and specifically with the Agricultural Routine Data System (ARDS) which is designed to provide district and regional level agricultural data on a quarterly basis.

264. M&E Capacity Development. The Programme will include specific capacity building activities on M&E tools and systems such as PRiME and Deliver, and GoT Agricultural Routine Data System (ARDS) and other relevant M&E tools for PCU team, ASDP II coordination unit, Government counterparts in the line ministries, M&E staff in the implementing institutions, District Facilitation Teams and other programme stakeholders for stronger coordination, data collection, processing, analytical and reporting capabilities.

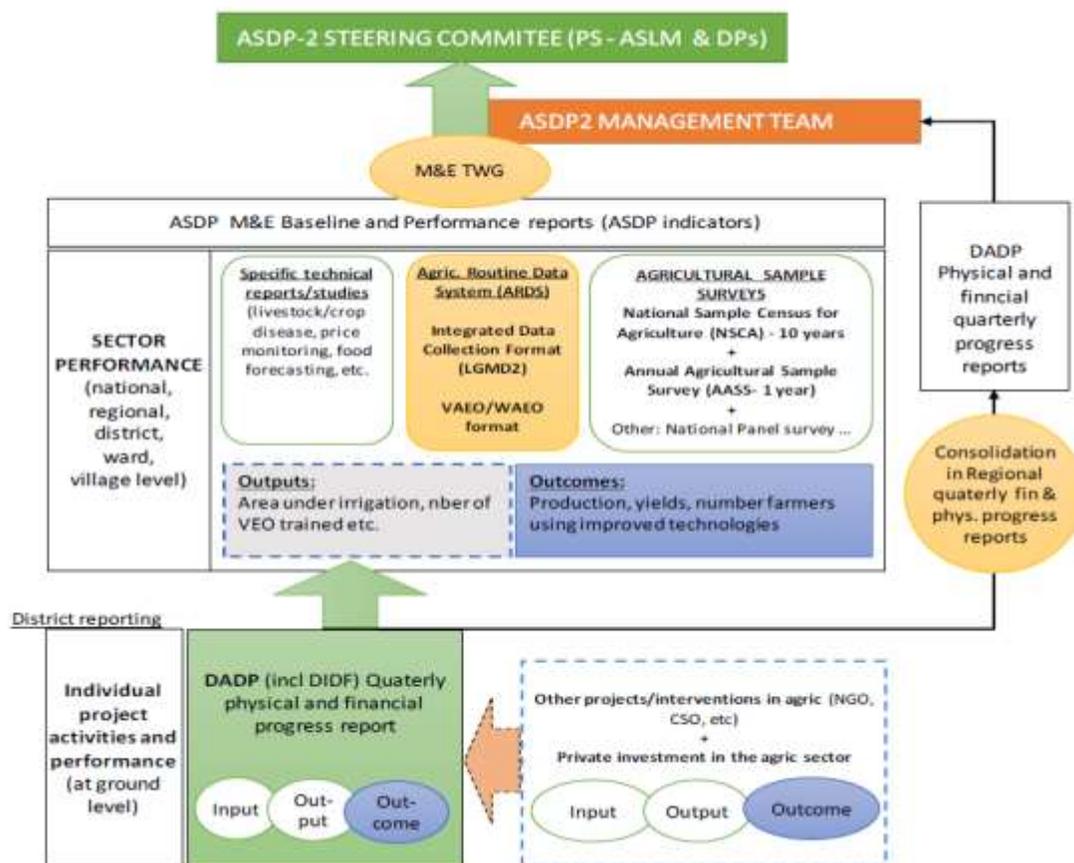
265. Digitalisation of M&E. AFDP will promote digitalization of the M&E system through the use of portable electronic devices will be facilitated, so as to speed up data entry and cleaning, and disseminate the results rapidly. At the village, district and institutional level, the results will be collated, consolidated and digitalized into a standardized format for electronic transmission. Reporting system has been consolidated and linked to a web-based database, using custom-made software called Local Government Monitoring Database (LGMD 2) that allows the data to be entered electronically at the district level and forwarded through subsequent approvals process.

266. M&E systems will use mixed methods approach, combining qualitative and participatory techniques including photo voices and participatory videos, most significant changes, case studies as well as quantitative survey techniques and statistical analytical techniques such as double difference estimators, propensity score matching, adoption models, etc. Linkages between the different sub-components will be reflected in reporting, which makes it important to ensure that there is no double-counting of beneficiaries.

267. As much as feasible, the databases to be developed under the programme will be aligned with the Local Government Monitoring Database (LGMD) whose data entry will be done electronically at the district level starting from 2010. The M&E Unit of ASDP has assured that it would be possible to add programme-specific indicators to the list of ASDP outcome indicators and adjust the data collection formats accordingly. Apart from strengthening the link between the programme and ASDP, this would greatly reduce the workload of the district staff that would be involved in routine data collection for the programme, who also work on the LGMD data collection⁵².

268. Planning and internal monitoring of implementation progress will be done by each of the implementing partners/ service providers, based on the indicators in the logical framework, the M&E Plan, and targets set in the annual work plans and budgets. The participatory PME will give programme beneficiaries a key role in planning for results, including formulation of indicators and assessment of outcomes, facilitated by the relevant implementing partner/service provider or by an external service provider. Impact assessments will be conducted by an external service provider.

⁵² District Agricultural Statistics Officers, Ward Agricultural Extension Officers, and Village Agricultural Extension Officers.



269. **Supervision and implementation support missions.** IFAD and GoT will conduct joint supervision missions twice a year to assess programme progress and performance, following IFAD procedures and guidelines for supervision missions. The specific objectives will be to : (i) assess the status of Programme implementation; (ii) follow-up on the recommendations of last supervision mission; (iii) provide support as required to the Programme Coordination Unit and implementing partners; (iv) identify bottlenecks that are delaying implementation; and (v) review progress on the programme restructuring plan. The Implementation support missions will identify and address early emerging issues and build technical capacity for Programme implementation. To the extent possible, there will be continuity in the composition of the supervision and implementation support missions in order to increase mission effectiveness.

270. **Mid-Term Review (MTR).** A joint IFAD-GoT MTR will be undertaken in year three of the programme. MTR mission will to take stock of the results achieved and critically review all aspects of the programme design so as to recommend amendments as required to adapt to evolving circumstances and improve programme performance and effectiveness. The MTR will entail a combination of field and analytical work to: (i) validate the continued relevance of the programme; (ii) review implementation performance comprising quality of Programme management, M&E, performance of key partners, gender and poverty focus, effectiveness of targeting, innovation and learning, and climate/environment focus; (iii) assess the effectiveness of implementation with respect to the outputs, outcomes and impact; (iv) identify and assess the sustainability and exit strategies, including programme performance on institution building, strength and performance of 4Ps, quality of beneficiary participation,

responsiveness of service providers; (v) identify potentials for scaling up and replication within and outside the programme; (vi) identify potential activities for scaling up and replication within and outside the programme; (vii) assess fiduciary issues including level of draw-down, compliance to the Financing Agreement; and (viii) make recommendations to address identified issues and propose measures and or adjust the Programme design to improve on effectiveness.

271. **Programme Completion Review.** During the final year of programme implementation, a Programme completion review mission will be carried out to document Programme outputs, outcomes and progress towards the achievement of programme development objectives and impacts. The mission will ascertain the programme impact on rural poverty, relevance, effectiveness, efficiency and sustainability of interventions, as well as programme performance on key indicators such as gender equality and women's empowerment, environmental sustainability and climate change adaptation, innovations and scaling up. To inform the completion review, the Programme will commission terminal evaluation and impact studies using mixed methods to allow drawing conclusions and lessons of the programme impacts by comparing changes in the livelihoods of beneficiaries that can be attributed to programme interventions against baseline situation or without programme situations.

272. **Citizen engagement and beneficiary feedback.** The identification and design of Programme, including the selection of the geographic area, programme interventions was based on consultations with various stakeholders. Stakeholders consulted during preparation included Government institutions at different levels (national and departmental), representatives of producer groups, MSMEs active in the seed and fisheries value chains, medium and large private actors including strategic investors in the fisheries sector and financial institutions, civil society, local and international NGOs, bilateral donors, and UN organizations. The establishment of dialogue platforms with multi-stakeholder groups is part of the programme's strategy for inclusion and participation. Furthermore, different stakeholders' groups will participate in the elaboration of the Annual Workplan and budget (AWPB), the supervision missions and MTR as well as in the various M&E participatory processes. The programme will establish a digital platform for collecting beneficiary feedback and complaints, (including use of social media) and care will be taken to ensure that confidentiality is observed and respected. In addition to digital platforms, which will be supplementary mechanisms, the programme will apply the following all-inclusive mechanisms:

- informal and existing dispute resolution mechanisms at local/village level;
- formal grievance redress mechanisms that exist at ward level, which are overseen by members of the ward tribunals;
- criminal cases will be handled by the police and the justice system; and,
- work place disputes between employees and employers will be resolved by the Commission of Arbitration and mediation.

273. Furthermore, the GRM will include a dedicated telephone number to report complaints, an anonymous email address, complaint boxes stationed in local administration offices (at the project office, village, ward, district); and ensuring that affected individuals can lodge complaints at the local ward tribunal and at project level. This will be further elaborated in the PIM and the ESMP.

274. **Communication and knowledge management (KM).** A draft communication and knowledge management (CKM) plan is annexed (Appendice 1) to this PIM and will be further developed once the

programme starts. The draft outlines systems, processes and responsibilities to ensure that the programme will generate, capture, analyse, document, package and disseminate knowledge and lessons learnt throughout the Programme as well as externally. This will involve the use of digital technologies, regular review meetings with implementing partners to discuss progress towards expected outcomes, learning tours and the production and dissemination of a variety of communication products to a wide audience of stakeholders. The strategy will be aligned and implemented under ASDP-2 CKM strategy by ensuring that: (i) there is coordination of CKM activities in the different ministries and implementing institutions; (ii) stakeholders receive appropriate messages through suitable channels; (iii) there is smooth two-way flow of information; and (iv) farmers are empowered in decision making and participate fully in planning, monitoring and implementation of AFDP. AFDP CKM plan will align with key ASDP II action areas for communication and policy advocacy and scaling up, including media forums, workshops & seminars on agricultural sector issues, documentation of lessons learned and best practices for sharing with stakeholders, participation in local and national events and other agriculture sector initiatives, use of mass media and public events, radio/TV, video, YouTube, social media, etc.)

275. The Programme will develop strategic communication products to promote and scale up innovations, outcomes and results, including (i) system for seed certification & traceability this is apart from new seed varieties; (ii) seed innovation platforms; (iii) PPP models for fisheries and seed businesses; (iv) GALs for gender; (v) youth entrepreneurship aqua-parks or seed hubs; and (vi) learning for food system operations as this is a first generation/flagship for Food System Project for IFAD in ESA.

276. . The programme will collaborate with the relevant communication units within PMO, MoA, MLF and MNRLF-Zanzibar and implementing institutions (ASA, TARI, TOSCI, TAFOCO, etc) to produce relevant knowledge products and ensure documentation of lessons learnt, best practices and success cases. Communication materials, such as press releases, extension materials, and radio spots will be prepared and distributed through the programme and its stakeholders. The Programme will prepare quarterly, semi-annual and annual progress reports. The progress reports will include a qualitative and quantitative discussion of progress; a review of programme management and a section dedicated to issues affecting the effective programme implementation.

277. **Knowledge documentation and dissemination.** A simple website page will be developed for AFDP, preferably embedded within the website of ASDP II, and linked to websites of key implementing institutions. The website will provide access to the reports published by the Programme. Links will be provided to relevant departments. The Programme will produce regular factsheets that will provide succinct summaries of lessons learned in the Programme and shall have a wide circulation.

278. The CKM plan will aim at leveraging digital solutions and tools for e-extension, e-registration, e-certification, e-commerce, and diverse fintech solutions to expand farmers and value chain actors' access to a broad array of practical knowledge and information, services and markets, and to enable easy and systematic flow of information from farmers and/or their advisors to public programme officers—to facilitate collection of farm-level data for M&E purpose, but also allowing farmers to provide regular and timely feedback on the performance of public programmes; and facilitating and establishing input/output marketing linkages with other farmers (bulking), potential suppliers and buyers.

279. At the inception of the Programme, a Communication and Knowledge Management expert/ consultant will be recruited on a retainer basis reporting to and working closely with the M&E and Learning Specialist to lead the development, implementation, evaluation and continued improvement of AFDP communication and knowledge management plan. The CKM consultant's terms of reference have been specified in the

PIM and including preparation and implementation of the Programme CKM Strategy, and developing and managing regular production cycle of communication products and information materials for various stakeholder groups.

280. **The Programme will retain a Communication and Knowledge Management expert** as a consultant reporting to and working closely with the M&E and Learning Specialist to lead the development, implementation, evaluation and continued improvement of communication and knowledge management initiatives during Programme implementation. The CKM consultant's terms of reference will include:

- a. Prepare the Knowledge Management Strategy for the Programme and continuously review and improve the Programme communication strategies and materials to ensure effectiveness.
- b. Develop and manage an annual production cycle of communication materials including campaigns and information materials to support awareness raising, sensitization and key messages (stories, videos, photos etc.) about the Programme and articulate them in ways appropriate to the key stakeholders' target audiences.
- c. Provide functional direction to special events in particular with reference to activities in the seed and fish value chains, such as product launch, the commissioning of works with special emphasis on effective use of the media.
- d. Prepare user-friendly information sheets that detail key facts and figures about the Programme progress and achievements;
- e. Liaise with PMO, MoA, MLF and implementing institutions unit staff and advise PCU staff on media engagement.
- f. Synthesize reports and write thematic case studies, lessons learned and stories about successes emerging from programme implementation; package them and ensure that they are shared within the country, with Government and other development partners in and outside Tanzania.
- g. Support the seed and fisheries policy development process, develop and package targeted policy products as required, and ensure that key stakeholders at different levels are fully informed as to the issues in question.
- h. Design and implement training activities for Programme staff, government partners and other Programme stakeholders, as required, on KM and communication approaches, methods and tools.

281. **Policy engagement.** As the programme directly contributes to the ASDP II, its findings and key results, including knowledge programme as the result of KM strategy, will enhance policy dialogue with appropriate evidence-based data and information. AFDP will build on past IFAD's investments in the seed sector and the significant financing in the fisheries and aquaculture sector to facilitate policy engagement, change and reforms in four key areas:

- (i) Promoting private sector participation in national seed systems. In addition to the multi-stakeholder national and regional platforms and institutional support to ASA and TOSCI, the Programme will support policy dialogues and processes to promote and implement favorable legislation and regulations and scale up innovative productive PPPs towards increased private sector participation in the seed industry development, and scale up innovations to fight counterfeit seeds.

- (ii) Promotion of 4P Business models in PPP regulations: AFDP will facilitate public-private policy dialogues for the sharing of findings and lessons from the Programme and other countries in order to further promote the 4P concept as an instrument for scaling up and increasing financial inclusion and market integration of smallholders and rural small and medium-sized enterprises (SMEs). The aim is to systematically promote the inclusion of 4Ps concept in the PPP Regulations and implementation modalities.
- (iii) Implementation of Tuna Fisheries Management Plan. AFDP will contribute to developing consensus and the mechanisms for successful implementation of Tuna Fisheries Management Plan, including a strong institutional framework, partnerships with international expertise institutions such as IOTC and a sustainable funding arrangement, ideally based on generated fishing revenue.
- (iv) Development of the Aquaculture cluster growth model. The Programme will facilitate the review of the National Fisheries and Aquaculture policy of 2015, with the aim of promoting a more coherent direction for aquaculture sector development, built around stronger biosecurity and food safety, climate change adaptation, private sector led growth, knowledge-based aquaculture planning, entrenchment of GoT's PPPP framework in the aquaculture sector and coordinated development planning of aquaculture through clusters and "aquaparks".

282. The programme will use different mechanisms for policy engagement and advocacy. These include active participation in ASDP II thematic working groups for sub-sectoral dialogue; the use of AFDP's Steering Committee, inter-ministerial Technical Advisory Committee, and ministerial technical advisory committees, as well as field level implementation through LGA. As the programme directly contributes to the ASDP II, its findings and key results, will be used to enhance policy dialogue with appropriate evidence-based data and information.

VI. ORGANIZATIONAL FRAMEWORK /PROGRAMME IMPLEMENTATION

283. The **overall programme coordination** will be under the Prime Minister's Office (PMO), which is responsible for coordinating the implementation of ASDP II. The Prime Minister's Office will coordinate GOT/IFAD relations and oversee the orderly implementation and ensuring smooth flow of fund to the sector ministries and other implementing institutions. For Zanzibar the programme is supporting implementation of the Zanzibar Agriculture Sector Development programme (Z-ASDP). It aims to have an effective results based framework, clear action plans and effective coordination at all levels for operationalization of MKUZA III and the agriculture strategic plan as a vehicle for achieving Zanzibar's agricultural transformation. As part of implementation of Z-ASDP, the programme will support the fisheries development and seaweed farming interventions in Unguja and Pemba Islands. In Zanzibar, the Inter-Sectoral Steering Committee chaired by the Principal Secretary of the Ministry of Agriculture, Natural Resources, Livestock and Fisheries (MANRLF) will play the role of the PSC. The ISSC will be represented in the PSC to ensure more effective coordination of programme activities in Zanzibar and the Mainland. The Steering Committee will be meeting twice a year to provide overall guidance of the implementation of the Programme and receive progress reports.

284. **Inter-Ministerial Technical Advisory Committee (ITAC).** MoA, MLF and MANRLF-ZNZ are jointly responsible for implementation of the programme. They will establish a joint Technical Advisory Committee to (i) advise the Programme Steering Committee and the PCU on technical issues, (ii) provide oversight of implementation and performance monitoring of the implementing agencies; (iii) follow up on the implementation of PSC decisions and

recommendations; (iv) mobilize technical expertise and ensure coordination and synergies with other existing projects and initiatives; and (v) and facilitate policy engagement. The ITAC will be chaired by the Director of Policy and Coordination of Government Business PMO, to ensure programmatic synergies, integration and coherence between programme components. It will be composed of the relevant Directors from MoA (Policy and Planning, Crop Development and Extension services), MLF (Policy and Planning, Aquaculture and Fisheries) and MANRLF-ZNZ (Policy and Planning and Fisheries) as well as MoFP Tanzania Mainland, and MoFP Zanzibar. It will also comprise two representatives from participating Districts. The ITAC will meet twice a year.

Programme Coordination Unit (PCU)

285. The Programme will establish a semi-autonomous **Programme Coordination Unit (PCU)** under the PMO, to complement existing ASDP II coordination and management structure. It will be integrated into ASDP II National Coordination Unit (NCU), which is mandated to coordinate the implementation of ASDP II, working in close collaboration with other national level Ministries and Districts. The NCU will conduct the programme performance reviews and will participate in the Steering Committee (SC) as well representing AFDP in the Agriculture Sector Consultative Group (ASCG).

286. AFDP PCU will comprise as a minimum of the following staff competitively selected: (i) Programme Coordinator, (ii) Programme Monitoring & Evaluation and Knowledge Management officer, (iii) Finance Officer, (iv) Business Development and Value Chain Specialist and (v) an Environmental Management specialist (in the first two years of the Programme as required for Category A status). A smaller Programme coordination team, comprised of a (i) Team Leader; (ii) value chain development expert and (iii) a finance officer, will be established in Zanzibar under the MANRLF. The PCU will leverage technical expertise in the implementing partner institutions both and central and districts levels and will mobilize technical assistance to provide strategic guidance and oversight on targeting, women and youth empowerment, as well as nutrition targets of the Programme. Key staff of the PCU will be competitively selected and be in place before programme disbursement effectiveness.

287. The PCU will be responsible for the overall planning, execution, coordination, monitoring and reporting, ensuring that required standards on technical innovations on seed and fisheries, financial management and procurement are adequately followed. The PCU will mobilize technical assistance to provide strategic guidance and oversight on targeting, women and youth empowerment, as well as nutrition targets of the Programme.

288. Specifically, the PCU will be responsible for the following (i) provide strategic guidance and technical assistance for the effective implementation of the programme; (ii) consolidate, review and prepare annual work plan and budget and submit to PSC and IFAD for approval; (iii) function as secretariat for Programme Steering Committee (PSC); (iv) manage annual reviews and any other learning events; (iv) consolidate and prepare programme reports (Annual, Semi-Annual and Quarterly Progress Report); (v) monitor and evaluate programme performance and delivery of results by the implementing institutions and partners. To do this the PCU will organize quarterly meetings to review implementation progress.

289. The PCU will be responsible for overall planning, execution, coordination, monitoring and reporting, ensuring that required standards on technical innovations on seed and fisheries, financial management and procurement are adequately followed. The PCU will leverage technical expertise in the implementing partner institutions both and central and districts levels. In addition, it will mobilize technical assistance to provide strategic guidance and oversight on targeting, environment, women and youth empowerment, as well as nutrition targets of the Programme. Furthermore for effective coordination of the programme

the PCU will bring in additional niche expertise on short term contract basis to address specific programme areas.

290. In order to demonstrate a reform in the efficiency and effectiveness of the programme the staff of the PCU will need to possess high communication, business development orientation and skills. The terms of reference of key PCU staff are described below:

291. **Programme Coordinator (PC):** Operating within the AFDP and reporting to the PMO and liaising with the Focal Persons in Ministry of Agriculture and Ministry of Livestock and Fisheries, he or she will be responsible for all matters pertaining to the effective implementation, management and coordination of activities for effective delivery on the programme objectives. He/ she will also be responsible for technical support to the District teams. This is a high-level professional position with a highly demanding mission to attain the desired outputs of AFDP. Seasoned professionals with strong organizational and managerial experience are required. A solid understanding of the Program area and of the seed and fisheries sector is highly commendable.

292. Specifically, the terms of reference will include:

- a) consolidate annual work plan and budget of AFDP and submit to the TAC, PSC and IFAD for approval
- b) function as secretariat for Programme Steering Committee (PSC)
- c) manage annual reviews and any other learning events
- d) Supervise the consolidation and review of reports (Annual, Semi-Annual and Quarterly Progress Report).
- e) Follow up day to day implementation activities of the programme
- f) Advise the TAC and SC on all matters of the programme and how best can the programme deliver
- g) organise quarterly meetings to review implementation progress.

293. **Planning, M&E and Knowledge Management Officer:** Under the direct supervision of the Programme Coordinator, the M&E and Knowledge Management Officer will be responsible for developing and managing the Programme Learning System. This includes developing an open system with upwards and downwards accountability, and creating a culture where Programme staff and implementation partners on one hand contribute to the development of the M&E system, and on the other learn from experience and share knowledge and information between one another in an organic matter. Specific responsibilities include:

- Oversee the development of a strategy and plans to ensure systematic, continuous learning, improvement and knowledge sharing;
- Develop the overall framework for an M&E System to measure and/or assess progress in terms of inputs, outputs, outcomes and impact, taking into account the Programme Logframe, Theory of Change and broader Programme management requirements, as well as Government ASDPII monitoring requirements and IFAD RIMS indicators;
- Consistent with ASDPII, develop a Management Information System (MIS) which defines the key indicators, data formats, sex and youth disaggregation, and the tools, procedures and responsibilities for data collection, transmission, processing and reporting;
- Supported by a short-term consultant, establish and operationalize a web-based M&E/MIS system, with a dashboard that offers real-time data input and availability;
- Train programme staff and implementing partners in the M&E requirements; supervise and provide regular support to M&E activities at all levels; and provide coaching and mentoring, to build knowledge management, M&E, communication and other relevant skills and competencies of programme and partnering staff;

- Ensure that all service provider contracts include specifications for the internal monitoring required of them, the reporting systems and the penalties for failure to report as specified;
- Monitor financial and physical progress; collate essential data to be included in quarterly, semi-annual and annual reports; and report back to the PCU, other key programme stakeholders and GOT/IFAD;
- Review and update regularly the Programme Logframe;
- Define participatory methodologies and tools for assessing programme performance and outcomes involving stakeholders;
- Guide and supervise organizations contracted to implement baseline and impact assessment studies;
- Facilitate the programme's annual review workshops, Mid Term Review and completion review;
- Oversee development of annual work plans and budgets and support district-level planning and budgeting processes;
- Ensure that innovative experiences, learning and good practices are captured, synthesized, documented and shared continuously within the Programme, and with in-country partners/service providers, IFAD and other regional and international partners;
- Ensure collection and analysis of sex and youth disaggregated data, so as to track the implementation of gender strategy activities and monitor the achievement of its targets

294. **Business Development and Value Chain Specialist:** Operating within the AFDP and reporting to the PC will work closely and liaising with the Focal Persons in Ministry of Agriculture and Ministry of Livestock and Fisheries, implementing agencies and districts. He or she will be responsible for all matters pertaining to the effective implementation of the programme at all levels focusing on developing business skills and value chain development for the seeds and fisheries components. He/ she will also be responsible for technical support improving business orientation and value chain to the District teams. The BDs will adopt a business approach and market orientation to agriculture, fisheries, and aquaculture. He /she will be linking smallholder producers to agri-business, input suppliers, technical assistance and other services. The BDs specialist will reinforce smallholder contribution to commercialization, graduating from artisanal fishing and subsistence farming to semi-commercial status, practising farming as a business. Greater inclusive private sector participation will also be encouraged all along targeted value chains from commercial agricultural input supplies, production, marketing, processing and value addition.

295. This is a specialised professional position with a strong private sector skills geared to achieving outputs of AFDP. A solid understanding of business and private sector orientation for the seed and fisheries sector is highly commendable. Experience in the implementation of value chain development. Specific focus will be on the following main activities:

- Business development and value chain orientation
- Creation of conducive business environment and promotion of seed and fisheries entrepreneurship;
- Promote private sector development and participation
- linking smallholder producers to agri-business, input suppliers, technical assistance and other services
- Promotion of fish and seed value chain development
- Promoting improved processing and competitiveness along the value chain
- Commission business skills training
- Train programme staff and implementing partners in business and value chain development

- provide coaching and mentoring on business skills orientation and competencies o for the programme

296. **Environmental Management Expert.**_Reports to Programme Coordinator. Key Duties and Responsibilities

- Work closely with the implementing agencies (ASA, TARI, TOSCI, ADC, TAFICO, ZAFICO...) to ensure the sustainable implementation of AFDP interventions.
- Work with multi-disciplinary team of Programme implementors, and other experts to support environmentally sustainable crop seed development and fisheries activities which will bring the intended benefits to small scale producers, aquafarmers, artisanal fishers, seaweed smallholder farmers and deep sea fishers.
- Establish a Programme level environmental and social management system.
- Prepare a training manual, and carry out training in environmental and social management requirements for implementing agencies.
- Ensure that the processes and procedures stipulated in the ESMF are followed by implementing agencies.
- Review ESIA and Programme Briefs/ESMPs prepared for individual Programme interventions to ensure GOT/RGZ and IFAD requirements are well addressed, prior to submission to NEMC and ZEMA.
- Ensure that AFDP activities are in compliance with GOT/RGZ environmental, social and climate-related policies, acts and regulations as well as IFAD's safeguards requirements.
- Develop topic-specific management plans which can be easily adapted for each Programme intervention, as appropriate. These include for example: Integrated Pesticide Management Plan, Reservoir Safety Plan, Emergency Preparedness and Response Plan, Waste Management Plan, Chance Find Procedure, Traffic Management Plan (for construction phase);
- Disclose environmental and social safeguards documents as required by SECAP and GOT/RGZ.
- Oversee all environmental, social and climate-related management requirements in the Programme interventions;
- Oversee environmental, social, and climate resilience performance monitoring.
- Carry out Programme environmental, social and climate results monitoring.
- Supervise the annual internal review process to assess the overall performance, outcomes, and impacts of the Programme in respect of environmental, social and climate aspects.
- Monitor all grievances reported from the various Programme activities, and receive notification of, and documentation relating to the verification, investigation, resolution and communication with complainant.
- Work in close collaboration with other PCU officers and national agencies to facilitate and mainstream environmental management into AFDP activities;
- Support the Programme Coordinator in communications and compilation of knowledge in sustainable crop seed development and fisheries activities, facilitating workshops and reaching out to experts and other organisations engaged in crop seed development and fisheries in Programme regions to share experiences and knowledge.
- Perform other duties assigned by the Programme Coordinator.

297. **Finance Officer:** Under the general supervision and authority of the PC, the Finance Officer will manage the programme finance, accounting and audit of AFDP. The specific duties are in finances and accounting for the programme – as well as any other assignment or relevant duties in the field of his/her competences as may be assigned by the PC. These are detailed under the Finance Management Section below.

298. **Support Staff:** The programme will require a driver and secretary to assist in the management of the programme. The recruitment will adhere to the existing Government of Tanzania Civil Service regulations and be selected or seconded from staff pool of the ministries. The duties will be defined according to their job description and secondment arrangements. Staff will be reporting to the PC.

280. Social Inclusion expert/Consultant. The Social Inclusion expert consultant will report to the Project Coordinator. The specific duties and responsibilities of the Social Inclusion Specialist will include:

- Responsible for the implementation of the AFDP Gender empowerment, Youth, Nutrition and Social Inclusion Strategy in project interventions to ensure results for gender mainstreaming, youth and nutrition are achieved and on track.
- Liaise with the Programme Coordination Unit to work with the District Youth and Community Development/Gender and Nutrition officers, keeping them informed about the projects targeting strategy and progress and identifying any opportunities for complementary support for the project's beneficiaries from other government or donor interventions
- Review and monitor the Social Inclusion Service Providers' plans for community mobilization including the Socio-Economic Assessments, community entry, situation analysis, social and institutional mapping, wealth ranking, and assessment of existing community groups and beneficiary selection process as well as capacity building of Groups to ensure inclusion of the project's target group.
- Oversee and monitor the implementation of the youth empowerment, gender mainstreaming, women empowerment and GALS approach including contracting consultants or service providers for technical assistance, reviewing the TOR and coordinating between the Programme and the required technical assistance.
- Track the project's effectiveness in targeting strategy, women empowerment, youth and vulnerable groups in collaboration with the Monitoring and Evaluation Specialist, to ensure sex and age disaggregated data
- Document best practices and emerging issues for course correction highlighting challenges, achievements and lessons learnt in the social inclusion aspects in progress reports.

299. **Nutrition and Behavioural Change and Communication Specialist/Service provider**

300. The project will contract a nutrition focal point or a nutrition specialist as part of the PMU staff to meet nutrition sensitive criteria. A nutrition specialist – with explicit technical qualification and experience – should be prioritized if 100% of this staff time should be dedicated to the roles and responsibilities on nutrition. Alternatively, the project could appoint any of the project staff/officer (such as the M&E, gender, climate or community specialist) to also act as nutrition focal point; in this case, the technical background on nutrition considered is required and nutrition roles and responsibilities included in their job description or TOR.

301. Specific duties and responsibilities:

- Overall, the nutrition focal point/ specialist will have to ensure that nutrition is adequately integrated in the project documents; facilitate the implementation of

nutrition-sensitive activities in close collaboration with relevant stakeholders and implementing partners

- In close liaison with other PMU staff, ensure adequate integration of nutrition in the project documents such as: Project Implementation Manual, M&E system, Annual Work Plan and Budget and progress reports; In close liaison with the M&E officer, ensure that nutrition indicators are tracked and reported on a regular basis (along with other project reporting schedules);
- Bring the capacity needs of PMU staff and the project implementers on nutrition to the attention of the Project coordinator and recommend action plan;
- Establish close contact with the nutrition focal point in the lead implementing agency (i.e Ministry of Agriculture and Fisheries) as a means to keep the project up-to-date, ensure close coordination with other nutrition initiatives and share project progress with other stakeholders through existing multi-sectoral nutrition coordination mechanisms at national and local levels;
- Support the coordinator to establish local partnerships on nutrition (UN, Private sector, CSO) to support implementation and technical assistance; and other stakeholders and implementing partners (e.g. extension workers, community service providers, partner organizations, etc.)
- Identify the capacity gaps as well as needs of different target groups (women, men and youth groups and recommend behaviour Change and communication to shape positive social and cultural norms that may affect nutrition.

District and field level implementation.

302. Lessons from MIRVAF and other ongoing Programmes in Tanzania, (particularly in health, education, infrastructures, etc.) have shown that District LGAs who act as service provider contract manager is key to ensure ownership and sustainability of Programme interventions, rather than setting up autonomous Programme offices.

303. Overall, all district level programme coordination and implementation will adhere to the existing ASDP II structures, which comprise the District Executive Director and District Facilitation Team. The District Executive Director (DED) will hold overall responsibility for activities and funds used at local level, and will report to PCU and Ministries. The District Facilitation Team includes District Agricultural Irrigation and Cooperative Office Officers, District Livestock and Fisheries Officer, as well as other officers to support activities on targeting, nutrition, women empowerment, youth and climate change and environment targets. AFDP planning will be integrated into the village planning process which is led by a Village Planning Committee, Village Agricultural Extension Officer, Village Executive Officer and is supported by the District Facilitation Team according to the District Agricultural Development Plans Guidelines. As a key coordination mechanism at local level, District Value Chain Components brings major actors in crop and fisheries value chains together to develop and drive the implementation of programme activities that include various aspects such as productivity improvement, value addition and market access. The stakeholders at local level include the private sector (traders, processors, transporters, financial institutions, etc.), NGOs, development partners and various public institutions that can provide different types of technical support. The programme will further leverage ongoing community development projects and interventions as well as existing structures at the national and district levels.

304. At the district level for agriculture there is the District Agriculture, Irrigation and Cooperative Officer (DAICO) or Municipal/Town Council Agriculture Irrigation and Cooperative

Officer (MAICO/TAICO) and District Livestock and Fisheries Officer (DLFO) responsible for the seed and fisheries sub sectors. At each district two Subject Matter Specialist (SMS) will be competitively appointed to be Focal Persons (FP) for the programmer. The FP will perform their duties under the DAICO/TAICO/or DLFO and will be supported by the District Facilitation Teams.

305. Specifically, the major roles will be to:

- Coordinate, consolidate and ensure smooth implementation of program and operations' activities.
- develop and implement the programme activities in collaboration with the respective program managers and technical team.
- Provide general support, guidance, and serves as focal point during planning, and reporting.
- Represent the Programme at the District level including general meetings with local authorities, stakeholders' meetings, when requested by the mission coordination.
- Serve as major contacts for the programme at local level
- Conduct demonstration plots through FFS on the new technologies produced by TARI, ASA and ADC to crop and fish smallholder farmers to enhance its adoption
- Support formation of smallholder farmers and fishers groups to facilitate access to productive and marketing services
- Conduct regular smallholder farmers field visits and train smallholder farmers
- Collect data on programme implementation
- Prepare quarterly and annual reports of the programme implementation

Ministerial Technical Advisory Committee

306. Each participating ministry will establish a Technical Advisory Committee to review and scrutinize implementation of the programme interventions, and to provide technical guidance to the program implementing institutions and the LGAs. At each ministry the Technical Working Group will be chaired by Director of Policy and Planning from implementing ministries. TAC will have members from Policy and Planning, Aquaculture, and Fisheries, one representative from ADCs and two representative from participating Districts for MLF. For MoA it will include Director of Policy and Planning, Crop Development, Extension services, one representative from TASTA and two representative from participating Districts. TAC of the ministries. Each ministry will appoint a Focal Person who will be the main points of contact for coordinating technical support to the implementing institutions and LGAs in the project areas. The ministerial technical working group will meet on a quarterly basis in each ministry and jointly twice a year.

Programme Implementing institutions

307. Implementation at the government institutions especially TARI, ASA, TOSCI, TAFICO and ZAFICO will be coordinated by the Head of the institutions and by the Centre/farm managers. For the fisheries and aquaculture, the local level implementation will be coordinated by the managers of the centers. Implementation at the government institutions especially TARI, ASA, TOSCI, TAFICO, ZAFICO and ADC on the basis of performance based contracts. They will be responsible for specific activities and will develop a business and implementation plan for delivering specific results as detailed in the Programme Design Report and the Implementation Manual.

308. Other implementing partners will include TADB for facilitating access to finances; Tanzania Nature Conservancy for seaweed production, processing and value addition as well the development of Tuna Fisheries Management Plans; SUGECO for promoting youth entrepreneurship and facilitating linkages with downstream value chain actors, as well as service providers recruited on a basis of performance contracts.

Table 15: AFDP Activities and Implementing Institutions and Partners

	Activities	Implementing institutions	Implementing partners
Subcomponent 1.1 Crop seed systems development			
1.1.1	National seed demand and supply coordination	MoA	TASTA
1.1.2	Innovation development and Early Generation Seed production.	TARI	
1.1.3	Basic seed multiplication,	ASA	
1.1.4	Private-sector led bulking-up certified seed	ASA	TASTA
1.1.5	Seed certification.	TOSCI	
Subcomponent 1.2: Fisheries and aquaculture development			
1.2.1	Development of sustainable artisanal marine fisheries production systems	MLF	
1.2.2	Development of PPP for commercial deep sea fishing	TAFICO/ZAFICO	
1.2.3	Increasing aquaculture productivity and output.	MLF	
1.2.4	Increasing seaweed productivity and output	MANLF	TNC
Subcomponent 2.1. Quality seed use and business development			
2.1.1	Zonal multi-stakeholder innovation platforms	MoA	TASTA
2.1.2	Promoting supply and access to improved seeds.	MoA	Agrodealers
2.1.3	Promoting awareness and demand for improved seeds.	MoA	Service Providers
2.1.4.	Facilitating synergies with downstream value chain development (contract farming, market linkages, youth entrepreneurship)	PMU	Service Providers
Sub-component 2.2. Fish market development and value addition			
2.2.1	Reducing post-harvest losses	MANLF/MLF	Service providers
2.2.2	Increasing value/income from aquaculture	MLF	Service providers
2.2.3	Increasing value/income from seaweed value addition	MANLF	TNC
Sub-component 3.2. Programme Management and Coordination			

3.2.1.	Coordination and Management Monitoring and evaluation,	PCU	
3.2.2.	Emergency response and recovery	PCU	

309. **ASA.** The key functions of the Agency include seed production and distribution networks to facilitate seed accessibility by smallholder farmers, promotion of increased private sector participation in the seed industry development through establishment of public-private partnerships or joint ventures in seed production, promotion of increased demand of certified seed by smallholder farmers; and strengthen collaboration with research institutes on matters related to availability of new crop varieties. The agency has had limited capacity to deliver these functions in recent years due to lack of production and distribution facilities. This has contributed greatly to the unmet demand for quality seed which is being met by imports, and as well as to smallholder farmers reduced productivity through using poor quality farm-saved seed.

310. It is proposed that ASA will be supported for cost-effective irrigation facilities, farm equipment, storage, seed processing equipment, laboratory equipment (for quality control) and seed transport vehicles. This will enable better performance of production of basic and certified seed of the chosen priority crops. It will link with agro-dealers for distribution of certified seed, and with private seed companies and with smallholder Quality Declared Seed (QDS) producers to enable improved production and access by smallholders. It is noted that business plan exists for development of overall ASA operations. This now needs to be updated and revised particularly with focus on the three crops selected for priority emphasis through the programme. Through the updated business plan the design mission will further assess and validate the proposed areas of support.

311. **Private Sector Support.** Engagement with the Private Sector will be a key programme strategy to enable greater penetration of supply of quality seeds as well as providing sustainability of access to these seeds. ASA has worked with 23 private seed companies in recent years and this engagement will be enhanced with programme support. The inter-actions with the private sector will include:

- (a) Commercial agreements to use ASA facilities for production and management of certified seed;
- (b) Joint promotion exercises to demonstrate the benefits of the improved seed;
- (c) Private Public Partnerships to develop outreach and distribution networks;
- (d) Targeted engagement with Quality Declared Seed (QDS) producers in key production areas to scale up from basic to certified seeds.

312. **TARI.** The mandate of TARI is to conduct research and to produce early generation seed (EGS) including breeder and pre-basic seeds. It is currently producing only a small fraction of industry demands for EGS, leading to seed companies importing their requirements. As a means of improving performance, TARI needs investment in irrigation, farm equipment, scientific equipment, field vehicles for research, local expertise improvement and secure storage facilities. It will link with both ASA and private seed companies to improve delivery of quality seeds for the chosen priority crops.

313. **TOSCI.** This institute is responsible for field seed inspection, sampling and testing. It would play an important role in seed certification of improved cultivars. Its needs to effectively discharge these functions will be assessed, and appropriate investment support under the programme identified.

VI. FINANCIAL MANAGEMENT SYSTEMS AND PROCUREMENT

Summary of Financial Management arrangements

314. Financial Management System: AFDP financial management arrangements follow the Government of Tanzania financial management system. There are however some enhancements proposed to mitigate on risks identified. A financial management assessment for AFDP has been carried out in accordance with IFAD's Guidance Note on Undertaking Financial Management Assessment at Design. The objective of FMA is to provide assurance that AFDP will be implemented within sound financial management practices (timely and efficient accounting systems), and punctual professional reviews; both internally (internal audit) and externally (external audit). The assessment was based on existing IFAD portfolio because AFDP will be adopting similar processes and procedures. The assessment was combined with virtual reviews at PMU and the Ministry of Finance in Tanzania.

315. The Government of Tanzania (the Borrower) will be required to maintain acceptable financial management systems including accounting, financial reporting, and auditing systems for the AFDP. Some Programme's specific additional measures have been incorporated to enhance financial management of the Programme.

316. Overall, the financial management risk is rated as 'high' and 'moderate' before and after mitigation respectively. The Government is in the process of developing a new accounting system called "mfumo wa malipo serikalini" to replace the old system which had various inefficiencies. The new system is still undergoing various testing. There is a risks that it may not be able to handle the key financial reporting parameter for IFAD programme is a financial system that will be able to i) extract SoE for withdrawal applications, ii) reporting expenditure per category and comparing budget vs actual for the same for the current year and cumulatively, iii) reporting expenditure per category and comparing budget vs actual for the same for the current year and cumulatively and iv) reporting of expenditure per financier. To mitigate on this, an off-shelf accounting system has been proposed to be acquired at programme commencement and may be integrated with the Government accounting system being developed once it has been finalized.

317. There is also a new system recently introduced for requesting authorizations from the Ministry of Finance for all transfers from the Bank of Tanzania which was noted to have elongated the process of disbursements of funds to programme accounts and hence delays in funds disbursements. To mitigate on this, PCU will be required to keenly monitor cash flow requirements and process any disbursements requests early on time considering the longer turnaround time.

318. PCU under PMO and PIU in Zanzibar under MANRLF will have programme's dedicated finance team. All other implementing institutions that are receiving funds namely TAFICO, ASA, MoA, TOSCI,MLF and TARI will designate a programme accountant within its pool of staff who will handle processing of programme's financial transactions and financial reporting to the PCU. The institutions does not have much experience with IFAD programmes which may impact on quality of financial reports. To mitigate on this, there will be orientation and capacity building training for all the finance team at PCU and all the implementing institutions which will be carried out by IFAD financial management division (FMD). The objective of the orientation training will be to orient the finance teams with the expected financial management and reporting to IFAD. Quality financial

reporting is also an area of risks especially if appropriate financial management software is not acquired and fully utilized from the start. The acquisition of an appropriate financial management software at PCU will be required as part of the initial activities. The Programme Coordination Unit (PCU) under the PMO will be the overall responsible for coordination and oversight of all financial management processes of the programme.

Implementing and participating organizations with fiduciary responsibilities

319. The Programme will be implemented through the Government of Tanzania's existing structures. The **Lead Programme Implementing Agency (LPA)** will be the Prime Minister's Office (PMO) through a dedicated Programme Coordination Unit (PCU) which will directly manage all components. As noted under programme implementation arrangements, AFDP PCU will comprise as a minimum of the following staff competitively selected: (i) Programme Coordinator, (ii) Programme Monitoring & Evaluation and Knowledge Management officer, (iii) Finance Officer, (iv) Business Development and Value Chain Specialist and (v) an Environmental Management specialist (in the first two years of the Programme as required for Category A status). A smaller Programme coordination team, comprised of a (i) Team Leader; (ii) value chain development expert and (iii) a finance officer, will be established in Zanzibar under the MANRLF. The rest of the institutions with fiduciary responsibilities namely TAFICO, ASA, MoA, TOSCI, MLF and TARI will designate a programme accountant within its pool of staff who will handle processing of programme's financial transactions and financial reporting to the PCU. The PCU will provide suitable templates to enable the implementing institutions to provide acceptable accountabilities of advances received.

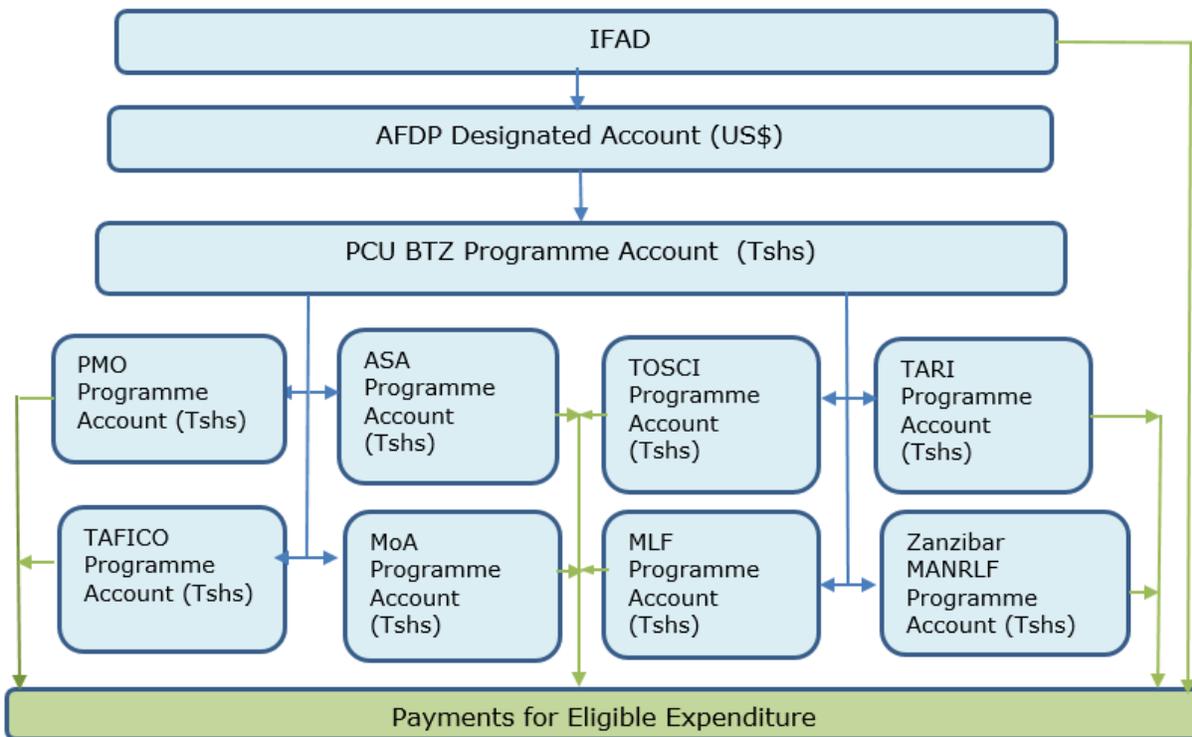
320. The **Programme Coordination Unit (PCU)**. The PCU under PMO will be the overall accounting hub for the Programme. The PCU will be responsible for ensuring the implementation of Programme activities and will have the following fiduciary responsibilities:

- a) the preparation of Annual Work plans and Budgets ensuring a bottom-up approach and timely submissions for inclusions in Government of Tanzania overall approved budget estimates;
- b) Procurement planning, execution and support service;
- c) Disbursement of funds to other implementing agencies as per funds flow structure,
- d) Management of withdrawal applications from IFAD;
- e) Financial management of the Programme, including supervising and ensuring compliance with government regulations.
- f) Financial reporting and consolidation of financial statements for audits.
- g) Any requests for "**No Objection**" to IFAD will emanate from the PCU.

Disbursement Arrangements and Flow of Funds

321. There will be three types of disbursement mechanisms for the Programme which consist of (i) Advance Withdrawal; (ii) Direct Payment; (iii) Reimbursement. Disbursements from IFAD will be made by way of an advance to the Designated Account and subsequent replenishments based on expenditure incurred as supported with Statement of Expenditure (SoE). There will be one designated account that would receive funds from IFAD which will have a corresponding dedicated Programme operational account in Tanzania Shillings (Kshs) managed by PCU. The implementing institutions including PCU will also have dedicated Programme operational accounts in commercial banks for receiving funds to facilitate activities to be carried out at their institutions.

322. Below is a diagram illustrating the flow of funds from IFAD to various points of payments for the Programme.



323. The blue arrows represents transfer of funds from one source to the other while the green arrow represents processing of payments for eligible expenditure. As demonstrated above, the programme will direct payments methods as well as payments from the eight programme accounts to be held with commercial bank accounts by each of the eight institutions receiving programme funds. The direct payments by IFAD are made on an exceptional basis and for payments of more than USD 100,000 as will be guided in the letter to borrower. The Government Counterpart financing will be made in kind hence no bank account has been proposed. When other financiers are brought on board, they will open separate dedicated accounts so as not to commingle with IFAD financing.

324. **Withdrawal Applications** for Advance Withdrawal and Reimbursements may be submitted once ninety 90 days (quarterly basis) have lapsed from the submission of the previous withdrawal application. However, if the requested withdrawal amount is at least twenty per cent (20%) of the initial advanced amounts, a withdrawal application may be submitted even if ninety (90) days have not lapsed. This will be included in the letter to the borrower (LTB).

325. The Designated Account limit will be set at the total 18 months of AWPB. The DA limit may be reviewed and adjusted if there are increased payments as the Programme progresses. In that case PCU would write an official letter to IFAD with the expected cash flow Projections and the proposed adjusted ceiling for considerations.

Planning and budgeting

326. AFDP budget will be part of the Government of Tanzania overall printed national budget estimates as part of the parliamentary approvals and appropriations. The Financial Officer of the PCU will coordinate the budget preparation processes with close coordination with Programme coordinator and the lead person for each component. At the implementing institutions, the activities to be carried out at the institutions will also need to be included in their budget.

327. The Government of Tanzania budget formulations usually start by February while the AWPB for the Programme are usually prepared and submitted to IFAD near the end of a financial year. Due to the timing difference, there can be some differences between the AWPB for which IFAD eventually expresses 'no objection', and the budget that had been appropriated and approved in the printed estimates. The appropriated amounts is a block limit, from which implementing entities have a window at submission of AWPB, to provide the breakdowns for the AWPB signed-off by the Accounting Officer at the PMO. The Financial Officer will ensure the breakdowns included in the accounting system is in line with the AWPB for which IFAD has provided no-objection and spending is in line with this.

Accounting systems, policies and procedures

328. As noted above, the Government is in the process of developing a new accounting system called "mfumo wa malipo serikalini" to replace the old system which had various inefficiencies. The new system is still undergoing various testing. There is a risks that it may not be able to handle the key financial reporting parameter for IFAD programme is a financial system that will be able to i) extract SoE for withdrawal applications, ii) reporting expenditure per category and comparing budget vs actual for the same for the current year and cumulatively, iii) reporting expenditure per category and comparing budget vs actual for the same for the current year and cumulatively and iv) reporting of expenditure per financier. To mitigate on this, an off-shelf accounting system has been proposed to be acquired at programme commencement and may be integrated with the Government accounting system being developed once it has been finalized. PCU will procure a financial management software and training the finance staff on how to use it will be provided by the vendor. The selection of Programme finance staff will also consider the agility to use computerized systems.

329. Disbursement to the implementing institutions will be made as advances. Recording of expenditure to the Programme accounting system will be done by PCU based on expenditure reports submitted by the institutions. The institutions will also be required to maintain separate Programme accounting and records within their institutional accounting system for ease of reporting to PCU.

330. The Programme expenditure initiation, authorization and payments will be in line with Government of Tanzania financial management system. The Accounting officers at each institutions (and all officials under their delegation) plays the key role of sanctioning all withdrawals from the bank accounts under them as described above. The Accounting Officer, Ministry of Finance and all Ministry officials under his/her delegation play a key role of approving all financial documents for onward submission to IFAD on financial and other Programme implementation matters.

Financial reporting

331. Financial Officer at PCU will be responsible for all financial reporting for the Programme and will produce a consolidated financial statements for the Programme. The financial

reporting will comply with International Public-Sector Accounting Standards (IPSAS) - Cash basis.

332. On annual basis, the consolidated financial statements for the Programme will be audited by the National Audit Office of Tanzania and audited financial statements submitted to IFAD within six months after the period end in accordance with IFAD guidelines. IFAD will, in addition, to the annual audited financial statements require interim financial reports on a six-monthly interval. For management decision and control, detailed monthly and quarterly management accounts will be produced.

Statements of Expenditures (SOE)

333. SoEs will be prepared by the Programme for processing of Withdrawal application. The detailed guidelines and SoE templates has been elaborated under financial guidelines issued by IFAD which will be included in the disbursements letter. The PCU Finance staff shall assist in the compilation of the expenditures from the implementing Institutions which upon meeting the IFAD threshold shall be submitted in form of Withdrawal Applications to IFAD, through the PMO and Ministry of Finance. This activity shall be carried by the PCU every quarter or if the withdrawal limits has been attained. Implementing Institutions will prepare the SoE on monthly basis and submit to PCU.

334. The PCU will prepare the consolidated SoE which shall be used in the preparation of the Withdrawal Applications using the guideline below:

- i. Each and every category should be typed on a separate summary sheet, which should be numbered sequentially, and details of categories e.g. civil works clearly marked on the section – description of category.
 - ii. Reporting period on the summary sheet to be clearly indicated with the earliest paid voucher indicating the starting period and the latest end period e.g. 1st March 2021 to 30th June, 2021.
 - iii. The rate of exchange will be the ruling rates when funds are transferred from the designated account to Bank of Tanzania Programme Tshs account and should be used when exchanging to the US Dollar equivalent. The rates will be applied on FIFO basis until the prior transfer is fully exhausted.
 - iv. The IFAD forms used including the checklist and Designated Account (DA) Reconciliation shall be attached to form the Withdrawal Application. Other documentations for attachment shall include:
 - Bank Reconciliation Statement for the last month of reporting.
 - Cash book copy of the last reporting date showing the balances.
 - Copy of the bank statement for the last reporting month.
 - DA statement
 - DA reconciliation statement
 - PCU bank account reconciliation statement
- The summary sheets will be prepared according to categories and numbered sequentially.
 - The amount spent per component should be clearly indicated.
 - The summary sheets signed by the Programme Coordinator and Finance Officer and to be signed by authorized representative from Ministry of Finance.
 - Special Account Reconciliation statement duly signed by the Finance Officer
 - Checklist withdrawal application duly signed by the Programme Coordinator and Finance Officer.
 - Application for withdrawal to be duly signed by authorized representative.

- All the above supporting documents together will be forwarded to Ministry of Finance for further processing before being forwarded to IFAD for replenishment.

Financial management organization and staffing

335. As noted above, the Programme financial management arrangements follow the Government of Tanzania financial management system. The Programme expenditure initiation, authorization and payments will be in line with Public Finance Management Act of the United Republic of Tanzania. The Programme Accounting team duties and responsibilities shall include:

- Contributing to the preparation and update of the Financial Manuals.
- Ensuring the Programme's financial procedures as detailed in the Programme Implementation and Financial Manuals and other guidelines that may be issued are strictly followed by all Programme staff and implementing institutions.
- Facilitating, as much as possible, the timely disbursement of Programme funds
- Compiling the Expenditure Returns for the PCU and other implementing institutions, and for submission to the Ministry of Finance.
- Liaising with the implementing officers from the Programme implementing institutions to ensure that SOE's are prepared in timely manner and forwarded to Ministry of Finance.
- Preparing periodic and statutory financial reports and advising the Programme Coordinator on the Programme's financial status and trends;
- Ensuring adherence to Government of Tanzania's financial practices and circulars as issued from time to time, to ensure only legible payments are made from the Programme's funds.
- To carry out periodic backstopping visits to the implementing agencies, providing financial advice and recommendations where necessary.
- Facilitating and ensuring that external auditors are availed all necessary documents during the audit as detailed in the Loan Agreement, and making a follow up on audit recommendations.
- Ensuring that the financial transactions are well documented, filed and that the Programme financial transactions are entered into the Government existing accounting systems.
- Any other duty (related to the Programme's activities) as may be assigned by the Programme Coordinator.

336. The following staff positions have been provided for to ensure adequate coordination of payments for Programme expenditure, making appropriate accounting entries and financial reporting.

Implementation level	Programme Staff position and numbers	Remarks
PCU under PMO	Financial Officer (1)	-The staffing is based on the fact that PMO is playing coordination role with implementation done by other implementing institutions.

Implementation level	Programme Staff position and numbers	Remarks
		<ul style="list-style-type: none"> -The staff will be hired on two years contract, renewable based on performance which is expected to enhance performance. -The staff will be hired as part of start-up activities. -The payments approvals and all other internal checks and reviews will be provided by PMO Finance Staff.
PIU in Zanzibar under MANRLF	Financial Officer (1)	<ul style="list-style-type: none"> -The staff will be hired on two years contract, renewable based on performance which is expected to enhance performance. -The staff will be hired as part of start-up activities. -The payments approvals and all other internal checks and reviews will be provided by MANRLF Finance Staff.
<ul style="list-style-type: none"> • TAFICO; • ASA; • MoA; • TOSCI; • MLF; and. • TARI. 	Each to have one Designated Programme Accountant	<ul style="list-style-type: none"> -These will be staff of the implementing institutions, designated to handle financial reporting and coordinating processing of transactions at those institutions. -It will be one of the condition for disbursements from PMU to have a designated accountant for the Programme, who will be issued with an official designation letter from the implementing institutions signed by the head of the respective institution.

Roles and Responsibilities of the Finance Staff

PCU Finance Officer

337. The Finance Officer reports directly to the Programme Coordinator, and is responsible for financial management of the Programme and for maintaining all Programme accounts in good order. As the responsible staff for the finance unit for the Programme, the Finance Officer will take charge of all matters in the Programme accounting cycle. The Programme accounting cycle to be overseen by the Finance Officer starts from financial-related inputs in AWPB preparation and budget control, committing funds, disbursements and cash flow management in an effective and efficient manner, financial reporting to ensuring smooth audits and facilitation for supervision missions on all financial management aspects. The position is based in the Prime Minister Office, with periodical travels to other implementing agencies. The Finance Officer will be responsible for expediting all loan management and disbursement activities through PMU/ Government systems. Specific responsibilities include but are not limited to the following:

- Installation of appropriate accounting/reporting systems to ensure that the PCU and especially the Programme Coordinator are regularly informed of on-going financial status and transactions.

- Follow up on preparation of source documents, e.g. payment vouchers, journal vouchers
- Ensure chronological filing of documents with adequate cross reference to ensure ease of retrieval
- Follow up of accountabilities, maintaining a detailed log of outstanding accountabilities
- Ensure timely capture of Programme in the Government budget as required by the Government budgeting processes and calendars.
- Communicate to all implementing partner institutions and service providers their financial responsibilities, the funds available and how to access it, and the requirements of reporting and record keeping in accordance with prevailing government practices which are acceptable to IFAD.
- Ensure that all Programme funds are used in accordance with the conditions of the financing agreements, with due attention to economy and efficiency, and only for the purposes for which the funds were provided;
- Ensure that all necessary supporting documents, records and accounts are kept in respect of all Programme activities, with clear linkages between the books of account and the financial statements presented to the financiers;
- Ensure that designated account and operational accounts are maintained in accordance with the provisions of the financing agreement and in accordance with the financier's rules and procedures;
- Contribute to the preparation/ revisions of the Programme Implementation and Financial Manuals;
- Ensure the Programme's Financial Procedures as detailed in the Programme Implementation and Financial Manuals are strictly adhered to by all Programme staff and executing agencies at the national and local levels;
- Ensure that the financial statements are prepared in accordance with International Public Sector Accounting Standards as adopted in Tanzania;
- Liaise with external auditors to audit the Programme accounts to meet the required submission dates by both Government and IFAD;
- Liaise with the Designated Programme Accountants from the implementing institutions to ensure that SOEs are prepared in timely manner and forwarded to IFAD;
- Process documentation and follow up on disbursements from the government and IFAD to ensure that releases are not delayed. Ensure that funds for Programme implementation are disbursed in a timely manner to enable Programme interventions to be carried out on time:

Implementing Institutions Programme Accountant

338. The Programme Accountants will be part of the implementing institutions finance team dedicated to handle programme financial matters. Specific responsibilities include but are not limited to the following:

- Follow up on preparation of source documents, e.g. payment vouchers, journal vouchers
- Ensure chronological filing of documents with adequate cross reference to ensure ease of retrieval

- Follow up of accountabilities, maintaining a detailed log of outstanding accountabilities
- Review eligibility of expenditure in accordance with the financing agreement
- Report on the operation of internal control including budget controls and report any deviations
- Prepare project reports to enable the withdrawal of funds from PMU/PCU and manage the overall treasury/ cash flow planning aspects of the programme within the implementing institution.
- Assess compliance with Tanzania laws and regulations governing the operation of the implementing institutions including accountancy standards and the requirements for audits and financial reporting.
- Review external auditor's reports (Audit Opinions and management letters), including any qualifications and whether any concerns raised by auditors have been adequately addressed in relations to the implementing institution.
- Review reports of IFAD/PMO supervision or review missions and follow-up on the implementation of agreed to actions.
- Evaluate systems for asset management, provision for asset maintenance and replacement.
- Review documented accounting procedures and accounting manuals in terms of their adequacy, and correspondence between actual and documented procedures.
- Evaluate annual work plan and budgeting procedures, and budgetary control systems applied to monitor actual expenditures versus budget including commitment controls to avoid commitments beyond available resources.
- Review other aspects of the accounting and financial control systems including: cash management and banking; procurement of goods and services; advances and acquittals; authorisation of expenditure and budget/actual comparisons.

Internal Controls

339. In order to effectively safeguard Programme resources, internal controls have been instituted at all the implementing institutions in the whole framework of financial and administrative procedures. The identified controls range from; proper record keeping and posting, authorization of accounting, procurement and administrative documents, balancing and checking, physical security of assets, double signing (approval) arrangements, to financial reporting and monitoring. These are prescribed in PFM act. There are internal audit functions at each of the implementing institution that will be required to provide checks to the programme, as noted below, to check overall compliance to internal controls and provide support towards improving systems, procedures and processes.

Internal Audit

340. Internal audits will be conducted to provide assurance that the Programme is being implemented in accordance with the Government regulations and is complying with Programme financing covenants. The Programme will utilise the internal audit function at each implementing institutions to carry out internal audit. PCU at PMO will be obtaining

copies of the internal audit reports and follow up to ensure recommendations are implemented as required.

341. IFAD supervision and implementation support missions will consistently demand and review the rolling internal audit plans, internal audit reports produced and shared as per internal audit plans and implementations of internal audit recommendations.

External Audit

342. External Audit: On annual basis, the consolidated financial statements for the programme will be audited by the National Audit Office of Tanzania and audited financial statements submitted to IFAD within six months after the period end in accordance with IFAD guidelines. The Terms of Reference will require the Fund's No Objection. IFAD will require specific audit opinions: (a) general opinion on the financial statements, (b) opinion on the balances of funds held in the special account. IFAD handbook on audit will be shared with the auditors to enhance their reviews.
343. The audits by OAG are carried out in accordance with the International Standards of Supreme Audit Institutions (ISSAIs) and relevant ethical requirements. As such they also include revenue, expenditure, assets and liabilities. In addition, they highlight any relevant material issues and systemic and control risks. This enables the auditor to express an opinion as to whether or not the financial statements are prepared, in all material respects, in accordance with an identified or applicable financial reporting framework and (or) statutory requirements.
344. The National Audit Office in drawing up their audit Programmes incorporates review of the implementation of the previous period's recommendations. If those recommendations have not been followed this will be stated in the current audit report. The capacity of National Audit Office assessed as satisfactory in terms of undertaking Programme audits. The risk assessment here is therefore low. The audited financial statements will be submitted to IFAD within 6 months after financial end as required by IFAD.
345. **Nature of Programme eligible expenditures** - Programme expenditure categories have been allocated in accordance with the standard expenditure categories. Detailed cost tables are presented in this document. Transaction-based disbursement procedures will be used. The eligibility of expenditure should require:
- a) The expenditure shall meet the reasonable cost of goods, works and services required for the Programme and covered by the relevant AWPB and procured in conformity with the procurement guidelines
 - b) The expenditure shall be incurred during the Programme implementation period, except that expenditures to meet the costs of winding up the Programme that may be incurred after the Programme completion date and before the closing date
 - c) The expenditure shall be incurred by a Programme party
 - d) If the agreement allocates the amount of the financing to categories of eligible expenditures and specifies the percentages of such eligible expenditures to be financed, the expenditure must relate to a category whose allocation has not been depleted, and shall be eligible only up to the percentage applicable to such category.
 - e) The expenditure shall be otherwise eligible in accordance with the terms of the financing agreement
346. All payment vouchers will be examined to ascertain the following requirements:

- That the expenditure has been incurred on proper authority and is a charge to properly voted funds.
- That payment vouchers are supported by original documents or certified photocopies of the original documents (such copies must be certified by the appropriate officer that he has taken all possible steps to ensure that no payment has been made on the original document).
- That rates charged are according to regulations/contracts, fair and reasonable.
- That appropriate authority has been obtained and a copy of the minutes attached to the payment vouchers for reference purposes.
- That the allocation of account codes is correct.
- That appropriate certificates have been signed by the Accounting Officers or officer authorized by him in writing.
- That the computations and costing have been verified and are arithmetically correct.
- That the persons named in the payment vouchers are those entitled to receive the payment.
- Any alterations of payment voucher should be counter signed by the Authorised Officers in charge of the unit.
- That the signatories to the certificates are as per those indicated in the specimen signature document
- That payments are supported by duly certified invoices, receipted bills (for direct cash payments), LPOs, LSOs, VAT certificates, copies of supplier's delivery note to confirm stores entry into the relevant inventory ledgers.

FM Supervision plan

347. **Supervision.** AFDP will be directly supervised by IFAD with annual implementation support missions, followed initially by shorter follow-up missions six months later as may be assessed. Supervision will not be conducted as a general inspection or evaluation, but rather as an opportunity to jointly assess achievements and lessons, and to reflect on ways to improve implementation; and impact. From a financial management perspective, IFAD missions will keenly follow up the fiduciary risk at various levels, including the use of the report-based disbursement.

Procurement Procedures and Management

348. According to the IFAD general conditions for financing, 'Procurement of goods, works and services shall be carried out in accordance with the provisions of the Borrower/Recipient's procurement regulations; to the extent that, such are consistent with the IFAD Procurement Guidelines. It is further stated that each Procurement Plan shall identify procedures which must be implemented by the Borrower/Recipient in order to ensure consistency with the IFAD Procurement Guidelines'. By specifying that the borrower's or recipient's procurement regulations must be consistent with IFAD's procurement guidelines, and by requiring the borrower/recipient and the Fund to agree on mandatory procedures, it ensures that there is consistency, and that there is a more predictable and coherent approach to procurement processes.

349. General principles to be followed are;

- a. The responsibility for programme implementation and for procurement using IFAD funds lies with the Government.

- b. IFAD ensures that the proceeds of any financing are used only for the purposes for which the financing was provided, after a full, fair and legitimate competition among the bidders with due attention to the principles of transparency, efficiency, effectiveness and economy.
- c. IFAD will permit the adoption of the Borrower's national procurement regulations since such regulations have been seen to be compatible with IFAD's guidelines.

350. Programme Specific principles are;

- a. Procurement is carried out in accordance with the Loan Agreement and the Letter to the Borrower (and PIM) and any subsequent changes reflected in the Fund's Mission Reports (e.g. supervision reports, mid-term reviews, back-to-office reports, aide- memoires, and correspondence).
- b. Procurement is to be conducted within the programme implementation period (from the date of effectiveness to the date of completion). Procurement cannot be undertaken between the date of completion and the closing date.
- c. Procurements undertaken do not exceed the availability of funds duly allocated by the financial agreement
- d. Procurement is consistent with the approved Annual Work Plan and Budget; and
- e. Procurement provides the best value for money: Best value does not necessarily mean the lowest initial SPIU option, but rather represents the best return on investments, taking into consideration the unique and specific circumstances of each procurement activity; the balance of time, cost and quality required; and the successful overall outcome of the contract in meeting its original objectives.

351. **Institutional Set up.** Section 31 of PPA 2011 read together with the second schedule under Section 31(2) of PPA, 2011 requires every Procuring Entity (PE) to establish a Tender Board properly composed and a Procurement Management Unit (PMU). In this regard, all AFDP partners that lie in the category of 'Procuring Entity will be required to have a TB with the following capabilities/composition;

- The established TB will be composed of a Chairman, six members who are either Heads of departments or person of similar standing.
- Members of the TB should be trained in PPA, 2011 and its Regulations for the discharge of their functions as described in Section 33 of PPA, 2011 and Reg. 18 of GN No; 300 of 2014.
- The Accounting Officer for PEs will establish a Procurement Management Unit (PMU) and it will be staffed to an appropriate level depending on the nature and volume of the PE procurements.
- PMU staff shall be trained in PPA 2011 and its regulations to facilitate proper discharge of their functions as described under Section 38 of PPA, 2011 and Reg. 25 of GN No; 300 of 2014.

352. **National rules and regulations.** Public procurement in Tanzania is governed by the Public Procurement Act (PPA), No. 7 of 2011 as amended in July 2016, and subsidiary public procurement regulations issued in 2013, and amended in 2016. Further to the existing laws and regulations, the Public Procurement Regulatory Authority (PPRA), in its mandate to

Ensure the application of fair, competitive, transparent, and value for money procurement standards and practices issues circulars to Procurement Entities (PEs). AFDP, being a government funded project, will strictly adhere to procurement guidelines set out in the PPA.

353. **Procurement methods.** The decision on which procurement method to use will be based on thresholds set out in the PPA and the subsidiary regulations. However, unless specifically agreed, and explicitly stated in the procurement plan, international competitive bidding (ICB) will be used for contracts above the following values:

- Works: above USD 800,000 million equivalent
- Goods: above USD 200,000 equivalent; and\
- Services:” above USD 100,000 equivalent

354. The prior review amounts have been initially set at:

- Award of any contract for works estimated to cost USD 150,000 equivalent or more and any contract awarded through direct contracting;
- Award of any contract for goods and works estimated to cost USD 70,000 equivalent or more and any contract awarded through direct contracting;
- Award of any contract for services estimated to cost USD 60,000 or equivalent or more and any contract awarded through direct contracting

355. It should be noted however that during implementation, AFDP can request IFAD to modify the above thresholds with justification, and depending on the outcome of the programme risk assessment during supervision missions.

356. **The Senior Procurement Officer (SPO) has the following roles and responsibilities.**

357. **Roles:**

1. Promote fulfilment of IFAD’s programme procurement oversight function.
2. Champion the design and effective implementation of appropriate programme procurement quality assurance and risk-based systems.
3. Provide direction to the Regional Division management and CPMTs on procurement policies, practices, processes and procedures.
4. Dispense strategic support and backstopping to the Regional Division management and CPMTs on procurement issues throughout programme design, supervision and implementation support, including by serving as a member of the Programme Design Team (PDT).
5. Provide authoritative advice, counsel and guidance particularly on complex procurement issues, innovative solutions.
6. Assist the Regional Division management and CPMTs on approaches and strategies for the development of procurement documents that take into consideration latest sector trends, life-cycle costing analysis, value-for-money concepts and practices used in other donor agencies including multilaterals.
7. Monitor procurement performance across the portfolio, develop key programme procurement performance indicators and risk management tools to ensure proactive identification and action to address procurement and contract management issues and bottlenecks.
8. Assess needs and identify training options for CPMs, ICO staff and programme team members to ensure robust management of procurement risk. When necessary, provides training and guidance to CDs/CPMs, ICO staff and programme team members on programme procurement management and related risks.

9. Advise, as appropriate, the Regional Division management and CPMTs on market analysis, market outreach and communication strategies to attract capable, available and responsive bidders.
10. Contribute to the knowledge and expertise of programme procurement by staying abreast of and reporting on current trends in international public procurement.
11. Recommend practices and procedures for implementing procurement lessons learned in projects funded or administered by IFAD.
12. Share knowledge through formal trainings and/or hands-on field practice and exchanges lessons learnt with other Regional Divisions and OPR.
13. Prepare new procurement templates and guidance notes on various topics in procurement, or suggest modifications to existing ones.
14. Identify procurement consultants; prepare, review, clear their TORs; propose their fee rates; brief and guide them throughout their assignment, and quality assure their output(s); and, evaluate their performance.
15. Facilitate, follow up and support procurement investigations.
16. Organise, conduct or supervise the conduct of programme procurement reviews and Procurement Risk Matrix assessments.
17. Prepare and contribute to updating ORMS and Management Letters.
18. Lead development, operationalization and roll-out of ICT systems for procurement.

358. Responsibilities:

1. Undertake or clear Procurement Risk Matrix assessments.
2. Prepare or clear procurement related sections of Programme Concept Notes (PCNs) and Programme Design Reports (PDRs), including the Integrated Risk Framework, the Programme Implementation Manual (PIM), the 18-month procurement plan, and the Financing Agreement and Letter to the Borrower.
3. Review and/or clear procurement activities and processes requiring IFAD's prior review and advise CDs/CPMs accordingly regarding issuance of NOs.
4. Undertake or clear programme procurement reviews.
5. Provide inputs to procurement issues in supervision missions.
6. Support procurement training and capacity building.
7. Undertake portfolio-wide analysis of procurement performance trends and risks.

359. As appropriate and taking procurement risk assessments into account, these responsibilities (preparation, undertaking, and review) may be delegated to IFAD rostered or junior procurement consultants or qualified divisional staff working under the SPO's supervision. The SPO clears when s/he did not prepare, and when s/he prepares, clearance may need to be undertaken by other members of the team.

APPENDICE 1/

DRAFT

KNOWLEDGE MANAGEMENT AND COMMUNICATIONS STRATEGY

For

The Agricultural and Fishery Development Programme (AFDP)

2021- 2026

Prepared September, 2020

AFDP DRAFT PIM

CONTENTS

1.0 INTRODUCTION	111
2.0 SITUATION ANALYSIS	113
2.3 SWOT Analysis	114
3.0 RATIONALE	114
4.0 ALIGNMENT TO EXISTING STRATEGIES, POLICIES AND GUIDING PRINCIPLES	115
5.0 STRATEGIC GOALS OF THIS KNOWLEDGE MANAGEMENT AND COMMUNICATIONS STRATEGY	115
7.0 KEY AND GENERAL MESSAGES	117
8.0 PILOTING OF THE CKM STRATEGY THROUGH PRETESTING OF THE AFDB MESSAGES	118
9.0 APPROACHES, CHANNELS AND TOOLS	118
9.1 Mass media channels	118
9.2 Interpersonal media channels	119
9.3 Social Media	119
10.0 ESTIMATED BUDGET, TIME-FRAME AND SUCCESS CRITERIA OF THE STRATEGY	120
11.0 MONITORING AND EVALUATION	120
12.0 CONCLUSION	Error! Bookmark not defined.

1.0 INTRODUCTION and COUNTRY CONTEXT

360. The United Republic of Tanzania (henceforth referred to as 'Tanzania) is one of the stronger economic performers in Sub-Saharan Africa, and one of the top three growth performers in East Africa. Between 2013 and 2018, its average gross domestic product (GDP) growth at 6.5 percent was behind only Ethiopia (9.5 percent) and Rwanda (6.7 percent). This growth is projected to slow to 2.5 percent in 2020, but with a projected rebound at 5.5 percent in 2021, in the scenario in which the COVID-19 crisis persists to the end of 2020. Public debt is currently sustainable, with all debt burden indicators being below the required thresholds.

361. The COVID-19 shock is expected to result in negative macro-economic effects for the Tanzanian economy. These are primarily reflected through: (i) a decline in travel and tourist flow; (ii) significant volatility in commodity prices; decline in exports and imports; (iii) lockdown in neighbouring countries that has caused disruptions in supply chain, notably food supply chains. It is expected that the increasing strain on the national budget could potentially reduce planned investments in the agricultural sector, resulting in threats to crop production, food security and rural agribusiness linkages.

362. Agricultural production contributed to about 29.1 percent of GDP, 47 percent of exports and provided employment to about 66.3 percent of Tanzanian households in 2018, while meeting 95 percent of the country's food requirements. Tanzania has 95.5 million hectares (ha) of land, of which 44 million ha are classified as arable, with only 23 percent under cultivation. About 80 percent of agricultural production comes from rainfed, low-input smallholder farms highly vulnerable to climate variability and change. Despite some advances over the last ten years, especially for cereals in high potential areas, a sustainable and reliable supply chain for quality seed has not emerged. Multiplication and use of improved varieties remains low (lack of Early Generation Seeds and private sector bulking up certified seeds) and volumes tend to be low and supply dwindles in the absence of project funding.

363. The country's **Exclusive Economic Zone in the Indian Ocean**, covering an area of 223,000 km² remains unreachable by local fishers due to, among other things, limited capacity, experience and lack of appropriate fishing vessels suitable for deep sea fishing. On the other side, the national demand for fish seeds is estimated at over 86 million fingerlings, against current production of about 21 million fingerlings. More than 30 percent of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids, minerals and essential and amino and fatty acids.

364. **Alignment with IFAD corporate priorities.** The Programme is in line with the three strategic objectives of IFAD Strategic Framework 2016-2025, namely: (i) increase poor rural people's productive capacities; (ii) increase poor rural people's benefits from market participation; and (iii) strengthen the environmental sustainability and climate resilience of poor rural people's economic activities. It is aligned with the Country Opportunity Strategic Programme (2016-2021) for Tanzania and relevant IFAD strategies and guidelines especially those pertaining to gender, youth, climate/environment, private sector, rural finance, nutrition, and scaling up.

365. The programme is considered nutrition-sensitive, gender mainstreamed and climate focused. As such, AFDP will create **equal opportunities for women and men** to benefit from: (i) enhanced access to quality crop and fish seeds, technologies and best management practices for production, processing and value addition systems; (ii) access to nutritious food,

especially from legumes (beans and pulses) and fish; (iii) reduced workloads due to increased resilient crop productions and greater efficiency of fisheries production and post-harvest technologies; (iv) better access to productive resources and services; (v) access to more profitable markets and increased income; and (vi) participation in community organisations, business networks, smallholder farmers and fishers cooperative societies with improved decision making.

366. **Nutrition.** The number of undernourished people in Tanzania increased from 12.2 million from 2004 to 2006 to 14.1 million from 2017 to 2019, although the total population's prevalence of undernourishment decreased from 31.7 percent to 25.0 percent during the same period. About 32 percent of children under the age of five years are stunted or short for their age, which is a condition reflecting a cumulative effect of chronic malnutrition. This is linked to an inadequate diet, which is high in calories and very low in protein and essential nutrients. It is estimated that 85 percent of Tanzanians cannot afford a healthy diet, for which the cost represents 104.1 percent of food expenditure.

367. **Climate change and environment.** In order to mitigate and adapt to uncertainties associated with climate variability and change (drought and floods), the programme will contribute to the development of appropriate locally-adapted seeds, which are more productive and resilient to climate change, pests and diseases. In order to recover and protect coastal and marine resources, the programme will promote environmentally friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers tents) and storage to reduce post-harvest losses. In particular, the programme will support investments in stock assessments, selective fishing gears and methods to avoid catching non-targeted species and participatory management of natural resources to address destructive fishing practices and protect mangroves. AFDP will also encourage participation of young people as seed producers, fish farmers, technicians, agri-input specialists, lead farmers, market information specialists to provide information to agro-traders, processors and other stakeholders in the targeted value chains. AFDP's investments in the postharvest infrastructures (i.e. fish processing plants, ice making, solar drying, etc.) offer direct decent employment opportunities for the youth. Similarly, investments in seed production, agro-dealer networks, fingerlings production present entrepreneurship opportunities for the youth in several ways. The Programme will reach 30 percent of young men and women.

368. The Programme will also partner with the Tanzanian Agricultural Development Bank (TADB) to **facilitate access to adapted and affordable finance** by the various actors in the crop and fish value chains. The partnership will leverage the Smallholder Credit Guarantee Scheme, initially funded by IFAD, through MIVARF, and concessional credit lines, to be funded by other TADB partners. The Programme will also enhance financial literacy of small-scale producers and small agri-enterprises to stimulate uptake of the financial services. It will leverage on TADB and the private sector to pilot and scale-up digital solutions that will positively impact rural young women and men.

369. **Policies and Programmes.** The second phase of the Agricultural Sector Development Programme (ASDP II 2017/2018–2027-/20287) aims at transforming the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition. ASDP highlights several constraints to achieving agricultural transformation targets, including (i)

underinvestment in productivity enhancing technologies; (ii) limited access to technology demand and delivery channels; (iii) limited access to market financing for the uptake of technologies; and (iv) inadequate facilities to sustain supply of crop and fish seeds and innovations.

2.0 SITUATION ANALYSIS

1. IFAD has supported Tanzania's agricultural sector for 40 years (since 1980) and is recognized by GoT and other development partners for providing continuous as well as innovative technical and consistent financial support in promoting inclusive rural transformation.

2. Past IFAD investments in Tanzania adopted a production-focused approach, which sought to directly influence food security through increasing agricultural productivity. Recent projects have used a value chain development approach often focusing on marketing of particular commodities but have overlooked the nutritional values of commodities. The AFDP has been designed using an inclusive food systems approach that promotes livelihoods' diversification strategies and resilience (crops and fisheries) in such a way that programme investments will not only be profitable, but bring benefits for nutrition and social inclusion, and have positive or neutral impacts on natural resource management and bio-diversity. The selected crop and fish value chains are highly relevant for increasing food security and nutrition in the target area. One-third of Tanzania's cropland (4 million ha), is devoted to maize, which accounts for 40 percent of the national caloric intake.

3. Over 75 percent of rural households in Tanzania depend on beans and other pulses for daily subsistence and beans account for 71 percent of leguminous protein in diets. Grown by about 4 million households, sunflower oil is healthier than other types of oil, as it is low in saturated fat and high in polyunsaturated fat. More than 30 percent of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids, minerals and essential nutrients as well as amino and fatty acids, including Omega 3. In addition, sunflower cakes and maize are important ingredients in fish feeds and therefore help to improve aquaculture productivity and profitability. Increased income from maize, sunflower and beans/pulses to improve productivity will provide farmers with resources to fingerlings and fish feed.

4. Past IFAD projects in Tanzania (MIVARF and MUVI⁵³), which supported the introduction of 'Quality Declared Seeds (QDS) approach' for sunflower, beans and sesame, contributed in increasing the awareness of farmers on the availability of quality and affordable seeds and planting materials. Despite all these efforts, a sustainable and reliable supply chain for quality seed is yet to emerge.⁵⁴ Multiplication and use of improved varieties remain low and volumes also tend to remain low; while their supply dwindles in the absence of project funding. The GoT has sought to partner with IFAD to strengthen the country's formal seed system, through support to public institutions, private seed companies and farmers organisations, which

⁵³ Market Infrastructure, Value Addition and Rural Finance Support Programme (MIVARF) and Rural Micro, Small and Medium Enterprise Support Programme (MUVI)

⁵⁴ See also: http://www.ccardesa.org/sites/default/files/ickm-documents/AgriExperience2016_ReachingFarmersWithHighQualitySeedOfModernVarieties_Report_EN.pdf

all have unique opportunities to produce adapted quality early generation seeds, and resolve the constraints of smallholder farmers using uncertified seeds or low-yielding varieties.

5. IFAD has built extensive experience in the region, with large aquaculture investments in Kenya and Mozambique, from which AFDP has drawn important lessons and linkages to support the growth of small-holder aquaculture. Despite the lucrative potential of fisheries resources in the Exclusive Economic Zone (EEZ), Tanzania is yet to undertake large-scale commercial fishing activities in the EEZ. The GoT has thus requested IFAD's support to develop the country's capacity to utilize the fisheries resources in the EEZ through public-private partnership (PPP) arrangements, while building a strong framework for sustainable management of these resources. IFAD's value addition is derived from its rich experience in promoting public-private-producer partnership (4P) joint-ventures⁵⁵ as a mechanism to include smallholder fishers in deep sea fishing and related post-harvest loss reduction infrastructures.

2.3 SWOT Analysis

To develop knowledge management and communications objectives, AFDP will conduct a SWOT Analysis to establish the programme's strengths, weaknesses, opportunities, and threats and see how the programme can play on its strengths through effective communications; how its opportunities can be utilized in the knowledge management and communications strategy implementation and how threats can be turned into opportunities.

3.0 RATIONALE

370. In order to accelerate ASDP II's implementation and delivery of scalable results, the Government of Tanzania (GoT) has requested support to implement two priority areas of the ASDP II. In doing so, this will address key challenges in the seeds, fisheries and aquaculture value chains, while strengthening institutional capacities of key public institutions and private sector stakeholders. IFAD has supported Tanzania's agricultural sector for 40 years (since 1980) and is recognized by GoT and other development partners for providing continuous as well as innovative technical and consistent financial support in promoting inclusive rural transformation. The innovation in AFDP is grounded in the use of an inclusive food systems approach, which promotes livelihoods' diversification strategies (crops and fisheries) in such a way that programme investments will not only be profitable, but will bring broad-based benefits for nutrition and social inclusion, and have positive or neutral impacts on natural resource management and bio-diversity. The selected crop and fish value chains are highly relevant for increasing food security and nutrition. In addition, the programme will adopt appropriate private-public-producer partnership (4P) business models to leverage financing, promote risk sharing, enhance innovation and market access as well as increase the inclusion of smallholders and fishers in profitable seed and fish value chains.

371. Given that it is the first time IFAD is implementing a project of this magnitude – combining crop and fisheries, there will be a lot of lessons and knowledge to be generated and shared among stakeholders. However, to implement the CKM, the Baseline survey have

⁵⁵ IFAD 2016. How to do public-private-producer partnerships (4Ps) in agricultural value chains. [https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+ percent284Ps+ percent29+in+Agricultural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3](https://www.ifad.org/documents/38714170/40314128/Public-Private-Producer+Partnerships+percent284Ps+percent29+in+Agricultural+Value+Chains/853d82f8-45c9-4493-b2da-b509112cc0b3)

recommended a number of interventions that AFDP should consider implementing in order to achieve the broad objectives. *(explain briefly after baseline study)*

4.0 ALIGNMENT TO EXISTING STRATEGIES, POLICIES AND GUIDING PRINCIPLES

This Knowledge Management and Communications Strategy is anchored on and conceived within the broad framework of IFAD Partnership Strategy (2012), Toolkit for IFAD Communications (May 2019) and the ASDP-II M&E and Communication and Knowledge Management Strategy. All equipment procured and materials to be produced will carry the organizational emblems/logos of AFDP, Government and IFAD. The objectives of this Communication and Knowledge management Strategy is to promote visibility of the programme, create awareness among diverse audience in the rural finance interventions and influence upscaling of the interventions to achieve the programme objectives.

The Strategy will be executed in close collaboration with the Government, and AFDP implementing partners.

5.0 STRATEGIC GOALS OF THIS KNOWLEDGE MANAGEMENT AND COMMUNICATIONS STRATEGY

5.1 LINKAGE TO SOUTH - SOUTH TRIANGULAR COOPERATION

The CKM strategy will seek to provide linkages to the SSTC agenda on the following areas: sharing of knowledge, improve curation, sharing and use of evidence, lessons learned and scaling up of good practices. In addition, the CKM Officer will seek to work closely with SSTC knowledge centres, regional hubs and ICO as required for support and guidance.

6.0 KEY THEMES AND STAKEHOLDERS FOR COMMUNICATION AND KNOWLEDGE

Table 1. Typical KM products

Products	What knowledge can they share and with who?
<ul style="list-style-type: none"> ▪ Stories from the field ▪ Lessons learned ▪ Project briefs ▪ Policy briefs ▪ Case studies 	<ul style="list-style-type: none"> ▪ Good for sharing information on project activities, results and lessons learned with a wide variety of audiences from beneficiaries to high-level decision makers. ▪ Typically short (a few pages) and not too technical, but with enough detail to be useful or to encourage audience to seek out more information.
<ul style="list-style-type: none"> ▪ Reports and studies ▪ Technical guidelines ▪ Working papers 	<ul style="list-style-type: none"> ▪ Addressing particular issues in significant detail, normally longer and more analytical and targeted towards audiences with

<ul style="list-style-type: none"> ▪ How-to-do-note ▪ Research publications 	<p>specialist knowledge or interest in the topic.</p> <ul style="list-style-type: none"> ▪ Require considerable investment of time and resources to produce
<ul style="list-style-type: none"> ▪ Inputs to partners publications ▪ Inputs to government policies and strategies 	<ul style="list-style-type: none"> ▪ Useful opportunities to put project knowledge into action and to use partners and government resources to leverage its impact and raise awareness of the project.
<ul style="list-style-type: none"> ▪ Articles (newspaper/magazine) ▪ Blog posts ▪ Newsletters ▪ Press releases 	<ul style="list-style-type: none"> ▪ Useful for communicating information about project activities and results achieved and reaching a wide general audience. ▪ Newspapers, websites and blogs are normally eager for content and are normally keen to publish interesting stories from projects.
<ul style="list-style-type: none"> ▪ Videos ▪ Photos ▪ Interviews ▪ Infographics 	<ul style="list-style-type: none"> ▪ These make great content for the project to disseminate through social media – publishing videos and photos of project activities, beneficiaries, field visits etc. online is a good way to attract interest (but make sure you get permission where necessary). Interviews often provide good soundbites for sharing through social media, perhaps together with links to longer articles or publications.

Table 2: Typical KM Stakeholders.

Stakeholders/Target Audience	What do they want/need to know? What do we want to communicate to them?
<p>Local</p> <ul style="list-style-type: none"> ▪ Project staff ▪ Beneficiaries ▪ Local communities ▪ Local offices of government agencies and project partners 	<ul style="list-style-type: none"> ▪ Purpose and activities of the project ▪ Opportunities to partner, participate, or benefit ▪ Notifications about project events and meetings ▪ Project results and impacts ▪ Experiences of beneficiaries ▪ Relevant lessons learned
<p>National</p> <ul style="list-style-type: none"> ▪ Project partners ▪ Other similar projects 	

<ul style="list-style-type: none"> ▪ Government agencies ▪ General public 	<ul style="list-style-type: none"> ▪ Results of successful pilots and trials of new technologies, crops etc.
<p>International</p> <ul style="list-style-type: none"> ▪ Donors/financiers ▪ Development agencies ▪ Communities of practice/interest groups ▪ Other projects ▪ General public ▪ Policy makers 	<ul style="list-style-type: none"> ▪ Guidelines and methodologies ▪ Results of studies, surveys and assessments undertaken ▪ Policy relevant lessons

6.1 Proposed interventions for CKM promotion

The proposed interventions should be in alignment with ASDP-II CKM plans and findings of the baseline study. See example below

Action area	Proposed activities
Institutional strengthening	i. Training of national coordination, and district technical/facilitation teams
CKM action area	i. Repackage technical information into user friendly information for it to be shared with different stakeholders ii. Conduct formal and regular meetings on CKM among ASLMs and LGAs (awareness and progress) iii. Conduct training programme on CKM and IT at different level iv. Provide technical backstopping and guidance in KM and communication to regional and LGAs staff, v. Conduct media forums, workshops & seminars on agricultural sector issues vi. Produce promotional/educational material for target audience vii. Document AFDP lessons learned and establish best practices for sharing with stakeholders iii. Participate in local and national events for publicity of AFDP and disseminate new innovations ix. Fostering partnerships for broader knowledge sharing and learning

7.0 KEY AND GENERAL MESSAGES

TABLE 3: Include Key messages of knowledge and communication that AFDP may wish to communicate with the public. The messages have to be in line with the KM of ASDP-

II and in line with the key themes outlined earlier. To be done after consultation with stakeholders

- Message 1
- Message 2
- Message 3

TABLE 4: General messages

Include General messages of knowledge and communication that AFDP may wish to communicate with the public. The messages have to be in line with the KM of ASDP-II and in line with the key themes outlined earlier. To be done after consultation with Key Stakeholders

- Message 1
- Message 2
- Message 3

8.0 PILOTING OF THE CKM STRATEGY THROUGH PRETESTING OF THE AFDB MESSAGES

The CKM strategy will pretest the current AFDP messages that were jointly developed by AFDP project and relevant stakeholders including partners, *(name them)*. The pretest exercise will also include *(include the type of key and general and specific messages that were pretested)*

9.0 APPROACHES, CHANNELS AND TOOLS

This CKM Strategy will use various approaches including social advocacy, community mobilization, face-to-face, social marketing and media relations. Some of the communication channels and tools to be used are within the mix of the communication approaches include, inter alia: *(only select those that will be used by the project)*

9.1 Mass media channels

1. **Radio:** Radio news bulletins, radio programmes, radio documentaries, Jingles, drama, panel discussion;
2. **Television:** TV news bulletins, TV Jingle, TV documentaries, TV Panel Discussion;
3. **Roadside signage/signposts;**

4. **Newspapers:** Press Releases, news stories, feature stories, Newspaper pull-outs;
5. **Multimedia:** audios, video clips and photography;
6. **Mobile phone services:** Voice and SMS
7. **Mobile** film/video shows;
8. **Others (mention)**

9.2 Interpersonal media channels

1. Publications: leaflets, posters, brochures, calendars, diaries;
2. Stickers on equipment such as vehicles, motorcycles and other movable goods with AFDP, Government and IFAD logos as appropriate;
3. Branded Golf/T-Shirts, Caps, Banners, document holders;
4. Community meetings/forums;
5. Media tours with implementing partners;
6. Reports: dissemination of reports about project results and lessons learned.

9.3 Social Media

1. Website: *(mention correct address)*
2. Facebook: Facebook *(mention address)*
3. You Tube platform for videos. *(mention)*
4. Twitter: *(Name the handle)*

TABLE 5: Communication plan *(Prepare a concrete plan using example below)*

WHO <i>Who do we need to communicate with?</i>	WHAT <i>Why do we want to communicate with them?</i>	WHY? <i>What do we want to communicate with them about?</i>	STRATEGY <i>Channel of communication</i>	FREQUENCY <i>How many times will it come out/appear?</i>	RESPONSIBLE <i>Responsible Person</i>	VERIFICATION <i>Means of Verification</i>
			•		•	•

10.0 ESTIMATED BUDGET, TIME-FRAME AND SUCCESS CRITERIA OF THE STRATEGY *(include a budget to help execute the tasks and responsibilities of the CKM)*

The budget for implementation of this strategy considers the total pre-budget of **USD 273,000 indicated in the programme design document within the M&E component**. However, to ensure successful implementation of activities and sustainability of the knowledge management and communications function, this strategy's implementation will annually draw resources from the aforementioned funds for knowledge management and communications. As much as possible, activities related to M&E and CKM such as stakeholder workshops will be planned simultaneously whenever possible in order to minimize cost.

11.0 MONITORING AND EVALUATION

As part of the M&E unit, the CKM officer will be reporting to the M&E Officer and will work closely with M&E to ensure synergies between the two components. Key synergies will be the include: i) KM products build on solid M&E evidence on success or failure of interventions; ii) KM will be key to spread the findings of M&E, and also complements M&E by providing more in-depth, qualitative analysis, as well as stories from the field; iii) when KM officer conducts field visits to collect stories, he/she will also make use of the field trips to validate results data received from service providers, thereby contributing to the validation of M&E data.

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 9: Integrated Project Risk Matrix (IPRM)

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

Overall Summary

Risk Category / Subcategory	Inherent risk	Residual risk
Country Context	Moderate	Low
<i>Political Commitment</i>	<i>Moderate</i>	<i>Moderate</i>
<i>Governance</i>	<i>Moderate</i>	<i>Low</i>
<i>Macroeconomic</i>	<i>Moderate</i>	<i>Low</i>
<i>Fragility and Security</i>	<i>Moderate</i>	<i>Low</i>
Sector Strategies and Policies	Substantial	Moderate
<i>Policy alignment</i>	<i>Substantial</i>	<i>Moderate</i>
<i>Policy Development and Implementation</i>	<i>Substantial</i>	<i>Moderate</i>
Environment and Climate Context	Moderate	Moderate
<i>Project vulnerability to environmental conditions</i>	<i>Moderate</i>	<i>Low</i>
<i>Project vulnerability to climate change impacts</i>	<i>Moderate</i>	<i>Moderate</i>
Project Scope	Substantial	Moderate
<i>Project Relevance</i>	<i>Substantial</i>	<i>Moderate</i>
<i>Technical Soundness</i>	<i>Substantial</i>	<i>Moderate</i>
Institutional Capacity for Implementation and Sustainability	Substantial	Moderate
<i>Implementation Arrangements</i>	<i>Substantial</i>	<i>Moderate</i>
<i>Monitoring and Evaluation Arrangements</i>	<i>Substantial</i>	<i>Moderate</i>
Financial Management	High	Substantial
<i>Organization and Staffing</i>	<i>Substantial</i>	<i>Moderate</i>
<i>Budgeting</i>	<i>Substantial</i>	<i>Moderate</i>
<i>Funds Flow/Disbursement Arrangements</i>	<i>High</i>	<i>Substantial</i>
<i>Internal Controls</i>	<i>High</i>	<i>Substantial</i>
<i>Accounting and financial reporting</i>	<i>High</i>	<i>Substantial</i>
<i>External Audit</i>	<i>Substantial</i>	<i>Moderate</i>
Project Procurement	Moderate	Moderate
<i>Legal and Regulatory Framework</i>	<i>Moderate</i>	<i>Moderate</i>
<i>Accountability and Transparency</i>	<i>Moderate</i>	<i>Moderate</i>
<i>Capability in Public Procurement</i>	<i>Moderate</i>	<i>Low</i>
<i>Public Procurement Processes</i>	<i>Low</i>	<i>Low</i>
Environment, Social and Climate Impact	Moderate	Low
<i>Biodiversity Conservation</i>	<i>Moderate</i>	<i>Low</i>
<i>Resource Efficiency and Pollution Prevention</i>	<i>Moderate</i>	<i>Low</i>
<i>Cultural Heritage</i>	<i>Low</i>	<i>Low</i>
<i>Indigenous People</i>		<i>No risk envisaged</i>

Risk Category / Subcategory	Inherent risk	Residual risk
<i>Labour and Working Conditions</i>	<i>Low</i>	<i>Low</i>
<i>Community Health and Safety</i>	<i>Low</i>	<i>Low</i>
<i>Physical and Economic Resettlement</i>	<i>Low</i>	<i>Low</i>
<i>Greenhouse Gas Emissions</i>	<i>Moderate</i>	<i>Low</i>
<i>Vulnerability of target populations and ecosystems to climate variability and hazards</i>	<i>Moderate</i>	<i>Low</i>
Stakeholders	Moderate	Low
<i>Stakeholder Engagement/Coordination</i>	<i>Moderate</i>	<i>Low</i>
<i>Stakeholder Grievances</i>	<i>Moderate</i>	<i>Low</i>
Overall	Substantial	Moderate

Country Context	Moderate	Low
Political Commitment	Moderate	Moderate
<p>Risk:</p> <p>While political risks are low, it is to be recalled that Tanzania will hold its general elections (presidential, parliamentary and council) in October 2020. It is widely expected that the long-standing ruling party, the Chama Cha Mapinduzi, will be re-elected, under the leadership of the president, John Magufuli. The current administration's ambitious development agenda is expected to continue with increasing focus on implementing and delivering the Tanzania National Vision 2025.</p> <p>GoT has adopted a more robust and cautious approach in negotiations regarding external debt, with focus on investments in hard infrastructures to the detriment of 'soft' investments for building human and social capital to make the infrastructures work for the poor. There are risks of delays in signing of financing agreements or canceling of Programmes, as it happened in the past with the Dryland Development Programme and Agriculture Sector Development Programme II.</p>	Moderate	Moderate
<p>Mitigations:</p> <p>In order to mitigate the risk of the AFDP Financing Agreement not being signed, the relevant counterpart government officials, led by the Prime Minister's Office, have been actively engaged early and throughout the design and the formulation of the Programme Design Report. The IFAD team will continue to work closely with GoT during the next phases of the programme design, to ensure GoT ownership and alignment with IFAD's policies.</p>		
Governance	Moderate	Low

<p>Risk:</p> <p>Transparency International assigned a corruption perception index (CPI) score of 37 to Tanzania, thus falling within the “medium” bracket. There is only a single level system to handle procurement complaints. In fact, although an independent procurement appeal authority known as the “Public Procurement Appeals Authority” (“PPAA”) exists at national level, there is no appeals review panel at the level of the implementing agency. The Internal Auditor General undertakes a compliance audit on an annual basis. However, not all Procuring Entities are audited.</p>	Moderate	Low
<p>Mitigations:</p> <p>IFAD prior review thresholds will take into account the CPI score for Tanzania. Additionally, all procurement entities, as well as bidders, suppliers, contractors, consultants and service providers, will be requested to observe the highest standard of ethics during the procurement and execution of contracts financed under IFAD funded Projects, in accordance with paragraph 69 of the Procurement Guidelines. The Revised IFAD Policy on Preventing Fraud and Corruption in its Activities and Operations shall apply to all partners, vendors and third parties, in addition to the relevant national anticorruption and fraud laws.</p>		
<p>Macroeconomic</p>	Moderate	Low
<p>Risk:</p> <p>Tanzania is one of the stronger economic performers in Sub-Saharan Africa, with a sustained average 6.5 percent growth of GDP over the past ten years. Real GDP growth was estimated at Programme 6.4 percent in 2020 and 6.6 percent in 2021, before the outbreak of COVID-19 global pandemic. It is foreseen that real GDP growth will decline by just over half - from 5.8 percent in 2019 to 2.5 percent - but it is also expected to rebound significantly to 5.5 per cent in 2021, which is a reflection of the country’s strong economic performance. Public debt is currently sustainable, with all debt burden indicators being below the required thresholds.</p>	Moderate	Low
<p>Mitigations:</p> <p>GoT has reiterated its commitment to macroeconomic policies, aimed at maintaining public debt at a sustainable level, containing inflation within the target range, and preserving external stability. The GoT has taken several fiscal and monetary measures to mitigate the COVID-19 outbreak, , This notwithstanding, given the country’s favorable macroeconomic conditions, there is scope for the GoT to take more targeted measures to mitigate the negative effects of the pandemic (e.g. disruptions in supply chains).</p>		
<p>Fragility and Security</p>	Moderate	Low

<p>Risk:</p> <p>The political environment remains stable, thus, political and governance risks are generally low. However, the upcoming general elections scheduled for October 2020, raises the risk of opposition-led protests, but these are not expected to jeopardize stability. Tanzania is ranked as high risk on the INFORM COVID-19 Risks Index. The COVID-19 pandemic has undermined Tanzania's growth outlook and will increase poverty in 2020. The crisis is still evolving, and there are uncertainties depending on the pace and extent of the spread of COVID-19. The World Bank's simulations using the 2018 Household and Budget Survey suggest that an additional 500,000 Tanzanians could fall below the poverty line.</p>	Moderate	Low
<p>Mitigations:</p> <p>The AFDP makes provision for a sub-component 3.2 on "Contingency and Emergency Response and Recovery", given the risks of Covid-19 global pandemic and the reoccurrence of other unexpected shocks, including climate extremes and desert locust pest invasion. The programme is also aligned with the United Nations Country Team COVID-19 assessment and recovery plans. The Programme could also leverage IFAD's Rural Poor Stimulus Facility, wherein Tanzania's country allocation is US\$ 882,920 as at 20 August 2020. The country is also eligible to apply for the UN COVID-19 Response and Recovery Fund, and other funding mechanisms available in Tanzania.</p>		
<p>Sector Strategies and Policies</p>	Substantial	Moderate
<p>Policy alignment</p>	Substantial	Moderate
<p>Risk:</p> <p>Despite agriculture being a key driver of growth and transformation, Tanzania's public agriculture expenditure is 5.9 percent i.e. below the 10 percent target of the Comprehensive Africa Agriculture Development Program (CAADP)/ Malabo Declaration. With an average score of 5.08 against a benchmark of 6.66 out of 10 Tanzania is still not on track to meet the Malabo commitments targets by 2025 . Government prioritization of agriculture has not been fully matched with increased investment and financing of the ASDP II.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>AFDP is fully aligned with ASDP II and in fact it is designed to provide support to two of its priority areas and address key sector challenges in the seeds, fisheries and aquaculture value chains. To mitigate this risk IFAD country team will continue to support Government efforts to mobilize co-financing from other development partners. These efforts will be geared towards reducing overall cost of finance of the Programme to the Government.</p>		
<p>Policy Development and Implementation</p>	Substantial	Moderate

<p>Risk:</p> <p>ASDP II funding (estimated at USD 6.2 billion for 5-years) has not materialized. AFDP will be the first donor-supported programme to contribute to ASDPII. Given the serious challenges in funding ASDP II, there is a high risk that the Programme will be implemented in a constrained enabling environment due to the lack of resources to fund ASDP II cross-cutting issues and enablers, including extension services, infrastructures for value chain development, youth entrepreneurship, institutional reforms, monitoring and evaluation, etc.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>AFDP will be a stand-alone programme under the umbrella of ASDPII. This will allow focused support to two Government priorities while ensuring better alignment with IFAD's mandate, thematic priorities, and targeting policy. IFAD country team will continue to support Government's efforts to mobilize additional financing from internal resources and other development partners.</p>		
Environment and Climate Context	Moderate	Moderate
<i>Project vulnerability to environmental conditions</i>	<i>Moderate</i>	<i>Low</i>
<p>Risk:</p> <p>The Programme is confirmed as SECAP Category A. Most of AFDP proposed interventions will have some significant impacts that can be readily mitigated or remedied and therefore fall into Category B. However, the deep sea fisheries interventions and associated processing activities will trigger an overall Category A status of the Programme.</p>	Moderate	Low
<p>Mitigations:</p> <p>An Environmental and Social Management Framework (ESMF) has been prepared and disclosed 120 days before the IFAD Executive Board Session of December 2020. The Programme will also conduct Environmental and Social Impact Assessment (ESIA) studies and associated Mitigation and Management Plan will be prepared to facilitate the implementation of sustainable fishing operations.</p>		
<i>Project vulnerability to climate change impacts</i>	<i>Moderate</i>	<i>Moderate</i>
<p>Risk:</p> <p>The Programme is expected to be moderately sensitive to climate risks and thus requires integration of climate adaptation and mitigation measures into the enhanced production, distribution and utilisation of quality seeds as well as fisheries and aquaculture development. Tanzania is vulnerable to increased climate variability and climate change over most parts of the country. Increasing temperature is being observed, notably over highland areas while late rainfall onset and early cessation, decreasing rainfall amount and seasonal shift in rainfall patterns are becoming more common nationwide.</p>	Moderate	Moderate

<p>Mitigations:</p> <p>Climate financing represents 24% (USD 13.9 million) of the IFAD financing, which is earmarked for climate adaptation interventions. In order to mitigate and adapt to uncertainties associated with climate variability and change (drought and floods), the AFDP will contribute to the development of appropriate locally-adapted seeds which are more resilient to climate change, pests and diseases. The programme will promote environmental friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers) and storage. In particular, the Programme will support investments in stock assessments, selective fishing gears and methods to avoid catching non-targeted species and destructive fishing practices and illegal mangrove cutting. Aquaculture will be based on locally adapted species of tilapia and catfish that are able to withstand large variation in environmental and climatic conditions.</p>		
<p>Project Scope</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Project Relevance</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>The main risk under Component 1 is that the significant investments in production infrastructures (long line fishing vessels, fish processing plants, irrigation and laboratory facilities) under Government public institutions, particularly ASA and TAFICO, may not be economically and socially viable without development and implementation of sound business and marketing strategies and capacity building at all levels. Based on previous performance and the challenges of implementing reforms in public institutions, this is a substantial to high risk.</p> <p>4P business models. Tanzania ranks 141 out of 190 economies according to the World Bank's 'Ease of Doing Business' as the private sector still finds the business environment unpredictable . Public investments in areas open to the private sector may further undermine private sector development in seeds and fish value chains. Furthermore, the some line ministries are not fully conversant with the PPP modalities. There are also mixed views as to what should be the roles and responsibilities of government, private sector and farmers' organisations and cooperatives in the development of the seed and fisheries sectors.</p> <p>Access to finance. The risks include: (i) lack of interest and engagement of the financial sector for the targeted sectors (seeds and fisheries); (ii) high expectations by the target groups for grants by the Programme; and (iii) reluctance of the target groups to access finance from financial institutions.</p>	<p>Substantial</p>	<p>Moderate</p>

<p>Mitigations:</p> <p>All the productive investments made in infrastructures and equipment will be supported by business plans, accompanied by technical assistance to refine and implement inclusive business models and develop 4P joint ventures. GoT has committed to undertaking the required prefeasibility and feasibility studies for the development of 4P joint ventures in the seed and fisheries sectors. Technical Assistance will be provided to support GoT in preparing concept notes and prefeasibility studies for 4P joint ventures, and for scouting for partners and structuring financing arrangements.</p> <p>Access to finance: The risks will be mitigated by: (i) leveraging TADB SCGS and other financial instruments to raise appetite of the financial sector; (ii) Technical assistance to TADB and partner financial institutions specific to targeted value chains, that will incentivize lending to programme beneficiaries and value chains; (iii) linkage of TADB with IFAD NSO private window to raise financial resources specifically targeting targeted value chains; and (iv) specific products will be designed for women and youth coupled with financial literacy training to enhance understanding of and trust in the financial services on offer.</p>		
<p>Technical Soundness</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>While the Programme has an explicit inclusive food system and value chain focus, there are risks that limited capacities may impact on the implementation of the innovative aspects of the programme, such as the 4Ps joint venture for deep sea fishing.</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Mitigations:</p> <p>The programme will finance technical assistance (TA) in form of 4P advisors/facilitators to support TAFICO and ZAFICO in preparation of 4P concept note and strengthening capacities for negotiating and implementing 4P business models.</p>		
<p>Institutional Capacity for Implementation and Sustainability</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Implementation Arrangements</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>There are limited skills in gender and social inclusion, value chain and agribusiness, nutrition and postharvest management in the implementing ministries (Agriculture and Livestock and Fisheries) as well as in the implementing organisations to ensure that the Programme is effectively managed and implemented. The districts have limited financial, material and human resources and personnel capacity to undertake their mandates with respect to major areas of this programme (extension services, nutrition, private sector partnership, infrastructure development, community service).</p>	<p>Substantial</p>	<p>Moderate</p>

<p>Mitigations:</p> <p>A Programme Coordination Unit (PCU) will be established and staff recruitment will be done via a competitive process to attract such expertise. The implementation of the Programme will be structured around performance-based contracts. Service providers will be contracted through competitive government procedures and based on renewable performance based service contracts to provide advisory services. As part of the support delivered, service providers will ensure that adequate capacity is built among recipients of their services at various levels including LGAs to guarantee their exit strategy and overall sustainability.</p>		
<p>Monitoring and Evaluation Arrangements</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>M&E systems for ASDP II are not functional and fully robust to provide credible information on IFAD core indicators for the different levels of results (output, outcome and impact) as well as programme specific indicators.</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Mitigations:</p> <p>The programme logframe include both IFAD and ASDP core indicators for the different levels of results (output, outcome and impact) as well as programme specific indicators. The PMU includes a senior staff responsible for M&E who will develop and put in place robust M&E systems to align with IFAD's Operational Results Management System (ORMS).</p>		
<p>Financial Management</p>	<p>High</p>	<p>Substantial</p>
<p>Organization and Staffing</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>Inadequate staff capabilities, skills and experience in project accounting, donor funds management and on IFAD procedures at PCU.</p> <p>PCU will have Programme's dedicated finance team, while each implementing institutions will designate a Programme accountant within its pool of staff who will handle processing of the Programme's financial transactions and financial reporting to the PCU. The institutions do not have much experience with IFAD Programmes, which may impact on quality of financial reports.</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Mitigations:</p> <p>There will competitive recruitment of the finance staff to ensure the staff have the right skills and knowledge. There will be orientation and capacity building training for all the PCU finance team and all the implementing institutions, which will be carried out by IFAD's financial management division (FMD). The objective of the orientation training will be to orient the finance teams with the expected financial management and reporting to IFAD.</p>		
<p>Budgeting</p>	<p>Substantial</p>	<p>Moderate</p>

<p>Risk:</p> <p>Late inclusion of the AWPB into the national approval process given the loan agreement for the Programme is expected to be signed in January 2021 with an effectiveness date of March 2021, which will be in the course of financial year 2020/21. Over expenditure/ under expenditure on programme activities not properly tracked. The loan agreement for the Programme is expected to be signed in January 2021 with an effectiveness date of March 2021, which will be in the course of financial year 2020/21.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>The Government will be required to ensure authorization to incur expenditure/ supplementary budget provision for the Programme for FY 2020/21 is provided immediately after signing of the loan so as to enhance transfers of funds and payments for the initial activities in FY 2020/21. The project accounting software will include the budget module to track budget utilization. This to be installed right at project start. Monthly monitoring reports will be prepared regularly to provide opportunity for management oversight.</p> <p>Clear budget guidelines and procedures to be detailed in the PIM to assist the preparation of budgets.</p>		
<p>Funds Flow/Disbursement Arrangements</p>	High	Substantial
<p>Risk:</p> <p>The new regulatory framework in the country introduced recently reveals a longer disbursement timelines from the Ministry of Finance for all transfers from the Bank of Tanzania and foreseen will affect disbursements timelines to Programme accounts .</p>	High	Substantial
<p>Mitigations:</p> <p>Mitigations: To mitigate this risk, the PCU will be required to judiciously monitor cash flow requirements and process any disbursements requests early on time considering the longer turnaround time. The project will adhere to the liquidity mitigation measures incorporated within IFAD disbursement guidelines relating to submission timelines and thresholds for withdrawal applications. To a great extent use the direct payment method for payments above USD 100,000 as provided in IFAD guidelines will be opted where the criteria is met.</p>		
<p>Internal Controls</p>	High	Substantial
<p>Risk:</p> <p>Lack of adequate delegation of authority within the Finance unit due to limited staff numbers. Failure to justify programme expenditures in implementing districts and provinces, leading to delayed replenishment of the designated account and potential ineligible expenditures.</p>	High	Substantial

<p>Mitigations:</p> <p>The FM manual will detail controls and procedures to be followed in using programme funds. The PCU will perform quarterly reimbursements to implementing agencies to ensure timely replenishment before replenishment to their accounts. Internal Audits will be carried out in line with risks based audit guidelines so as to focus on areas of high risks. The internal auditors will be required to carry out the audit of the Programme at least twice a year.</p>		
<p>Accounting and financial reporting</p>	High	Substantial
<p>Risk:</p> <p>The Government is in the process of developing a new accounting system called “mfumo wa malipo serikalini” to replace the old system, which had various inefficiencies. The new system is still in design and testing period and may not incorporate required parameters for IFAD accounting and reporting. Thus the use of the government system poses the following risks. Lack of timely accounting data and reports nadequate record keeping of accounting records. Failure to properly track use of loan proceeds to disbursed to implementers. ailure to produce IFAD –specific reports</p>	High	Substantial
<p>Mitigations:</p> <p>To mitigate this risk, an off-shelf accounting system will be acquired. PIM to detail reporting and monitoring requirements and rules including on fund disbursement and report requirements to the participating institutions. The PCU will be responsible for coordination and oversight of all financial management processes of the Programme and so will carry out capacity building for all implementing partners to meet IFAD financing guidelines</p>		
<p>External Audit</p>	Substantial	Moderate
<p>Risk:</p> <p>The key risk is the potential delay in performance of independent and competent audit of project financial statements leading to possible suspension due to compliance breach. Risk that the audit report will not meet the acceptable standards of IFAD.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>Office of the National Auditor General, the Supreme Audit Institution of Tanzania, has confirmed adequate capacity to undertake the project annual external audits timely, in line with IFAD guidelines. The project will proactively engage this Office during the financial year to plan for timely execution of year–end audits.</p> <p>The standard TOR as contained in the IFAD handbook on Financial Reporting and Auditing will be shared with the project as a sample upon adequate TOR will be developed by the project for the project audit.</p>		
<p>Project Procurement</p>	Moderate	Moderate
<p>Legal and Regulatory Framework</p>	Moderate	Moderate

<p>Risk:</p> <ul style="list-style-type: none"> - The procurement law is fragmented with many amendments and consequential amendments (circulars) which makes application of the law difficult. - Procurement monitoring received a “D” rating from PEFA, due to the incomplete nature of the procurement information published by the Public Procurement Regulatory Authority (PPRA). Specifically, it was noted that while procurement entities share their annual procurement plans, they also procure goods and services outside of said plans. Additionally, only about 50% of the procuring entities submit their general procurement notices and contract award information. - Procurement methods received a “D” rating from PEFA, due to the lack of available consolidated data concerning the use of non-competitive procurement methods and/or direct purchases for urgent procurements. This leaves a loophole that may be exploited by procuring entities to avoid competitive procurement methods. - Concerning public access to procurement information, the PPRA publishes contract awards and bidding opportunities for only 50% of MDAs (Ministries, Departments & Agencies). 	Moderate	Moderate
<p>Mitigations:</p> <ul style="list-style-type: none"> - A user manual should be developed to be updated whenever there is an amendment of the Law or a circular to PEs. - AFDP will submit the annual procurement plan after receiving IFAD’s No-Objection. The use of IFAD’s format for the contract register and its regular update will facilitate the submission of complete contract award information to the PPRA. - All procurements via direct contracting and sole source selection will be subject to IFAD’s prior review and No-Objection, as per Section 23 of the IFAD Project Procurement Guidelines. - MDAs (these include government agencies that will partner with AFDP) to submit progressive procurement reports related to AFDP to the Implementing Agency for consolidation and submission to PPRA. This would solve the issue of publication of contract awards. The implementing agency should use its own website to publish bidding documents. 		
Accountability and Transparency	Moderate	Moderate
<p>Risk:</p> <ul style="list-style-type: none"> - Transparency International assigned a corruption perception index (CPI) score of 37 to Tanzania, thus falling within the “medium” bracket. - There is only a single level system to handle procurement complaints. In fact, although an independent procurement appeal authority known as the “Public Procurement Appeals Authority” (“PPAA”) exists at national level, there is no appeals review panel at the level of the implementing agency. - The Internal Auditor General undertakes a compliance audit on an annual basis. However, not all Procuring Entities are audited. PPRA also undertakes annual audits, but on a sample basis. There is a risk that AFDP might not be audited. 	Moderate	Moderate

<p>Mitigations:</p> <ul style="list-style-type: none"> - IFAD prior review thresholds will take into account the CPI score for Tanzania. Additionally, all procurement entities, as well as bidders, suppliers, contractors, consultants and service providers, shall observe the highest standard of ethics during the procurement and execution of contracts financed under IFAD funded Projects, in accordance with paragraph 69 of the Procurement Guidelines. The Revised IFAD Policy on Preventing Fraud and Corruption in its Activities and Operations shall apply to all projects, vendors and third parties, in addition to the relevant national anticorruption and fraud laws. - The Procuring Entity should establish a review panel at the level of the implementing agency, which will provide the first level of review for procurement complaints before eventually submitting them to the PPAA. - The appointed external auditor to undertake an annual 'Compliance Audit'. 		
<p>Capability in Public Procurement</p>	<p>Moderate</p>	<p>Low</p>
<p>Risk:</p> <p>According to the proposed implementation arrangement, the PCU will be embedded within the existing structures of the PMO's office, implying that there will not be a separate procurement management unit (PMU) for AFDP, but rather all procurements will be undertaken by the PMOs PMU. With such an arrangement, there is a risk that there could be delays, and that IFAD procedures could not be adhered to. Since AFDP will be using existing PMO and partner institution structures, the PMU staff may not necessarily have experience in donor-funded public procurement. The same applies to the PMO Tender Board (TB) staff.</p>	<p>Moderate</p>	<p>Low</p>
<p>Mitigations:</p> <p>A focal person will be appointed within the PMO's PMU, trained in IFAD guidelines, and mandated with the responsibility of ensuring adherence to IFAD procedures and of following up on procurement processes. TB and PMU staff to be trained in IFAD procurement guidelines.</p>		
<p>Public Procurement Processes</p>	<p>Low</p>	<p>Low</p>

<p>Risk:</p> <ul style="list-style-type: none"> - According to the existing Public Procurement Act, procurement methods are consistent with IFAD guidelines, except the provision to use non-competitive methods where no consolidated data is provided related to the use of non- competitive procurement methods and/or direct purchase for urgent procurements. This leaves a loophole that may be exploited by PEs to avoid competitive methods of procurement. - AFDP will have several partners who will be required to prepare separate procurement plans. This may lead to delays. - Procurement plans sometimes do not use effective formats with planned and actual rows across 3 different categories. - Not all procuring entities publicly advertise their contract awards. - Most management meetings are not held and appropriate records are not kept as per contract requirements. Consequently, the contract monitoring system/framework should be strengthened. - The process for resolution of final payment and contract closure is not always clear. - Contracts are not always supervised by independent engineers or a named programme manager. 	Low	Low
<p>Mitigations:</p> <ul style="list-style-type: none"> - All procurements via direct contracting and sole source selection will be subject to IFAD's prior review and No-Objection, as per Section 23 of the IFAD Project Procurement Guidelines. - The coordination unit to organize AWPB preparation workshops with partners. - AFDP will employ IFAD's procurement plan template, so as to ensure that all necessary procurement information are captured. - MDAs (these include government Agencies that will partner with AFDP) to submit progressive procurement reports related to AFDP to the Implementing Agency for consolidation and submission to PPRA. This would solve the issue of publication of contract awards. The use of E-procurement (still in the trial stage) will also facilitate the public advertisement of contract awards. - The appointed contract manager to schedule meetings with the user department and the PMU to discuss progress of contract execution. - Procuring entities/user departments to timely certify the certificates for contractual works and inappropriate contract close out. - Depending on the complexity of the works, an independent supervising firm will be recruited or if works are not complex, PCU staff can supervise contract execution. - In order to improve contract management and monitoring, contract data will be captured in IFAD's CM tool on ICP. - In an effort to enhance transparency of the procurement process, posting of notices and awards (especially for ICB) will be done through the UNDB/IFAD website. 		
Environment, Social and Climate Impact	Moderate	Low
Biodiversity Conservation	Moderate	Low

<p>Risk:</p> <p>The main risk to biodiversity stems from the potential for overfishing in the EEZ, and the risks of bycatch comprising endangered species such as sea turtles, cetaceans (such as dolphins), and sirenia (dugongs).</p> <p>The risk to biodiversity due to fishing operations is therefore considered to be high.</p> <p>Risks to biodiversity from aquaculture, mariculture and crop seed production are considered to be low and can be mitigated.</p>	Moderate	Low
<p>Mitigations:</p> <p>These risks will be mitigated through the Programme's support to the review and implementation of the Tuna Fisheries Management Plan (TFMP) in partnerships with SWIOFISH, and The Nature Conservancy in the preparation and development of the Marine Spatial Plan.</p> <p>The TFMP will include specific measures to ensure fishing is carried out in a sustainable manner. In particular, the TFMP will make provisions for the following actions that reduce the risk of overfishing: (i) assessment and monitoring of tuna catches on a regular basis to ensure the stocks remain within sustainable levels. The TMFP ensures that tuna fisheries are managed based on sound scientific data and knowledge; (ii) an effective system of controlling fishing capacity through licensing of fishing vessels and appropriate gears, also to avoid by-catch; (iii) mechanisms for monitoring, control, surveillance and enforcement of fishing regulations to eliminate Illegal, unregulated and unreported (IUU) activities, including on-board observer programs; (iv) mechanisms for sustainable financing of the Tuna management plan through license fee, levy on catches, trust fund etc.; (v) actions for post-harvest management to reduce losses and value addition of fisheries products; (vi) capacity building of local fishery management institutions; and (vii) building synergies and partnerships with regional and international programmes and institutions., such as the Indian Ocean Tuna Commission (IOTC).</p>		
<p>Resource Efficiency and Pollution Prevention</p>	Moderate	Low
<p>Risk:</p> <p>Overall, the risks to resource efficiency and pollution prevention is considered to be medium. Crop seed development will require fields to be irrigated, while aqua-parks will require water for the fish ponds. Water will be sourced from surface water sources or groundwater. These activities will take place mainly in the drier parts of the country, which are somewhat water stressed. There will be some air emissions from agro processing facilities, and dust (from construction activities and harvesting of seed) but these are not expected to be significant emissions.</p>	Moderate	Low
<p>Mitigations:</p> <p>The technologies to be adopted will be geared towards the efficient use of water, involving water recycling, reuse and/or recovery. Abstraction permits will be required for drawing water from any source, which will also limit the quantity of water that can be used. Aquaculture may result in contamination of water bodies, but effluents can be treated prior to discharge to open water bodies.</p>		
<p>Cultural Heritage</p>	Low	Low

<p>Risk:</p> <p>There are several historic, cultural and religious sites, in Zanzibar, particularly Unguja and Pemba Islands. The locations of most of these sites are known, and therefore any disturbance to the sites will be avoided. The risk to cultural heritage is therefore considered to be low.</p>	Low	Low
<p>Mitigations:</p> <p>Nonetheless, the environmental and social analysis to be carried out for any interventions will include an assessment of physical cultural resources and cultural heritage, and a chance find procedure will be prepared.</p>		
<p>Indigenous People</p>		No risk envisaged
<p>There are no indigenous people in the Programme area.</p>		
<p>Labour and Working Conditions</p>	Low	Low
<p>Risk:</p> <p>The Programme will not condone forced or child labour, sexual exploitation and abuse, discriminatory and unsafe/unhealthy working conditions for people employed to work on any Programme interventions.</p>	Low	Low
<p>Mitigations:</p> <p>Labour and working conditions will be closely monitored by the PCU's Environmental and Social Management Specialist, and any non-compliances reported and dealt with immediately.</p>		
<p>Community Health and Safety</p>	Low	Low
<p>Risk:</p> <p>Programme outcomes include improved nutrition status, and promoting alternative livelihoods thereby increasing household income. This has positive implications on household health. This notwithstanding, a few Programme activities may have some risks to the communities. For example risks to the public during construction activities, including SEA.</p>	Low	Low
<p>Mitigations:</p> <p>Mitigation measures can be easily applied to avoid such risks. While gender-based violence and SEA are risks, the Programme also aims to empower women and youth, thus mitigating those risks. Therefore the risk to community health and safety is considered to be low.</p>		
<p>Physical and Economic Resettlement</p>	Low	Low
<p>Risk:</p> <p>Crop seed development and aquaculture will not affect land rights since these interventions involve agricultural technologies, production and value chain development on land belonging to the government or national institutions, or in the case of the aquaculture ponds, will be developed on request from farmers on their own land.</p>	Low	Low

<p>Mitigations:</p> <p>No physical or economic resettlement is anticipated.</p>		
<p>Greenhouse Gas Emissions</p>	Moderate	Low
<p>Risk:</p> <p>The fishing vessels will use diesel fuel, which will contribute to some level of GHG. However, other proposed interventions will not significantly increase GHG emissions. In addition, seaweed farming has potential for carbon sequestration.</p>	Moderate	Low
<p>Mitigations:</p> <p>The Programme will promote the use of renewable energy technologies in value chain development, wherever possible. For example, through the use of solar dryers for seaweed and “dagaa” drying, and solar pumps for irrigation.</p>		
<p>Vulnerability of target populations and ecosystems to climate variability and hazards</p>	Moderate	Low
<p>Risk:</p> <p>The programme is expected to be moderately sensitive to climate risks and thus requires integration of climate adaptation and mitigation issues into the enhanced production, distribution and utilisation of quality seeds as well as fisheries and aquaculture development. Tanzania is vulnerable to increased climate variability and climate change over most parts of the country. Increasing temperature were observed notably over highland areas while late rainfall onset and early cessation, decreasing rainfall amount and seasonal shift in rainfall patterns are becoming more common nationwide.</p>	Moderate	Low
<p>Mitigations:</p> <p>In order to mitigate and adapt to uncertainties associated with climate variability and change (drought and floods), the AFDP will contribute to the development of appropriate locally-adapted seeds, which are more resilient to climate change, pests and diseases. The Programme will also promote environmental friendly adaptive techniques and technologies in fish catching, processing (e.g. solar dryers) and storage. Infrastructure associated with fisheries and crop seed production and value chains will be designed so as to be climate resilient, taking into consideration factors such as siting, water availability, and renewable energy technologies.</p>		
<p>Stakeholders</p>	Moderate	Low
<p>Stakeholder Engagement/Coordination</p>	Moderate	Low
<p>Risk:</p> <p>Smallholder farmers and fishers and civil society organisations may show limited interest in contributing to Programme activities and their implementation.</p>	Moderate	Low

<p>Mitigations:</p> <p>The establishment of dialogue platforms with multi-stakeholder groups is part of the Programme's strategy for inclusion and participation. AFDP will develop stronger partnerships with farmer organizations and cooperatives, including emerging public-private-producer partnerships (e.g. Agriculture Non-state Actors Forum and Agricultural Council of Tanzania); Financial institutions such as TADB and partner commercial banks accessing the Smallholder Farmers Credit Guarantee Scheme under MIVARF); and Civil society (e.g. TASTA MVIWATA, East African Business Council, East Africa Grain Council, etc. Furthermore, different stakeholders' groups will participate in the elaboration of the Annual Workplan and budget (AWPB), the supervision missions and MTR as well as in the various M&E participatory processes.</p>		
<p>Stakeholder Grievances</p>	<p>Moderate</p>	<p>Low</p>
<p>Risk:</p> <p>Beneficiaries, particularly smallholder farmers and fishers may not be aware of their power and mechanisms to lodge complains and grievance and seek redress.</p>	<p>Moderate</p>	<p>Low</p>
<p>Mitigations:</p> <p>Grievance and redress mechanisms are presented in the ESMF and SECAP Notes. The programme will establish a digital platform for collecting beneficiary feedback and complaints, using social media (WhatsApp, Facebook and Twitter).</p>		

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 10: Exit Strategy

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

Annex 10: Programme Exit Strategy

1. AFDP design is fully owned by GoT and targeted institutions. Consistent with the ASDP II framework, the long-term sustainability of AFDP will be determined by the extent to which it delivers tangible results, and improving the responsiveness of key public institutions and service providers to respond to farmers' demand, together with supporting investments in key productive infrastructures. The programme would ensure sustainability of benefits and outcomes through support and capacity building of Government institutions to develop viable business plans that should demonstrate technical feasibility and financial viability.
2. The Programme addresses the core challenges of increasing supply and farmer access to quality crop and fish seeds, as well as effective production and postharvest handling innovations and equipment. Key elements of sustainability include: (i) better understanding of stakeholders' needs and markets; (ii) focusing equally on seed supply as well as demand and use; (iii) ensuring longer-term support to be able to produce sufficient quantities of early generation seed (breeder, foundation and registered), fingerlings and strengthening national capacity to access to deep sea for high value fish. Sustainable seed systems involving private sector, but also community levels QDS where efficient, strengthening the entire chain to respond to farmer and market needs. Main efforts need to put into the last segments of the chain bulking-up, agro-dealer and extension to get the right partnerships for effective improved seed into farmer use.
3. AFDP sustainability is further strengthened through its triple focus on (i) inclusive targeting mechanism to ensure and promote farmers and community participation in Programme activities and investments; (ii) establishing sustainable market linkages and promoting 4P business models to leverage financing, enhance market access resulting in sustainable market relationships; (iii) engaging SME participation in seed multiplication and marketing as well as aquaculture and fisheries; (iv) investments in strengthening the delivery capacity of the public sector actors in order to ensure viability of investments and (iv) and creating a number of long-term decent jobs for women and youth. Finally, the Programme aims to ensure viability of investments by disrupting old ways of doing business through technical assistance and SSTC.
4. AFDP sustainability is further strengthened through its triple focus on (i) inclusive targeting mechanism to ensure and promote farmers and community participation in Programme activities and investments; (ii) promoting 4P business models to leverage financing, promote risk sharing, enhance innovation and market access as well as increase the inclusion of smallholder farmers and their organizations in profitable seed and fish value chains; (iii) targeting and strengthening public institutions, focusing early on financial and economic viabilities of programme investments; and (iv) refining and repositioning their business plans and building their capacities to drive change around programme interventions and innovations. The programme would ensure sustainability of benefits and outcomes through support and capacity building of Government institutions to develop viable business plans that should demonstrate technical feasibility and financial viability.
5. Key elements to sustainability are the programme's focus to strengthening micro, small and medium enterprises and the alignment of financial instruments to stimulate investments in agriculture and rural areas. AFDP will contribute in bridging the gap between agricultural production and marketing, with a focus on business innovations benefiting women and youth along the value chain. In addition, the programme targets joint ventures with private sector through the 4P approach, and business relationships supported under the Programme have an inbuilt market-based sustainability logic. Under the 4P business model, linkages will be fostered and facilitated between producer groups and private sector investors and operators , resulting in sustainable market relationships.

6. All the productive investments made in infrastructures and equipment will be supported by business plans, accompanied by technical assistance to ensure proper management and maintenance. Private public policy dialogues platforms specific to seed and fisheries sectors will be established as a means of fostering collaboration among public and private sector actors and as a means of co-shaping favorable legislation and regulations. Some of these dialogue platforms are expected to last beyond the project's life.

7. Community involvement will be critical throughout AFDP. In particular, AFDP will work with coastal communities to make them more resilient to the effects of climate change and environmental degradation. In this regard, AFDP will work closely with artisanal fishers, BMUs and Fisheries Cooperatives in Tanzania Mainland and Zanzibar in the sustainable management of the coastal ecosystems on which their livelihoods depend. Local communities will be involved in implementing the proposed Tuna Fisheries Management Plan.

8. AFDP strongly builds on increased sustainability and resilience to climate change of farming and livelihood systems in target areas for medium and long-term benefits to be generated from value chain-relevant interventions, including in terms of strengthened economic/financial, institutional, social and environmental capital for future generations. Sustainable seed systems involving private sector, but also farmer organizations and community levels (where efficient - QDS), strengthening the entire chain to respond to farmer and market needs. Main efforts need to put into the last segments of the chain bulking-up, agro-dealer and extension to get the right partnerships for effective improved seed into farmer use.

9. AFDP will also develop stronger partnerships with farmer organizations and cooperatives, including emerging public-private-producer partnerships (e.g. Agriculture Non-state Actors Forum and Agricultural Council of Tanzania); Financial institutions such as TADB and partner Commercial banks accessing the Smallholder Farmers Credit Guarantee Scheme under MIVARF); and Civil society (e.g. TASTA MVIWATA, East African Business Council, East Africa Grain Council, etc.

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 11: Mainstreaming themes – Eligibility criteria checklist

Mission Dates: 31 Mays-26 June 2020

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Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

Mainstreaming themes – Eligibility criteria checklist

	<input type="checkbox"/> Gender transformational	<input type="checkbox"/> Youth sensitive	<input checked="" type="checkbox"/> Nutrition sensitive	<input checked="" type="checkbox"/> Climate finance
Situation analysis	<input type="checkbox"/> National gender policies, strategies and actors <input type="checkbox"/> Gender roles and exclusion/discrimination <input type="checkbox"/> Key livelihood problems and opportunities, by gender <input type="checkbox"/> Use (pro-WEAI) assessment for M&E baseline	<input type="checkbox"/> National youth policies, strategies and actors <input type="checkbox"/> Main youth groups <input type="checkbox"/> Challenges and opportunities by youth group	<input checked="" type="checkbox"/> National nutrition policies, strategies and actors <input checked="" type="checkbox"/> Key nutrition problems and underlying causes, by group <input checked="" type="checkbox"/> Nutritionally vulnerable beneficiaries, by group	
Theory of change	<input type="checkbox"/> Gender policy objectives (empowerment, voice, workload) <input type="checkbox"/> Gender transformative pathways <input type="checkbox"/> Policy engagement on GEWE	<input type="checkbox"/> Pathways to youth socioeconomic empowerment <input type="checkbox"/> Youth employment included in project objectives/activities	<input checked="" type="checkbox"/> Nutrition pathways <input checked="" type="checkbox"/> Causal linkage between problems, outcomes and impacts	
Logframe indicators	<input type="checkbox"/> Outreach disaggregated by gender <input type="checkbox"/> Women are > 40% of outreach beneficiaries <ul style="list-style-type: none"> • Pro-WEAI indicator 	<input type="checkbox"/> Outreach disaggregated by age	<input checked="" type="checkbox"/> Outreach disaggregated by gender <ul style="list-style-type: none"> • Further details to be confirmed 	
Human and financial resources	<input type="checkbox"/> Staff with gender TORs <input type="checkbox"/> Funds for gender activities <input type="checkbox"/> Funds for Pro-WEAI surveys in M&E budget	<input type="checkbox"/> Staff with youth TORs <input type="checkbox"/> Funds for youth activities	<input checked="" type="checkbox"/> Staff or partner with nutrition TORs <input checked="" type="checkbox"/> Funds for nutrition activities	IFAD Adaptation Finance \$13,844,000 IFAD Mitigation Finance \$0 Total IFAD Climate-focused Finance \$13,844,000

<p>ECG Remarks</p>	<p>Gender</p> <p>The project does not intend to be gender transformative. However, it is gender mainstreamed and has committed to invest in various interventions that will have positive gender outcomes. These include the application of the GALs methodology and other household approaches to address gender barriers and empower women; 50% representation of women, and interventions aimed at economically empowering women to participate meaningfully within the seed and fisheries value chains, while increasing their incomes and bettering their livelihoods.</p> <p>Nutrition</p> <p>The project is nutrition sensitive. The PDR identifies key nutritional challenges faced as well as vulnerable groups that are most affected. The project has committed to interventions that will enhance good nutritional outcomes within the project areas. These include: production of nutritious foods within the seed and fisheries value chain; promotion of household consumption of nutrient dense foods; supporting the processing and marketing of nutritious foods, and, empowering women to be meaningfully engaged on nutritional aspects of the project. The project has allocated a budget to finance nutrition related interventions.</p> <p>Youth</p> <p>The project does not intend to be youth sensitive. Nevertheless, the PDR and related documents provide information and propose interventions aimed at identifying and addressing some value chain engagement challenges faced by the youth within project sites, a youth outreach of 30%, and identification of activities along the value chains that youth will participate in. Capacity building and learning will be a key area of focus too. The project has allocated a budget to address youth related targets.</p> <p><input type="checkbox"/> No social inclusion themes</p>
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Investing in rural people

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex 12: SECAP Clearance Sheet

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

SECAP Clearance Sheet



TO: Donal Brown
Associate Vice President, PMD

FROM: Thomas Eriksson
Director OPR

DATE: 29 September 2020

SUBJECT: Adherence to SECAP requirements for Category A projects only.

Project Title: Agriculture and Fisheries Development Programme (AFDP)
Country: United Republic of Tanzania
Division: ESA
Country Programme Manager: Francesco Rispoli
Project Category: A
Executive Board:
Design Stage

1. The Environmental and Social Impact Assessment (or other relevant SECAP studies) has been completed and reviewed by the relevant national authority and IFAD	
2. The Free Prior and Informed Consent (FPIC) has been obtained by the borrower or grant recipient	
3. The FPIC Implementation Plan has been developed at the design stage and reviewed by the relevant national authorities and IFAD	
4. The ESIA (or other relevant SECAP studies) has been cleared/approved by the relevant National Authorities for disclosure on IFAD website	
5. The FPIC process has been completed or the FPIC Implementation Plan has been cleared/approved by the relevant National Authorities for disclosure	

<p>6.The ESIA and /or FPIC/FPIC Implementation Plan has been disclosed on IFAD website?</p> <p>Effective disclosure date on IFAD website:</p> <p>Notes</p>	
<p>7.The Resettlement Action Plan (RAP) has been completed and reviewed by IFAD and the relevant national authorities</p>	
<p>8. The review of the land acquisition and compensation process has been completed and reviewed by IFAD and the relevant national authorities</p>	
<p>9.The RAF has been cleared by National Authorities for disclosure on IFAD website</p> <p>Effective disclosure date on IFAD website:</p> <p>Notes</p>	



Investing in rural people

United Republic of Tanzania

Agriculture and Fisheries Development Programme (AFDP)

Project Design Report

Annex: ESMF Report post DRM

Mission Dates: 31 Mays-26 June 2020

Document Date: 29/09/2020

Project No. 2000001519

Report No. 5487-TZ

East and Southern Africa Division
Programme Management Department

GOVERNMENT OF TANZANIA

Prime Minister's Office (PMO)

**Agriculture and Fisheries Development Programme
(AFDP)**

**Environmental and Social Management Framework
(ESMF)**

DRAFT REPORT

July 2020

Contents

Executive Summary.....	ix
1 Introduction	1
1.1 Background to the Agriculture and Fisheries Development Programme (AFDP).....	1
1.2 Goal and Objectives of AFDP.....	2
1.3 Rationale and Objectives of this ESMF.....	2
1.4 Approach and Methodology used for the Preparation of the ESMF.....	3
1.5 Stakeholder Consultations	4
1.6 Disclosure of this ESMF	4
1.7 Limitations and Assumptions	5
1.8 Report Presentation	6
2 Description of the Agriculture and Fisheries Development Programme	7
2.1 Overview of the Programme Area Characteristics	7
2.2 Target Groups and Targeting Strategy	7
2.3 Programme Components	8
2.4 Institutional Arrangements and Responsibilities for Programme Implementation	11
3 Institutional, Policy and Legal Framework for Environmental Management in Tanzania	14
3.1 Policy, Legal and Institutional Framework.....	14
3.1.1 Tanzania Mainland	14
3.1.2 Zanzibar.....	17
3.2 International Conventions and Treaties	18
3.3 IFAD Safeguard Policies	20
3.4 Comparison of GoT and IFAD Policy Requirements	26
4 Lessons Learnt.....	31
4.1 Lessons from IFAD-Supported Projects	31
4.2 Lessons from other Development Partner Projects	32
5 Environmental and Social Overview.....	34
5.1 Administrative Structure	34
5.2 Physical Environment	34
5.2.1 Climate, Rainfall and Temperature.....	34
5.2.2 Landscapes.....	35
5.2.3 Water Resources	35
5.2.4 Soils.....	37
5.3 Biological Environment.....	37
5.3.1 Terrestrial Ecosystems.....	37
5.3.2 Coastal and Marine ecosystems.....	38
5.3.3 Tanzania’s Exclusive Economic Zone	38
5.3.4 Protected Areas	38
5.3.5 Fisheries	39
5.4 Socio-Economic Environment.....	41
5.4.1 Demographic Characteristics	41
5.4.2 Land Tenure.....	42
5.4.3 Land Use.....	42
5.4.4 Health Status of Project Communities.....	42
5.4.5 Education Status of Subproject Communities	43
5.4.6 Access to Services	43
5.4.7 Economic Activities in the Programme Area.....	43
5.4.8 Household Income in the Programme Area.....	44
5.4.9 Physical Cultural Resources.....	44
5.5 Gender.....	44
6 Stakeholder Consultations	46

6.1	Background and Rationale	46
6.2	Consultation Locations and Stakeholder Categories	47
6.3	Issues Discussed during Consultations	47
6.4	Summary of Outcomes of Stakeholder Consultations	47
6.5	Other Concerns	49
6.6	Priorities for AFDP Interventions.....	49
7	Potential Environmental, Social and Climate-Related Impacts of AFDP Interventions and their Mitigation.....	50
7.1	Benefits of AFDP.....	50
7.2	Potential Environmental, Social and Climate-Related Risks and Impacts from AFDP Interventions	52
7.3	Environmental, Social and Climate Management Plan	61
8	Climate Risk Assessment	74
8.1	Introduction	74
8.2	Trend and Climate Hazard Analysis	74
8.2.1	Changes in Temperature	75
8.2.2	Changes in precipitation	77
8.2.3	Coastal and Marine Ecosystems and Related Climate Change Impacts.....	80
8.3	Main Findings for Targeted Value Chains	81
8.3.1	Crop Seed Production	81
8.3.2	Aquaculture	81
8.3.3	Fisheries	82
8.3.4	Seaweed Farming.....	82
9	Environmental, Social and Climate Change Management for AFDP	83
9.1	Institutional Framework for Environmental Management in Tanzania Mainland	83
9.2	Institutional Framework for Environmental Management in Zanzibar	86
9.3	National EIA Procedures.....	87
9.3.1	EIA Procedure in Tanzania Mainland.....	87
9.3.2	EIA Procedure in Zanzibar	89
9.3.3	Permitting and Licensing Requirements for AFDP Activities.....	91
9.4	Environmental, Social and Climate Change Management Procedures for AFDP	92
9.4.1	Implementation and Coordination	92
9.4.2	Screening	92
9.4.3	Environmental, Social and Climate Safeguards Documentation	95
9.4.4	Disclosure of ESIA's and Project Briefs.....	101
9.4.5	Review and Approval of ESIA's, Project Briefs and IPMP	101
9.4.6	Gender Based Violence and Sexual Exploitation and Abuse.....	101
9.4.7	Grievance Redress Mechanisms	102
9.4.8	Monitoring	104
9.4.9	Quarterly and Annual Reviews.....	106
9.4.10	Reporting	106
9.4.11	Annual Monitoring Audits.....	107
9.5	Summary of Processes and Responsibilities	107
10	Capacity Building.....	109
10.1	Existing Capacity.....	109
10.2	Training Topics	109
10.3	Target Audience.....	110
10.4	Training Approach	110
10.5	Training Summary.....	110
11	ESMF Implementation Budget	112
12	Summary of Key Issues Arising and Recommendations.....	113
12.1	Project Implementation Arrangements	113
12.2	Project Categorisation	113

12.3	Climate Risk Analysis	113
12.4	Physical and Economic Displacement	113
12.5	Indigenous Peoples	114
12.6	Community Involvement in Subproject Implementation.....	114
12.7	Capacity Building.....	114
Annexes.....		115
Annex 1:	References.....	116
Annex 2:	List of Stakeholders Consulted.....	120
Annex 3:	Terms of Reference for the Environmental, Social and Climate Specialist for the PCU	124
Annex 4:	Screening and Categorisation of AFDP Interventions	126
Annex 5:	Guidelines for an Integrated Pest Management Plan	132
Annex 6:	Stakeholder Identification Matrix	146
Annex 7:	Study Team, Study Itinerary and ESMF Timelines.....	152

List of Tables

Table 2-1:	AFDP Target Areas	7
Table 2-2:	AFDP Components.....	8
Table 3-1:	Policy, Legislative and Institutional Framework for Environment, Climate and Social Inclusion in Tanzania Mainland	14
Table 3-2:	Policy, Legislative and Institutional Framework for Environment, Climate and Social Inclusion in Zanzibar.....	17
Table 3-3:	International and Regional Treaties and Conventions.....	18
Table 3-4:	Comparison of Government of Tanzanian and IFAD Requirements	26
Table 5-1:	Basin-wise Renewable Water Availability in Tanzania Mainland.....	36
Table 5-2:	Stock Status of Tuna and Tuna-like Fish found in the Tanzania EEZ.....	40
Table 6-1:	Categories and Number of Stakeholders Consulted.....	47
Table 6-2:	Summary of Stakeholder Consultations	48
Table 7-1:	AFDP Benefits.....	50
Table 7-2:	Typically Anticipated Risks and Adverse Impacts of AFDP Supported Activities	53
Table 7-3:	AFDP Environmental, Social and Climate Management Plan	62
Table 9-1:	Screening Categorisation for AFDP Interventions	93
Table 9-2:	Typical Performance Monitoring Indicators	104
Table 9-3:	Typical Results Monitoring Parameters.....	106
Table 9-4:	ESMF Procedures and Responsibilities.....	107
Table 10-1:	Summary of Proposed Trainings.....	110
Table 11-1:	ESMF Implementation Budget (USD)	112

List of Figures

Figure 3-1: Social Environmental and Climate Screening Flow Diagram.....	23
Figure 5-1: Drainage Basins.....	36
Figure 8-1: The average of maximum temperature during baseline period (1971–2000), present century (2011–2040), and the change in temperature during present under both RCP 8.5 (upper) and RCP 4.5 (lower).....	76
Figure 8-2: The average of maximum temperature during baseline period (1971–2000), mid- century (2041–2070), and the change in temperature during mid-century under both RCP 8.5 (upper) and RCP 4.5 (lower).....	76
Figure 8-3: The average of maximum temperature during baseline period (1971–2000), end century (2071–2100), and the change in temperature during end century under both RCP 8.5 (upper) and RCP 4.5 (lower).....	77
Figure 8-4: Precipitation in mm/day during baseline period (1971–2000), present century (2011–2040), and change in precipitation under both RCP8.5 (upper) and RCP 4.5 (lower).....	79
Figure 8-5: Precipitation in mm/day during baseline period (1971–2000), present century (2041–2070), and change in precipitation under both RCP8.5 (upper) and RCP 4.5 (lower).....	79
Figure 8-6: Precipitation in mm/day during base period (1971–2000), present century (2071–2100), and change in precipitation under both RCP8.5 (upper) and RCP 4.5	80
Figure 9-1: EIA Process in Tanzania Mainland	89
Figure 9-2: EIA Process in Zanzibar	91

Acronyms and Abbreviations

AEZ	Agro Ecological Zone
ASA	Agricultural Seed Agency
ADC	Aquaculture Development Centre
AFDP	Agriculture and Fisheries Development Programme
ASDP-II	Second Agriculture Sector Development Programme
COVID-19	Coronavirus Disease 2019
CRA	Climate Risk Analysis
DAO	District Agriculture Officer
DCDO	District Community Development Officer
DEMO	District Environment Management Officer
DFO	District Fisheries Officer
DFT	District Facilitation Team
DNRO	District Natural Resources Officer
DoE	Director of Environment (Vice President's Office)
DSFA	Deep Sea Fishing Authority
EEZ	Exclusive Economic Zone
EGS	Early generation seed
EIA	Environmental [and Social] Impact Assessment
EIS	Environmental Impact Statement
EMA	Environmental Management Act of 2004
ENRM	Environment and Natural Resources Management
ESC	Environmental, Social and Climate
ESCMP	Environmental, Climate and Social Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAD	Fish aggregating device
FAO	Food and Agriculture Organisation of the United Nations
FPIC	Free Prior and Informed Consent
ha	Hectare
HH	Household
GALS	Gender Action Learning System
GBV/SEA	Gender Based Violence / Sexual Exploitation and Abuse
GDP	Gross Domestic Product
GO	Grievance Officer
GoT	Government of Tanzania
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
ICT	Information and communications technology
IFAD	International Fund for Agricultural Development
IFC	[World Bank Group's] International Finance Corporation
IOTC	Indian Ocean Tuna Commission

IPMP	Integrated Pest Management Plan
ISTA	International Seed Testing Association
ITCZ	Inter-tropical Convergence Zone
km	Kilometre
km ²	Square kilometres
l/s	Litres per second
m ³	Cubic metre
masl	Metres above sea level
MCM	Million cubic metres
MoA	Ministry of Agriculture
MANRLF	Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar
ME&KM	Monitoring & Evaluation and Knowledge Management
MLF	Ministry of Livestock and Fisheries
mm	Millimetre
MNRT	Ministry of Natural Resources and Tourism
MRALG	Ministry of Regional Administration and Local Government
MRALGSD-ZNZ	Ministry of Regional Administration, Local Government and Special Departments
MOFP-TZ	Ministry of Finance and Planning Tanzania Mainland
MOFP-ZNZ	Ministry of Finance and Planning Zanzibar
MOW	Ministry of Water
MSP	Marine Spatial Plan
MT	Metric tonnes
NBS	National Bureau of Statistics
NEMC	National Environment Management Council
PB	Project Brief
PCB	Polychlorinated biphenyl
PCU	Programme Coordination Unit
PDR	Programme Design Report
PHS	Plant Health Service, Ministry of Agriculture, Tanzania Mainland
PIM	Programme Implementation Manual
PMO	Prime Minister's Office
PPD	Plant Protection Division, Ministry of Agriculture, Livestock and Fisheries, Zanzibar
PSC	Programme Steering Committee
PTAC	Ministerial Programme Technical Advisory Committee
RGZ	The Revolutionary Government of Zanzibar
SEA	Strategic Environmental Assessment
SECAP	[IFAD's] Social Environmental and Climate Assessment Procedures
SEP	Stakeholder Engagement Plan
SME	Small and Medium Enterprises
SOP	Standard Operating Procedure
SUGECO	Sokoine University Graduate Entrepreneurs Cooperative

SWIOFC	South West Indian Ocean Fisheries Commission
SWIOFISH	World Bank's South West Indian Ocean Fisheries Project
TADB	Tanzania Agricultural Development Bank
TARI	Tanzania Agricultural Research Institute
TAFICO	Tanzania Fisheries Cooperative
TAFIRI	Tanzania Fisheries Research Institute
TASTA	Tanzania Seed Trade Association
TMA	Tanzania Meteorological Agency
TOSCI	Tanzania Official Seed Certification Institute
TZ	Tanzania Mainland
URT	United Republic of Tanzania
USD	United States Dollar
WIO	Western Indian Ocean
ZAFICO	Zanzibar Fisheries Cooperative
ZEMA	Zanzibar Environmental Management Authority
ZNZ	Zanzibar

Map 1: Agriculture and Fisheries Development Programme Project Area



 The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.
IFAD Map compiled by IFAD | 24-03-2020

Executive Summary

INTRODUCTION

Over 75% of rural households in Tanzania depend on beans and other pulses for daily subsistence and beans account for 71% of leguminous protein in diets. Sunflower is grown by about 4 million households. More than 30% of the animal protein consumed in Tanzania comes from fish. Agricultural imports have been increasing, with food imports representing the largest share (80%) of total merchandise imports. There is a growing regional export market for beans of different types, estimated at more than 800,000 metric tons (MT) against current export of about 250,000 MT. Tanzania has an estimated demand of 500,000 MT of edible oils, while the total domestic production is estimated at 180,000 MT.

Currently, fish production for 2019/2020 stands at 392,932.82 MT from marine and inland waters. About 85% of the country's fisheries production comes from freshwater inland lakes mainly Lake Victoria, with 14% from marine sources while aquaculture currently contributes just 1%, but with huge undeveloped potential. It is estimated that about 714,000 tons of fish is required to increase per capita fish consumption to 10.5 kg from the current 8.5 kg. This demands an additional 321,000 tons of fish in order to meet this consumption level. On the other hand, the growing export of fish to both international as well as regional markets averages slightly over 30,000 tons, implying that local fish production must be increased by 81.7% to meet the export needs.

One concern is the impact of COVID-19 on Tanzania's fragile food systems and the resultant effect on food production, household food and nutrition security and resilience as well as the country's ability to respond in times of crisis. There are signs of emerging disruptions on the upstream and downstream links of the food and agriculture chains in Tanzania. Therefore, public investments in programmes promoting access to high quality inputs (seeds, fertilizers, fingerlings) and in processing and improving farmers' access to markets are crucial in the post COVID-19 situation.

The second Agricultural Sector Development Strategy II (ASDS II 2015/16–2024/25) aims to address these challenges, by transforming the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition. To support the country in achieving the objectives of the ASDS II, the GoT has requested the International Fund for Agricultural Development (IFAD) to finance the Agricultural and Fisheries Development Programme (AFDP). This new programme will provide support to two priority areas of the ASDP II, by contributing to address key sector challenges in the seeds, fisheries and aquaculture value chains, while strengthening institutional capacities of key public institutions and private sector stakeholders.

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Most of the proposed interventions under AFDP will have some significant impacts that can be readily mitigated or remedied, and therefore fall into Category B. These include crop seed development activities (involving small scale irrigation <100ha, seed testing and certification laboratories and a training centre), aquaculture, mariculture involving the establishment of training centres and technologies to improve seaweed farming. However, the proposed deep sea (tuna) fisheries and related processing activities, may have significant environmental and social impacts which may not be easily remedied and would require more detailed environmental and social analysis. Moreover, any impact on their stocks will extend over a large area beyond territorial waters, and stock assessments

are limited available data, rendering these interventions as Category A. The Programme has therefore been accorded Category A.

At this project design stage, the general nature of activities to be supported are known, but specific details of the various interventions are yet to be developed. SECAP requires that in such cases, an Environmental and Social Management Framework (ESMF) must be prepared in order to guide the preparation of Environmental and Social Impact Assessments (ESIAs) or Project Briefs (PBs) / Environmental and Social Management Plans (ESMPs) for the subprojects and interventions.

This ESMF provides guidance to examine the risks and impacts of the various Programme interventions and activities. It sets out the principles, rules, guidelines and procedures to assess the environmental and social risks and impacts. The ESMF contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures and appropriate roles, responsibilities and capacity for managing, mitigating and monitoring environmental and social concerns related to the Programme. It includes information on the area in which activities are expected to be sited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and potential mitigation measures. It also includes institutional mechanisms to allow the lead agencies to implement the recommended measures.

PROJECT DESCRIPTION

Project Location

The programme targets a total of 42 districts in 10 regions of the central Tanzania Mainland corridor and four marine conservation areas in Unguja and Pemba, Zanzibar. AFDP will focus on drier agro-ecological zones with unimodal rainfall, targeting sustainable intensification and diversification of more vulnerable production and farming systems (crops and aquaculture), highly susceptible to climate variability and change. The programme will also promote sustainable fisheries management for improved livelihoods of coastal fishing communities in Zanzibar and Tanzania Mainland.

Project Components

AFDP is designed as an integrated programme, consolidating multiple ASDP II interventions into a single programme, with a related set of outcomes. The three AFDP components are:

- **Component 1: Enhanced agricultural productivity of crop seeds and fisheries.** The expected outcome of this component is increased climate-resilient productivity and production from crop seed and fish value chains. It will be achieved by focusing investments in two sub-components, namely (i) crop seed systems development and (ii) fisheries and aquaculture development.
- **Component 2: Improved market access, value addition and private sector development.** The expected outcome of this component is improved marketing and value addition of crop seeds and fish products. It will be achieved by combining investments in (i) quality crop seed use and business development and (ii) fish market development and value addition.
- **Component 3: Programme Management and Coordination.** This component will support (i) programme management and coordination, and (ii) monitoring and evaluation (M&E), communication and knowledge management.

Programme Implementation Arrangements

The overall programme coordination will be under the Prime Minister’s Office (PMO), which is responsible for coordinating the implementation of the Second Agriculture Sector Development Programme(ASDP II). In Tanzania Mainland,the Ministry of Agriculture (MoA) and Ministry of Livestock and Fisheries, and in Zanzibar the Ministry of Agriculture, Natural Resources, Livestock and Fisheries will be responsible for Programme implementation. The Programme will establish a semi-autonomous Programme Coordination Unit (PCU) to complement existing ASDP II coordination and management structure. A smaller Programme Coordination Team (PCT) will be established in Zanzibar. Field implementation will be based on performance contracts with key government institutions, selected implementing partners and service providers. Implementation at the district level will use the existing structures of the Local Government Authority that comprise specialist for fisheries, aquaculture and crop seeds, who will work closely with the existing District Facilitation Teams.

INSTITUTIONAL, POLICY, LEGAL AND FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

The United Republic of Tanzania has several policies, legislations and institutional frameworks to regulate and address environmental, climate and social inclusion thematic areas for both sides of the union. These are summarized in the table below.

Table E-1: Policy, Legal and Institutional Framework

Thematic Area	Policy and Legal Framework, and Key Institutions	
	Tanzania Mainland	Zanzibar
Environment and climate change	<p>The Environmental Management Act 2004, Occupational Health and Safety Act, 2003, Public Health Act, 2009, Forest Act No. 14 of 2002; Environmental Impact Assessment and Audit (Amendment) Regulations of 2018, Environmental Management (Solid waste Management) Regulation, 2007, Strategic Environmental Assessment Regulations of 2008, The Environmental Management (Water Quality Standards) Regulations, 2007, Environmental Management (Registration of Environmental Experts) Regulations (2005), The Environmental Management (Fee and Charges) (Amendment) Regulations, 2019, National Environmental Policy (1997), National Forests Policy (1988), National Climate Change Strategy, 2012, National Adaptation Programme of Action, 2007, National Integrated Coastal Environment Management Strategy (2003), Disaster Management Act, 2015.</p> <p><u>Key Institutions</u> Vice President’s Office - Division of Environment National Environment Management Council National Climate Change Technical Committee and National Climate Change Steering Committee</p>	<p>Zanzibar Environmental Management Act of 2015, Environmental Assessment Regulations, 2017, Conservation Areas, Reserves, Parks and Sanctuaries Act, 1994, Territorial Sea and Exclusive Economic Zone Act, 1989, Deep Sea Fishing Authority Act, 2007, National Environmental Policy for Zanzibar (2013), The Establishment of Zanzibar Nature Conservation Areas Management Unit Act (1999), Forest Resources Management and Conservation Act (1996), National Forest Policy for Zanzibar (1995), National Disaster Management Policy, 2011</p> <p><u>Key Institutions</u> 1st Vice President-Department of Environment, Ministry of Land, Water, Energy and Environment, Zanzibar Environmental Management Authority (ZEMA)</p>
Agriculture	<p>The Seeds Act, 2003, Village Land Act No. 5 of 1999, Plant Protection Act of 2002, National Land Policy (1995), Agricultural and Livestock Policy (1997), Irrigation Policy (2010), Pesticides Control Regulations, 1984, Industrial and Consumer Chemicals (Management and Control) Act, 2003, Land Use Planning Act, 2007, National Agriculture Policy (2013), Fertilizer(Bulk Procurement)Regulations,2017, Plant Breeders Rights Act of 2012, The Seeds (Control Of Quality Declared Seeds) Regulations, 2020,The Seeds Regulations, 2007. Agricultural Sector Development Strategy II, 2017, Tanzania Agriculture and Food Security Investment Plan (TAFSIP) 2011-12 to 2020-21, Tanzania Development Vision 2025, Five Year Development Plan 2016/17 – 2020/21, Tanzania Agricultural Research Institute Act, 2016</p>	<p>Land Tenure (Amendment) Act (2003), Agricultural Sector Policy, 2003 Zanzibar Agricultural Transformation For Sustainable Development, 2010-2020, Zanzibar Vision 2020, Zanzibar Strategy for Growth and Reduction of Poverty III, or MKUZA III, 2016-2020,</p> <p><u>Key Institutions</u> Ministry of Agriculture, Natural Resource, Livestock and Fisheries Management</p>

Thematic Area	Policy and Legal Framework, and Key Institutions	
	Tanzania Mainland	Zanzibar
	<u>Key Institutions</u> Ministry of Agriculture, ASA, TOSCI, TARI	
Fisheries	<p>Fisheries Act, 2003, Fisheries Regulations of 2005; Marine Parks and Reserves Act, 1994, Water Resources Management Act, 2009, Water Utilization and Sanitation Act of 2009, National Water Policy, 2002, The National Fisheries Policy (2015), The Standards Act No. 2 of 2009. Wildlife Conservation Act, 2009, Marine Parks and Reserve Act, 1994, Territorial Sea and Exclusive Economic Zone Act, 1989, Deep Sea Fishing Authority(Amendment) Act, 2007, Deep Sea Fishing Authority Regulations, 2009, Public Private Partnership Act and Regulations, 2020; . Fisheries (Prohibition of Use of Specified Vessels or Tools) Regulations, 1994, Ports Act, 2004 (No. 17 of 2004), Merchant Shipping Act, 2003, Surface and Marine Transport Regulatory Authority Act, 2001, Merchant Shipping (Licensing of Unregistered Vessels) Regulations, 1990, Public Private Partnership Act, 2010</p> <p><u>Key Institutions</u> Ministry of Livestock and Fisheries, Deep Sea Fishing Authority, Tanzania Shipping Agencies Corporation, Ministry of Finance, Bagamoyo District Council, Pangani District Council, Mafia District Council and Kilwa District Council</p>	<p>Zanzibar Fisheries Act (2010), Zanzibar Fisheries Policy (2014), Zanzibar Maritime Act, 2009, Territorial Sea and Exclusive Economic Zone Act, 1989, Deep Sea Fishing Authority Act, 2007</p> <p><u>Key Institutions</u> Department of Fisheries, Ministry of Agriculture, Natural Resource, Livestock and Fisheries Management, Zanzibar Maritime Authority</p>
Nutrition	<p>The National Health Policy 2017, Food and Nutrition Policy, 1992, The Tanzania Food and Nutrition Act, 1973, Tanzania Food, Drugs and Cosmetics Act, 2003, Food Security Act, 1991</p> <p><u>Key Institutions</u> Ministry of Health, Community Development, Gender, Elderly and Children Tanzania Food and Nutrition Centre</p>	<p>Zanzibar Food Security and Nutrition Policy, 2008, Zanzibar Food Security and Nutrition Act, 2011 Zanzibar National Health Policy (2010)</p> <p><u>Key Institutions</u> Ministry of Health, Department of Food Security and Nutrition (FSND) of the Ministry of Agriculture, Natural Resources, Livestock and Fisheries (MANRLF)</p>
Gender	<p>Employment and Labour Relations Act, 2004, The National Employment Policy (1997), Policy on Women in Development in Tanzania of 1992; Women and Gender Development Policy of 2000; Community Development Policy of 1996; National Economic Empowerment Policy of 2004; National Land Policy of 1995</p> <p><u>Key Institutions</u> Ministry of Health, Community Development, Gender, Elderly and Children, Ministry of Labour, Employment, and Youth Development</p>	<p>National Plan of Action to End Violence Against Women and Children in Zanzibar 2017–2022</p> <p><u>Key Institutions</u> Ministry of Labour, Empowerment, Elders, Women and Children</p>
Youth	<p>Youth Development Policy,2007</p> <p><u>Key Institutions</u> Ministry of Labour, Employment and Youth Development, Ministry of Information, Culture, Youth and Sports</p>	<p>Zanzibar Youth Development Policy,2005, Youth Employment Action Plan, 2007, Zanzibar Vocational Education and Training Policy, 2005, Zanzibar Employment Policy (2007)</p> <p><u>Key Institutions</u> Ministry of Youth, Arts, Culture and Sports</p>

IFAD'S SAFEGUARD POLICIES

IFAD has developed safeguard policies to support the sustainable implementation of its activities and interventions in achieving its mandate to eradicate rural poverty and food insecurity. These include policies and strategies on: Improving Access to Land and Tenure Security; Disclosure of Documents; Environment and Natural Resources; Gender Equality and Women's Empowerment; Preventing and Responding to Sexual Harassment, Sexual Exploitation and Abuse; Targeting; Social, Environment and Climate Assessment Procedures (SECAP) and Strategy and Action Plan on Environment and Climate Change. SECAP provides 14 Guidance Statements, namely: **Biodiversity; Agrochemicals; Energy; Fisheries and Aquaculture; Forest Resources; Rangeland-based Livestock Production; Water; Dams,**

their Safety and SECAP; **Physical Cultural Resources**; Rural Roads; **Development of Value Chains, Microenterprises and Small Enterprises**; Rural Finance; Physical and Economic Resettlement; and **Community Health**. The most relevant Guidance Statements are emboldened. The key differences between GoT and IFAD policies and requirements are the GoT framework does not specifically provide climate risk categorisation or FPIC; and there are differences in regard to entitlement and procedures for compensation and resettlement and livelihood restoration where physical and economic displacement may occur.

LESSONS LEARNED

The AFDP design builds on lessons learned from IFAD-supported as well as other projects in Tanzania and elsewhere in Africa. These include:

- The need to adopt an inclusive agricultural value chain approach that, beyond productivity and production, invests in linking smallholder producers to more profitable markets, and building their capacities to graduate from artisanal fishing and subsistence farming to semi-subsistence/semi-commercial status, practicing farming as a business.
- The combination of capacity building activities for fishers, traders, processors in capture, handling, processing, and conservation and the improved access to fishing inputs (e.g. ice, electricity, better access roads, etc.) contributes to improved fisheries productivity (more catch and reduced waste) and increased incomes.
- Agriculture value chains are underdeveloped and fragmented, and therefore there is a need to bridge the gap between agricultural production and marketing, with a focus on business innovations benefiting women and youth along the value chain.
- With regard to deep sea fisheries: temporary closures are an effective management tool for sustainable fisheries (ii) fishers are generally happy with closures since they get more during opening season; (iii) better community governance and coordination with buyers is needed during reef opening period in order to avoid spoilage of the high harvest and reduce concentrated fishing pressure at certain sites; and (iv) by-catch continues to be an issue that would require management.

STAKEHOLDER CONSULTATIONS

At the national level, the team met GoT representatives in Dodoma and Dar es Salaam from the Prime Minister's Office (PMO), Ministry of Agriculture (MoA), Ministry of Livestock and Fisheries (MLF); Ministry of Finance and Planning Tanzania Mainland (MOFP-TZ), National Environment Management Council (NEMC), Tanzania Meteorological Agency (TMA), National Bureau of Statistics (NBS), Department of Water Resources in the Ministry of Water (MOW). In Zanzibar, the team met with representatives from the Ministry of Finance and Planning Zanzibar (MOFP-ZNZ), and Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar (MANRLF) and Deep Sea Fishing Authority (DSFA). Other agencies consulted included Tanzania Agricultural Research Institute (TARI), Agricultural Seed Agency (ASA), Tanzania Official Seed Certification Institute (TOSCI), Aquaculture Development Centre (ADC), Tanzania Fisheries Research Institute (TAFIRI), Tanzania Fisheries Cooperative (TAFICO), Zanzibar Fisheries Cooperative (ZAFICO). Discussions were also held with The Nature Conservancy (TNC), the International Union for the Conservation of Nature and Natural Resources, the Indian Ocean Tuna Commission (IOTC), among others.

In addition, in the field the Team met with with crop farmers, agrodealers, sunflower processors, aquafarmers, fishers, and owners of private fishing boats and seaweed farmers.

POTENTIAL ENVIRONMENTAL, SOCIAL AND CLIMATE-RELATED IMPACTS

Beneficial Impacts

AFDP will provide numerous environmental, socio-economic and climate resilience benefits for different stakeholders and target groups. These are summarized below:

Environmental and Natural Resources Benefits:

- Management of natural resources will address destructive fishing practices and illegal mangrove cutting;
- Investments in stock assessments;
- Selective fishing gears will reduce catching non-targeted species;
- Participatory management of natural resources to address destructive fishing practices and illegal mangrove cutting;
- Capacity building for community-based Beach Management Units/Fisheries Cooperatives in sustainable fishing practices and monitoring and reporting IUU fishing activities;
- Capacity building to protect coastal and marine resources will contribute to improving fish stocks;
- Increased use of environmentally friendly adaptive techniques and technologies in fishing, processing and storage;
- Participatory management of natural resources will address destructive fishing practices and illegal mangrove cutting;
- Access to and adoption of environmentally friendly technologies in improved crop seed production

Socio-Economic Benefits:

- Opportunities for income diversification in fish and seed value chains;
- Improved nutrition from bio-fortified maize and beans/pulses, sunflower, seaweed and fish species of high nutritive value;
- Improved food security from increased availability of fish protein (from targeted catch as well as bycatch);
- Support in seed distribution and marketing will improve productivity;
- Access to high quality inputs (seeds, fertilizers, fingerlings) and support to processing and improving farmers' access to markets will cushion impacts in the post COVID-19 situation;
- Support in fingerling distribution, tissue culture and marketing will improve productivity;
- Access markets will cushion impacts in the post COVID-19 situation;
- Reduced workloads due to increased resilient crop yields;
- 90% seaweed producers and processors will be women;
- Enhanced income leading to greater decision-making power for women within the household;
- Economic empowerment to control income and improved decision making;
- Access to better education and health care for children as a result of enhanced income of parents;
- Improved opportunities and skills for small enterprises in processing, storage and value addition of crops and fish products;
- Enhanced capacity as out-growers for seed companies;
- Enhanced capacity as aquafarmers and aquaculture service providers;
- Enhanced capacity as seaweed farmers;
- Enhanced access to financial services;
- Increased participation in decision-making;
- Increased linkage with smallscale seed producers and fishers in different value chains.

Climate Change Resilience:

- Reduced expenditure for disaster management and rescue missions hence more resources directed towards other social services;
- Increased the resilience and adaptive capacity of local people to the threats of climate change through a diversification of income streams;
- Availability of locally adapted seeds that are more resilient to climate change, pests and diseases;
- Solar-powered pumps for irrigating seed fields, and dryers for seaweed will eliminate need for fossil fuel driven pumps;
- Access to locally adapted seeds that are more resilient to climate change, pests and diseases;
- Solar-powered dryers will eliminate need for fossil fuel driven drying technologies;
- Availability of adequate water for ponds throughout the year as there will be shorter dry spells.
- Seaweed farming has a negative carbon footprint.

Adverse Impacts

The Programme will have a number of environmental, social and climate-related risks and negative impacts that will have to be mitigated and managed. These are summarised in the table below.

Table E-2: Environmental, Social and Climate-Related Risks and Impacts

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Responsible Institution in Implementation Phase
Environmental Risks and Impacts		
Abstraction of water for irrigation and aquaculture resulting in depletion of aquifers, particularly in the dry season leading to threats to aquatic ecosystems.	<ul style="list-style-type: none"> • Adhere to permitted abstraction volume as stipulated in water user permits. 	ASA, TARI, ADC Water Basin Offices
Excavation activities and/or clearing of vegetation during construction of irrigation schemes, buildings/workshops, storage and processing facilities, leading to: <ul style="list-style-type: none"> - Soil erosion, - Dust emissions, - Loss in biodiversity; - Resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources and/or sea 	<ul style="list-style-type: none"> • Minimise/prevent soil erosion by controlling earthworks, installing and maintaining drainage structures and erosion control measure; use zero-till/reduce till methods of land preparation. • Mitigation through restoration of the sites after works in accordance with contractors environmental and social management plans (CEMPS) • Any existing riparian vegetation should be maintained (not cleared) • Use zero-till/reduced till methods for land preparation • If mechanized clearing, where water is available, keep dust down by watering exposed/ worked surfaces • If possible, schedule clearing activities such that they avoid the height of the dry seasons. • Careful and continuous supervision of clearing activities so that only areas required for plot/fields are cleared. • Monitor water quality 	ASA, TARI, ADC
Use of agrochemicals, leading to pollution due to leaching, seepage or transmission of agrochemicals through the soil into water sources; threats to aquatic ecology, including bio-magnification of toxins in tissues of aquatic fauna, and/or species die off; loss of biodiversity, ecological imbalances, caused by poisoning of non-target species, particularly bees and other beneficial insects; resistance to pesticides and pest resurgence.	<ul style="list-style-type: none"> • Prepare and implement an Agrochemical Management System, and an Integrated Pest Management Plan • Minimise use of agrochemicals through adopting conservation agriculture techniques, explore organic/natural fertilizers, agrochemicals • Manual removal of weeds • Careful supervision of application of agrochemicals • Use agrochemicals registered and approved by MoA/MANRLF, WHO and FAO 	ASA, TARI, PHS, PPD

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Responsible Institution in Implementation Phase
	<ul style="list-style-type: none"> • Train farmers/aquafarmers in proper use, handling, storage, and disposal of agrochemicals. • Ensure agrochemical containers are disposed of as hazardous waste according to waste management regulations • Keep records of agrochemicals used, application amounts. • Monitor water quality in soils and water sources 	
Over-watering of fields leading to water logging and salinization	<ul style="list-style-type: none"> • Control water supplied to fields • Fields should have slight gradients so as to allow drainage of excess water • Maintain drainage canals and other drainage structures 	ASA, TARI
Discharge of contaminated water from aquaculture ponds entering surface water bodies or contaminating soil.	<ul style="list-style-type: none"> • Monitor water quality discharged from ponds • Treat effluent to conform with Tanzania Bureau of Standards TZS 860: 2005 General Tolerance Limits for Municipal and Industrial Wastewaters prior to discharge into surface waters 	ADC, Municipal Councils, Water Basin Offices in respective areas
Disposal of laboratory reagents, affecting functionality of septic tanks and sewage systems, and leading to chemical pollution of water courses and soil.	<ul style="list-style-type: none"> • Wastewater quality testing • All effluent from laboratories to be treated to conform with Tanzania Bureau of Standards TZS 860: 2005 General Tolerance Limits for Municipal and Industrial Wastewaters prior to discharge into septic tanks, sewage systems or surface waters 	TOSCI, Municipal Councils, Water Basin Offices in respective areas
Oil pollution from spills or leaks fuel, oils and lubricants from farm machinery, oily bilge water from vessels	<ul style="list-style-type: none"> • Where fuel is stored in bulk, the fuel tank should be contained in a bund of 110% tank capacity • Where fuel drums are used these should be stored on sump pallets. • Establish procedures for fuel delivery; decanting/drainage; use, storage; spill response; disposal of waste oil; handling of oil products • Establish procedures for treatment of oily bilge water: use of oil/water separators and storage in waste oil collection tanks until vessel can dispose of it safely onshore. 	ASA, TARI, ADC TAFICO, ZAFICO
Excessive noise from working machinery, drilling boreholes, etc.	<ul style="list-style-type: none"> • Adhere to guidelines as prescribed in the First Schedule of the Environmental Management (Standards for the Control of Noise and Vibrations Pollution), 2014 • Install noise reduction technologies in machinery, generators, etc. 	ASA, TARI, ADC
Generation of waste such as food waste, packaging, scrap metal leading to health risks from proliferation of vermin, obstruction of access	<ul style="list-style-type: none"> • Dispose of solid waste as per best practice guidelines: recycle, reuse, recover and reduce waste • Sensitise construction workers, farmers, fishers, processors, on waste management practices 	ASA, TARI, ADC
Risk of fire destroying structures and surrounding vegetation, and causing air pollution, and solid waste pollution from fire debris	<ul style="list-style-type: none"> • Prepare emergency preparedness and response plan • Training in emergency response as per plan 	ASA, TARI, ADC TAFICO, ZAFICO
Overfishing from DSF vessels and due to use of FADs	<ul style="list-style-type: none"> • Strengthen data reporting and monitoring • Develop and implement deep sea tuna fishing management strategies • Control and monitor use of FADs • Develop FAD management strategies • Limit use of FADs 	DSFA TAFICO, ZAFICO MLF, MANRLF
Juvenile catch and bycatch of non-targeted species	<ul style="list-style-type: none"> • Strengthen data reporting and monitoring • Develop and implement deep sea tuna fishing management strategies • Control and monitor use of FADs • Develop FAD management strategies 	DSFA TAFICO, ZAFICO MLF, MANRLF

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Responsible Institution in Implementation Phase
	<ul style="list-style-type: none"> • Limit use of FADs • Use non-entangling and biodegradable FADs 	
Risk of escape of seaweed culture to open sea	<ul style="list-style-type: none"> • Prepare biologically coupled hydrodynamic models to support the assessment of risk, understand carrying capacity of water bodies and select suitable sites for seaweed cultivation • Seaweed farm management practices to enhance biosecurity measures. 	MANRLF
Social/Socio-Economic Risks and Impacts		
<p>Irrigation, aquaculture resulting in reduced availability of water for other ongoing and planned developments, causing conflict between communities and project interventions</p> <p>Competition for water sources with community sources</p>	<ul style="list-style-type: none"> • Ensure community water sources are not compromised • Establish grievance redress mechanism to deal with conflicts 	ASA, TARI, ADC Water Basin Offices
Poor application and handling of agrochemicals: touching, inhaling or ingesting toxic chemicals leading to dermatological or gastric ailments, or poisoning.	<ul style="list-style-type: none"> • Develop agrochemical management system and IPMP describing handling, storage, use and disposal of all agrochemicals used on the schemes. • Train farmers in the handling, safe storage, application and disposal of all agrochemicals. 	ASA, TARI, ADC PHS, PPD
Poor treatment application methods and improper storage leading to proliferation of aflatoxins and resulting health effects on community	<ul style="list-style-type: none"> • Remove sources of contamination, promoting better agricultural and storage techniques (control moisture, temperature, and aeration) • Ensure adequate resources are available for testing and early diagnosis, and enforcing strict food safety standards, • Sensitisation of farmers and consumers about risks of aflatoxins • Create general awareness about personal protection • Chemical decontamination or use of enterosorbents for contaminated grains 	ASA, TARI
Encroachment by deep sea and artisanal fishers into marine protected areas or sensitive coastal areas affecting marine biodiversity	Establish buffer zones between marine protected areas and EEZ	DSFA TAFICO, ZAFICO
Excessive noise levels from fishing vessel engines, ice making, farm machinery, and value chain processing activities causing workers' and fishers' hearing impairments	<ul style="list-style-type: none"> • Adhere to guidelines as prescribed in the First Schedule of the Environmental Management (Standards for the Control of Noise and Vibrations Pollution), 2014 • Provide PPE to personnel exposed to excessive noise levels on site such as ear muffs. • Install noise reduction technologies in machinery, generators, etc. 	TAFICO, ZAFICO ASA, TARI
Emissions from burning e-waste are toxic to humans and animals.	<ul style="list-style-type: none"> • Avoid burning e-waste • Set up e-waste management procedures. • Agree with suppliers that e-waste from the equipment supplied by them to be taken back by them for recycling/disposal in line with Environmental Management (Hazardous Waste Control and Management) Regulations, 2019 and international best practice. • Establish grievance redress mechanism 	TOSCI NEMC
<p>Accidents and injuries to workers due to movement of materials into construction sites, as well as construction activities, for processing plants, treatment and storage facilities, workshops, laboratories, etc.</p> <p>Accidents and incidents, electrocution, from handling machinery and working with electrical</p>	<ul style="list-style-type: none"> • Provide adequate and appropriate PPE such as safety boots, helmets, gloves, overalls and this should be in keeping with the task and exposure a worker is subjected to • Comply with OSHA requirements and best practice • Provide training to all relevant personnel in necessary OHS requirements to ensure their safety • First Aid Kit must be kept on the site and modestly stocked with necessities for any emergencies. • Prepare an Emergency Preparedness and Response and Evacuation Plan 	OSHA

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Responsible Institution in Implementation Phase
systems, during operation/implementation in buildings and on vessels	<ul style="list-style-type: none"> • Train all personnel in emergency response 	
Conflicts in use of coastline for seaweed vs tourism and other activities using same resources	<ul style="list-style-type: none"> • Consultations between seaweed farmers, tourism operators, government offices and other key stakeholders to agree on how to use/share beach area. • Establish grievance redress mechanism to deal with conflicts • Develop Marine Spatial Plan designating specific zones for specific activities along coastline. 	PCU Department of Fisheries of MANRLF
Women may be marginalised from participating in seaweed cultivation if access to training is limited and if technologies make it difficult for women (eg if seaweed is to be grown in deeper water)	<ul style="list-style-type: none"> • Continuous consultations and dialogue between project implementors and potential women participants/ beneficiaries to establish how to overcome some of these difficulties. 	PCU Department of Fisheries of MANRLF
Gender based violence (GBV) i.e. transactional sex (fish for sex) and Intimate Partner Violence, child labour	<ul style="list-style-type: none"> • Create awareness on prevention, handling and referral for all forms of GBV and child labour – integrated in the project activities 	PCU, all Programme entities
Retrogressive social norms prevent women and youth from participating and benefitting from project activities	<ul style="list-style-type: none"> • Use of GALS methodology and or other gender participatory methodologies to empower women and make women’s roles, needs and aspirations visible; and sensitizing smallholder farmers, women, men and youth to increase their participation • Increasing women’s access to knowledge, skills, inputs and finance through training, matching grants, exposure visits and GALS fairs • Increasing women and youth’s visibility as actors in the value chains through representation quotas 	PCU, all Programme entities
Inequitable labour and working conditions.	<ul style="list-style-type: none"> • Ensure labour and working conditions are in line with national labour laws and ILO core conventions: equal pay, non-discrimination 	PCU Ministry of Labour and Employment (TZ), Ministry of Labour, Empowerment, Elderly, Youth, Women and Children (ZNZ)
Inadequate consultation of various stakeholders, particularly with vulnerable and disadvantaged members of the communities may result in reduced uptake of linkages, promoted varieties, attendance at field schools, enhanced marketing, value chain interventions	<ul style="list-style-type: none"> • Carry out continuous, extensive and inclusive consultations with stakeholders, particularly vulnerable and disadvantaged groups, during entire project period • Set up and disseminate Grievance Redress Mechanism which should be accessible to all stakeholders 	PCU, all Programme entities
Risk of fire on spreading to neighbouring premises, and causing injury/fatalities to workforce and neighbours. Risk of fire from onboard vessel activities causing injury/fatalities to crew and fishers	<ul style="list-style-type: none"> • Prepare emergency preparedness and response plan • Train all workers, crews and fishers in fire response 	ASA, TARI, ADC TAFICO, ZAFICO
Failure of reservoir structure causing hazard risk to workers on site and surrounding communities	<ul style="list-style-type: none"> • Prepare emergency preparedness and response plan • Train all workers, and community leaders/representatives in hazard response procedures. 	ASA, TARI, ADC
The COVID-19 pandemic may affect output and earnings as a result of restrictions on imports of tuna and processed seaweed imposed by target countries, or disruptions in transportation modes resulting in spoilt goods.	<ul style="list-style-type: none"> • Ensure guaranteed markets 	MARNLF TAFICO, ZAFICO
Climate Risks and Impacts		
Pests and disease outbreaks, including locusts, fall army worm, fish diseases	<ul style="list-style-type: none"> • Establish early warning systems • FOs to be trained in accessing climate early warning systems • Encourage FOs to develop alternative livelihood means through safety nets 	ASA, TARI, ADC

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Responsible Institution in Implementation Phase
	<ul style="list-style-type: none"> Develop and implement IPMP 	
Excessive rain, wind or floods may damage project buildings and road and water infrastructure.	<ul style="list-style-type: none"> Install and maintain drainage structures to regulate stormwater and runoff/run on 	ASA, TARI, ADC
Excessive rain, wind or floods may cause severe soil erosion	<ul style="list-style-type: none"> Install and maintain drainage structures to regulate stormwater and runoff/run on Use zero-till/reduced till methods for land preparation 	ASA, TARI, ADC
Extreme rainfall affecting ITC, cellular signals for early warning systems	<ul style="list-style-type: none"> Back up data 	PCU, TOSCI
Sea water rise may affect project structures if located to close to the sea, and make seaweed farming difficult	<ul style="list-style-type: none"> Careful siting and maintenance of structures based on predicted sea level rise 	PCU Fisheries Department of MANRLF
FADs cut loose due to cyclones or severe wave action leading to ghost fishing	<ul style="list-style-type: none"> Use of smart FADs include sonar and GPS capabilities so that the operator can remotely contact it via satellite to determine the location if cut loose. Use of biodegradable materials for FADs Monitor break away FADs 	Fisheries department at Bagamoyo, Kilwa, Mafia and Pangani District Councils
Tropical cyclones and inclement seas leading to vessels getting lost, damage to vessels, capsizing.	<ul style="list-style-type: none"> Prepare emergency preparedness, response and evacuation plan Train all crew members and fishers in emergency procedures 	TAFICO, ZAFICO DSFA
E-waste releases of GHG	<ul style="list-style-type: none"> Avoid burning e-waste Set up e-waste management procedures. Agree with suppliers that e-waste from the equipment supplied by them to be taken back by them for recycling/disposal in line with Environmental Management (Hazardous Waste Control and Management) Regulations, 2019 and international best practice. 	TOSCI NEMC
Disillusion, distrust as a result of delayed implementation	<ul style="list-style-type: none"> Continuous communication with stakeholders at all levels. 	PCU
Poor safeguards measures in Procurement	<ul style="list-style-type: none"> Ensure procurement of safeguards related studies is done in accordance to IFAD's procurement guidelines 	PCU, IFAD

CLIMATE RISK ASSESSMENT

AFDP has been classified as moderately sensitive to climate risks, and therefore falls into the medium risk category. A basic climate risk analysis (CRA) was carried out to determine the exposure of the Programme to climate-related risks based on available information about historic climate hazard occurrences, climate change trends and projections.

Climate models project increases in temperature with high variation from zone to zone. Temperatures in the western parts of the country are projected to rise up to 3.4°C by 2100. Rainfall projections predict increased rainfall in most parts of the country, especially over coastal regions, parts of north-eastern highlands, northern regions, western and southern parts of the Lake Victoria basin. The south-western highlands, eastern parts of Lake Nyasa, and Western regions are projected to experience decreased rainfall.

With regard to crop seed production, maize production is sensitive to daytime high temperatures above 30 °C. Heat stress during flowering and grain filling stages, and reduced moisture availability results in decreased grain count and weight, resulting in low crop yield and quality. Maize seed production in semi-arid areas of central zones of Tanzania is therefore likely to face a decrease in yield of 8-13% by 2050 due to increased heat stress, drying, soil erosion and land degradation. In semi-arid

areas, water and heat stress are projected to decrease the length of the growing season while spatially shrinking the suitable areas for agricultural production. Similarly, bean yields are expected to decrease by 5-9% by 2050. Climate change is also likely to reduce yields in sunflower seed production, which is sensitive to dry spells and droughts

Increasing seasonal and annual variability in precipitation and resulting flood and drought extremes are likely to be the major threats to aquaculture development. Reduced annual rainfall may lead to potential conflict with other agricultural, industrial and domestic users in water-scarce areas. So small-scale farmers may suffer from shortened growing seasons and reduced harvests of inferior fish. The decreasing water levels stimulate early maturation and spawning of some important farmed species, resulting in over-crowding, loss of economic returns and a narrower choice of species for aquaculture.

The main impacts of climate change on Tanzanian fisheries are the destruction or degradation of fish spawning and nursery grounds, and feeding areas. Rising sea surface temperature and ocean acidification are considered as major threats to coral reefs. However, coral reefs may have the capacity to adapt to changing temperatures more quickly than expected by changing their species composition rather than disappearing. This will also affect associated fish fauna that will change towards more generalist species.

As for seaweed farming, *E. spinosum* and *E. cottonii* production have been declining substantially over the last decade, due to increasing sea surface temperatures and longer hot seasons. Farmers have experienced serious problems of die-off and ice-ice diseases resulting into decreased production.

ENVIRONMENTAL, SOCIAL AND CLIMATE CHANGE MANAGEMENT PROCEDURES

Implementation and Coordination Arrangements

As mentioned above, while the overall coordination role sits with the PMO, the MoA, MLF and MANRLF will be responsible for Programme implementation through PCU which will be guided by the Steering Committee, the Technical Advisory Committee (PTAC), Technical Working Groups (TWGs)/Ministerial Technical Committee, and District Facilitation Teams (DFTs). The PCU will include an Environmental, Social and Climate (ESC) Specialist who will report to the Programme Coordinator. The ESC Specialist will work closely with the DFTs, particularly the District Environment Management Officers (DEMO), the District Agriculture Officers (DAO), the District Fisheries Officers (DFO), and the District Community Development Officers (DCDO), as well as the Regional Environmental Officer.

The implementing agencies for the various Programme activities and interventions are TARI, ASA, ADC, TOSCI, TAFICO and ZAFICO.

Specific responsibilities in relation to environmental and social assessment and monitoring procedures and safeguards requirements are described in the sections.

Screening

AFDP has been categorised as Category A. While most of the proposed interventions will have some significant impacts that can be readily mitigated or remedied and therefore fall into Category B, some activities will have significant environmental impacts which are not easily remedied rendering them Category A. Category B interventions are: crop seed development activities (involving small scale irrigation <100ha, seed testing and certification laboratories and a training centre), mariculture involving a training centre to promote technologies to improve seaweed farming, and aquaculture

ponds. However, the deepsea fisheries and related processing activities may have significant adverse environmental and/or social implications that warrant further investigation. The impacts of tuna fisheries are sensitive not least because a number of tuna and tuna-like species are considered to be susceptible to overfishing or are currently overfished, and moreover any impact on their stocks will extend over a large area, beyond territorial waters. This is compounded further by the limited data available on fish stocks and sustainable yield. Thus, the deep sea fisheries and related interventions are considered to be Category A.

The table below shows categorization for activities and interventions under each of the AFDP components.

Table E-3: Screening and Categorisation of AFDP Activities

Components and Interventions	Activity categorisation	
	GoT/RGZ	SECAP
Component 1. Enhanced productivity of crop seeds and fisheries		
<i>Subcomponent 1.1: Crop seed systems development: National seed demand and supply coordination, Innovation development and Early Generation Seed production; Basic seed multiplication; Seed certification</i>		
Irrigated fields as seed farms <100ha in size including: laboratory, seed dryer, processing plants, workshops for farm equipment maintenance, water reservoirs, and seed treatment and storage facilities for produced seed, and boreholes	B1	B
Irrigation schemes for EGS approx. 25ha in size including: laboratory, workshops for farm equipment maintenance, water reservoirs, seed treatment and storage facilities, and boreholes.	B2	B
Seed Testing Laboratories (infrastructure & equipment) Seed certification (field and lab control, electronic systems for seed authentication)	B1	B
<i>Subcomponent 1.2: Fisheries and aquaculture development: Development of sustainable marine fisheries production system; Increasing aquaculture productivity and output; Increasing mariculture productivity and output</i>		
Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and storage >50T /day	A	A
Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and storage <50T /day	A	A
Support to artisanal fishing: provision of fishing gear to artisanal fishers (90 FADs)	B2	B
Aquaculture demonstration centres at 3 ADC sites, incl borehole and one water supply system at Kingolwira	B1	B
Additional Borehole at Boma Road for Kingolwira ADC	B1	B
Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration farm	n/a	B
Mariculture training centres x 2 (Unguja and Pemba) <360 students	n/a	B
Component 2. Improved market access, value addition and private sector development		
<i>Subcomponent 2.1: Quality seed use and business development: Zonal multi-stakeholder innovation platforms. Promoting offer and access to improved seeds. Promoting awareness and demand for improved seeds</i>		
Distribution networks, linkages between agrodealers and farmers to facilitate access to improved seeds	n/a	C
Promotion of use of improved varieties and CSA practices (targeted support to extension)	n/a	C
Support FO for services for member access to inputs and markets	n/a	C
ICT platforms for dissemination of information on seed availability (improved varieties and quantities)	-	B
<i>Sub-component 2.2: Fish market development and value addition: Reducing post-harvest losses. Private-Public-Producer partnerships (4Ps) joint venture for deep sea fishing. Increasing value/income from aquaculture production</i>		
Ice plants for smallscale fishers x 8 (cap <50T/day)	B1	B
Cold chain: Cold storage facilities (40 t/facility) x2 and Refrigerated trucks x5	B1	B

Components and Interventions	Activity categorisation	
	GoT/RGZ	SECAP
Construction of fish market at Kipumbwi, incl. storage and ice plant	B1	B
Dagaa solar powered drying racks x80	n/a	B
Solar drying tents for seaweed and machines for grinding dried seaweed x5	n/a	B
Fish feed mills	n/a	B
Component 3. Programme Management and Coordination		
<i>Subcomponent 3.1: Policy engagement and institutional strengthening</i>		
Institutional reforms in public institutions	n/a	C
Development of aquaparks (aquaculture cluster growth model)	n/a	C
<i>Subcomponent 3.2: Programme Management and Coordination:</i> Programme management, coordination, monitoring and evaluation (M&E), communication and knowledge management	n/a	C
<i>Subcomponent 3.3: Emergency recovery and resilience post COVID-19</i>	n/a	C

Where categorisation by national legislation and SECAP categorisation differs, the more stringent categorisation is applied.

Environmental, Social and Climate Safeguards Documentation

The main types of safeguards documentation required to be prepared for AFDP are:

- i. Environmental and social impact assessment studies (ESIAs) and Environmental and Social Impact Statements (EISs) for Category A projects;
- ii. Project Briefs (PBs) - equivalent to SECAP's Category B Environmental and Social Management Plans - for Category B1 and B2 projects. For GoT Category B1 projects, a PB is prepared and submitted to NEMC for review, and NEMC then determines whether a full ESIA is required or whether the PB will suffice;
- iii. Standard Operating Procedures (SOPs) and activity-specific management plans;
- iv. Climate risk analysis (CRA) as described above;
- v. Integrated Pest Management Plan (IPMP) where agrochemicals are to be used;
- vi. Stakeholder Engagement Plan (SEP) to guide stakeholder consultations for the duration of the various interventions and subprojects.

AFDP will not cause any physical or economic displacement, since all activities will take place on existing government-owned land, or within territorial waters or in the EEZ. There is therefore no encroachment onto, or acquisition of, ancestral lands belong to indigenous groups, nor will any of the Programme's interventions and activities affect indigenous groups. Furthermore, the Programme will not trigger FPIC as defined by IFAD's How to do Note on Free Prior Informed Consent, since it involves agricultural and fisheries development subprojects in rural areas with no indigenous groups or minorities, and which will not affect land rights. Hence the need for a Resettlement Action Framework or Resettlement Action Plans, Indigenous Peoples Plans or FPIC Implementation Plan is precluded.

Disclosure of ESIAs and Project Briefs

In developing ESIAs and Project Briefs, consultations must be held with all levels: at community/village, district and national levels. During these consultations, the processes for disclosure of the documents should be communicated. IFAD's SECAP procedures also require that sufficient consultations have been carried out with key stakeholders (ie. the communities). While the Project Briefs and ESIAs are being reviewed by NEMC, the ESIAs or Project Briefs and AFDP's Integrated Pest Management Plan (IPMP) will be disclosed nationally, at a location accessible to the general public, and in a form and language that the communities are able to understand, so that they may comment

on any aspects/issues contained in the reports prior to their approval. PMO, MoA, MLF and MANRF and IFAD will be responsible for disclosure, and the disclosure period may take up to 60 days.

Review and Approval of ESIA's, Project Briefs and IPMP

ESIA's and Project Briefs will be reviewed by the PCU ESC Specialist and then submitted for review and approval/clearance to NEMC. The AFDP IPMP will be reviewed by IFAD and approved by the Plant Health Services Unit (PHS) of the MoA, Fisheries Development Division in the MLF, and the Plant Protection Division (PPD) of the MANRFL.

Gender Based Violence (GBV) and Sexual Exploitation and Abuse (SEA)

AFDP component interventions, depending on their scope, can exacerbate existing risks or can create new ones. Project-related risk factors may include: women perceived as taking jobs away from men; unequitable sharing of income between men and women after sale of produce; and failure by communities to relate with construction labourers who sometimes have different culture and language. All these can exacerbate already existing inequities between women, men, and youth.

Grievance Redress Mechanism

The goal of AFDP's Grievance Redress Mechanism (GRM) is to promote a mutually constructive relationship and enhance the achievement of Programme's development objectives. The GRM is to ensure that complaints are directed and expeditiously addressed by the relevant agencies which are to enhance responsiveness and accountability. AFDP will utilize existing formal or informal grievance mechanisms to resolve disputes which may arise. Informal mechanisms include existing committees and or individuals in farmers groups responsible for conflict management to handle disputes. The formal grievance redress mechanisms exist at ward levels where the members of ward tribunals are involved in dispute resolution. For criminal cases, the police are required to intervene. Should disputes not be resolved at these levels, then the matter is taken to the district magistrate's, resident magistrate and finally high courts. Conflicts related to labour relations at work place between employee and employer are resolved by Commission of Arbitration and mediation. In addition to AFDP's GRM, communities and individuals who believe that they are adversely affected by AFDP activities may submit complaints to the IFAD Grievance Redress Service (GRS).

Monitoring

Performance monitoring requires that: the various safeguards instruments (ESIA's, Project Briefs, ESMPs, and IPMP) have been prepared to the required standard, within the required timelines; the safeguards instruments have been reviewed and approved by the responsible entities; environmental, social and climate mitigation measures, have been/are being implemented and that mitigation measures are effective; the implementation of the ESMPs, IPMP and GRMe grievance redress mechanism(s); the community is participating in all stages of the environmental and social management and monitoring processes; PCU and relevant officers in the implementing agencies have been trained in accordance with the capacity building proposals; reports are prepared and delivered as required. Performance monitoring will be done primarily by the ESC Specialist.

Results monitoring involves monitoring compliance and effectiveness of the safeguards instruments, and also assesses the overall environmental, socio-economic and climate-related impacts of the Project's interventions in relation to its development objectives. Results monitoring will be done on an annual basis by the ESC Specialist, in collaboration with the DEMOs, DCDOs and Regional Environmental Experts.

Quarterly and Annual Reviews

Quarterly and annual reviews will be undertaken by the ESC Specialist. These reviews are necessary to: ensure that subprojects and interventions are complying with the processes established in the ESMF; ensure that subprojects are compliant with the conditions and requirements stipulated in ESIA, ESMPs and IPMP; identify challenges and opportunities in order to learn lessons and thereby improve Programme performance; and be able to determine the cumulative impacts of the Programme to establish attainment of its Development Objectives.

Reporting

Each implementing agency will submit monthly reports on environmental, social and climate-related issues to the PCU on their respective interventions and activities. The PCU Programme Coordinator will submit quarterly and annual environmental, social and climate performance reports to the PSC and IFAD.

Auditing

The purpose of auditing is to establish the level of compliance with national policy objectives and regulatory requirements and whether NEMC's conditions of approval attached to the EISs and Project Briefs are being implemented satisfactorily. The PCU will be responsible for ensuring that annual monitoring audits (for environmental and social compliance) are carried out once every year. The audits will be carried out by independent NEMC-registered expert. Audit reports will be sent to the PSC and IFAD, as well as to NEMC and the respective implementing agencies. NEMC will review the audits and provide feedback to the PSC for passing onto the respective implementors.

Summary of ESC Procedures and Responsibilities

The table below summarises the environmental, social and climate change management procedures and responsibilities described in this ESMF.

Table E-4: Summary of ESMF Processes and Responsibilities

ESMF Procedures	Activity	Responsibility
ESIA/Project Brief	Preparation of EIS or Project Brief, both containing ESMPs	NEMC-registered Expert
	Disclosure of EIS or Project Brief	MoA, MLF, MANRLF and IFAD
	Review of EIS or Project Brief	ESC Specialist
	Review and approval of EIS or Project Brief	NEMC
	Implementation of ESMP	Implementing agencies, contractors
	Supervision and monitoring of the ESMP developed for EIS or Project Brief	ESC Specialist and DEMOs
Other Plans/SOPs	Preparation of management plans / SOPs	Consultant or Technical Assistants, supervised by ESC Specialist
	Implementation of SOPs	ESC Specialist
Climate Risk Analysis	Climate risk monitoring	ESC Specialist, VPO's Office
IPMP	Preparation of IPMP	ESC Specialist

ESMF Procedures	Activity	Responsibility
	Review and approval of IPMP	IFAD, PHS (MoA-TZ), and PPD (MANRF-ZNZ)
	Supervision and monitoring of implementation of IPMP	ESC Specialist, District Agricultural Officers, District Fisheries Officers
Grievance Redress Mechanism	Grievance receipt, verification, investigation, resolution, communication with complainant and referral to higher levels if necessary	GO/GRC Ward tribunals
	Monitoring of effectiveness of GRM	ESC Specialist
Performance monitoring	Safeguards instruments	ESC Specialist
	Intervention level activities	Implementing agencies
Results Monitoring	Project level environmental and social indicators	ESC Specialist, DEMOs, DCDOs, Regional Environmental Officer
Reviews	Submission of quarterly review reports to PSC and IFAD	ESC Specialist
	Submission of annual review reports to PSC and IFAD	ESC Specialist, PCU ME&KM Officer
Reporting	Monthly environmental, social and climate resilience reports to PCU	Implementing agencies
	Quarterly and annual environmental, social and climate resilience performance reports to the PSC and IFAD	PCU Programme Coordinator
Annual Monitoring Audits	Audits of subprojects once every year	Carried out by independent Expert registered with NEMC. Overall responsibility ESC Specialist. Reviewed/approved by NEMC

CAPACITY BUILDING

Training of Programme implementers at various levels will be integrated into planned training activities during the course of implementation. Proposed trainings, target audience and training methods are summarized in the table below.

Table E-5: Proposed Trainings, Target Audience and Training Methods

Training Topics	Target Audience	Training Methods
National environmental, social and climate policies, legislation, regulations and administrative frameworks requirements	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers, Leaders of farmers and fishers groups, Leaders of Seaweed farmers and Leaders of Beach Management Units/Fisheries Cooperatives	Training workshops/seminar organized at respective centres/offices of implementing agencies
IFAD's SECAP and ENRM, Climate, Land and Disclosure Policies	ADCs, ASA, TARI, TOSCI, Fisheries Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies

Training Topics	Target Audience	Training Methods
ESMF processes, procedures and institutional arrangements to develop and implement required safeguards documents	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Environmental, social and climate impact assessment, IPMP, PCR assessment approaches and requirements	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Preparation, implementation and monitoring of ESMPs, ESIA, IPMPs	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Reporting and monitoring the implementation of ESMPs and IPMPs	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Environmental and social best practices – including proper application of chemical inputs, pest management, water saving agronomic practices, soil fertility management, labour saving techniques,	Aqua Farmers groups, Crop Farmers groups, Fishers groups and Beach Management Units/Fisheries Cooperatives	Practical training sessions organized at respective centres/offices of implementing agencies
Conservation agriculture techniques	Farmers groups	Practical training sessions
Sustainable fishing methods, fisheries reporting	Fishers groups and leaders of Beach Management Units/Fisheries Cooperatives	Training workshop

ESMF IMPLEMENTATION BUDGET

The cost estimate for the implementation of activities proposed in this ESMF is USD 572,000. This includes costs for undertaking the environmental and social analyses for Category A and B projects, costs to be paid to NEMC for review of these studies, as well as for carrying out the requisite annual monitoring audits. The budget also provides for, inter alia: preparation and implementation of environmental and social management plans and SOPs; supervision and monitoring of environmental and social monitoring activities; annual ESC reviews be undertaken by the PCU, and attended by DEMOs, DCDOs, members of the ministry EMUs, and Regional Environmental Officers.

SUMMARY OF KEY ISSUES ARISING AND RECOMMENDATIONS FOR DESIGN

Project Implementation Arrangements: The institutional arrangements for AFDP implementation as presented in the PDR have provided for an Environmental, Social and Climate (ESC) Specialist in the PCU who will be directly responsible for overseeing the environmental, social and climate-related aspects of the Programme interventions.

Project Categorisation: Deep sea fisheries and related processing activities may have significant adverse environmental and/or social implications that warrant further investigation. The impacts on tuna fisheries are sensitive because a number of tuna and tuna-like species are considered to be susceptible to overfishing or are currently overfished. In order to ensure sustainable tuna fisheries, it

has been proposed that a Tuna Fisheries Management Plan will be developed and implemented under AFDP's Fisheries Component. Other AFDP subprojects and interventions such as crop seed development activities will have environmental, social and climate-related risks which can be readily mitigated. SECAP requires that the overall Programme category is based on the categorisation of the highest risk activities; thus, the AFDP has been categorised as Category A.

Climate Risk Analysis: The Programme is screened as having Medium Risk, and therefore a Basic Climate Risk Analysis has been prepared for the AFDP. However, the risks of climate change on and from interventions or subprojects need to be assessed as part of the Project Briefs / ESIA's that are required to be prepared, in the context of susceptibility to climatic events in their locations and resilience of the activities to those climatic events.

Physical and Economic Displacement: AFDP will not support subprojects or interventions that will cause any physical or economic displacement. Land to be acquired for demonstration plots, workshops and stores/sheds will be located on Government land, which will be selected provided no economic or physical displacement will take place. The FPIC process is therefore not required to be applied.

Marginalized populations: Tanzania does not identify with the term indigenous, rather considers that there are segments of the population who may be disadvantaged due to their poverty status and other aspects of marginalization. These include the Akie, the Hadzabe, the Barabaig, and the Maasai. These people are often impoverished and food insecure due to land disputes and conflict. Women from these communities have little say in the decisions, right to health education, right to own properties, land and income of family¹.

Community Involvement in Subproject Implementation: Community involvement will be critical throughout AFDP. In particular, AFDP should work with coastal communities to make them more resilient to the effects of climate change and environmental degradation. In this regard, it is recommended that the AFDP works closely with artisanal fishers, BMUs and Fisheries Cooperatives in Tanzania Mainland and Zanzibar in the sustainable management of the coastal ecosystems on which their livelihoods depend. Thus, they should be involved in developing the proposed Tuna Fisheries Management Plan.

Capacity Building: While the AFDP's lead agencies (PMO, MoA, MLF) have Environmental Management Units, their officers still need to be trained in IFAD's as well as national environmental and social requirements to ensure environmental and social mainstreaming is done from the very start of the Programme interventions.

¹ Human Rights Council Working Group on the Universal Periodic Review, United Republic of Tanzania, U.N. Doc. A/HRC/WG.6/25/TZA/

1 Introduction

1.1 Background to the Agriculture and Fisheries Development Programme (AFDP)

Agricultural production contributed to about 29.1% of GDP, 47% of exports and provided employment to about 66.3% of Tanzanian households in 2018 (a decline from 71.4% of total employment in 2008), while meeting 95% of the country's food requirements. Tanzania has 95.5 million hectares (ha) of land, of which 44 million ha are classified as arable, with only 23% under cultivation. One third of cropland (4 million ha), is devoted to maize, which accounts for 40% of the national caloric intake. About 80% of agricultural production comes from rainfed, low-input smallholder farms (with an average farm ranging from 0.2 ha to 2 ha) highly vulnerable to weather variability. Key national and regional trends are driving structural changes in the agricultural landscape and food systems in Tanzania, providing new opportunities but also challenges.

Over 75% of rural households in Tanzania depend on beans and other pulses for daily subsistence and beans account for 71% of leguminous protein in diets. Grown by about 4 million households, sunflower is healthier than other types of oil, as it is low in saturated fat and high in polyunsaturated fat. More than 30% of the animal protein consumed in Tanzania comes from fish, which also enrich daily food intake with macronutrients such as lipids and essential and amino and fatty acids.

Agricultural imports have been increasing, with food imports representing the largest share (80%) of total merchandise imports. There is a growing regional export market for beans of different types, estimated at more than 800,000 metric tons (MT) against current export of about 250,000 MT. Tanzania has an estimated demand of 500,000 MT of edible oils, while the total domestic production is estimated at 180,000 MT.

Currently, fish production for 2019/2020 stands at 392,932.82 MT from marine and inland waters. About 85% of the country's fisheries production comes from freshwater inland lakes mainly Lake Victoria, with 14% from marine sources while aquaculture currently contributes just 1%, but with huge undeveloped potential. It is estimated that about 714,000 tons of fish is required to increase per capita fish consumption to 10.5 kg from the current 8.5 kg. This demands 321,000 tons of fish that needs to be added in order to meet this consumption level. On the other hand, the growing export of fish to both international as well as regional markets average slightly over 30,000 tons, implying that local fish production must be increased by 81.7% to meet the export needs. The marine fisheries, especially the Exclusive Economic Zone (EEZ), covering an area of 223,000 km² can contribute 30% of the total fish required by 2025, however it remains unreachable by local fishers due to, among other things, limited capacity, experience and lack of appropriate fishing vessels suitable for deep sea fishing. On the other side, the national demand for fish seeds is estimated at slightly over 86 million fingerlings, against current production of about 21 million fingerlings. However, given the rising demand, the country will need to produce 250 million fingerlings by 2025.

One major issue of concern is the impact of COVID-19 on Tanzania's fragile food systems and the resultant effect on food production, household food and nutrition security and resilience as well as the country's ability to respond in times of crisis. With the spread of the virus in the continent, containment measures, including social distancing and lockdowns, closing of schools, the prohibition of public gatherings and the closure of non-essential businesses and economic activities, will have far-reaching consequences. There are signs of emerging disruptions on the upstream and downstream links of the food and agriculture chains in Tanzania as the Government of Tanzania (GoT) implements health measures to slow the spread of the virus. Government's efforts to contain the spread of the virus need to be accompanied by measures to minimize disruptions to the food and agriculture systems

and to support the livelihoods and food security of the most vulnerable. Public investments in programmes promoting access to high quality inputs (seeds, fertilizers, fingerlings) and in processing and improving farmers' access to markets are crucial in the post COVID-19 situation.

To address some of the challenges, the Government of Tanzania (GoT) adopted the second Agricultural Sector Development Strategy II (ASDS II 2016/17–2027/28). The goal was to accelerate the transformation of the agricultural sector into modern, commercial, highly productive, resilient and competitive sector in the national and international markets, in accordance with the Tanzania Development Vision 2025. The GoT developed the second phase of the Agricultural Sector Development Programme (ASDP II 2016/2017–2025/2026) with the objective of transforming the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition.

In order to accelerate ASDS II's implementation and delivery of scalable results, the GoT has requested the International Fund for Agricultural Development (IFAD) to finance the Agricultural and Fisheries Development Programme (AFDP). This new programme will provide support to two priority areas of the ASDP II, by contributing to address key sector challenges in the seeds, fisheries and aquaculture value chains, while strengthening institutional capacities of key public institutions and private sector stakeholders.

1.2 Goal and Objectives of AFDP

The AFDP's (2020-2026) overall goal is: *to contribute to inclusive food systems for improved livelihoods, food security, nutrition and resilience*. The Programme's development objective is: *to enhance sustainable productivity, resilience, profitability and commercialisation of selected crop seeds, fisheries and aquaculture*.

1.3 Rationale and Objectives of this ESMF

IFAD's overall objective is for full mainstreaming of environmental, social and climate issues throughout the project cycle. Clear procedures on risk assessment are one important element of this endeavour, to: (i) analyse potential risks and provide information to strengthen the social, environmental and climate dimensions of programmes and projects; (ii) maximize social, environmental and climate change adaptation and mitigation benefits, and avoid or minimize negative impacts; and (iii) increase the consistency, transparency and accountability in decision-making. IFAD's Environment and Natural Resource Management Policy (ENRM, 2011) and Strategy and Action Plan on Environment and Climate Change 2019-2025 stress that project designs present opportunities to improve systematic integration and scaling up of environmental and natural resource management to better respond to climate change. IFAD's Social Environmental and Climate Assessment Procedures (SECAP, 2017) describe how to better mainstream environmental, social and climate change considerations into the project cycle, going beyond "doing no harm" to maximize development gains. In line with IFAD's project cycle processes, a SECAP review note was prepared during design in July 2020.

Most of the proposed interventions will have some significant impacts that can be readily mitigated or remedied, and therefore fall into Category B. These include crop seed development activities (involving small scale irrigation <100ha, seed testing and certification laboratories and a training centre), aquaculture, mariculture involving the establishment of training centres and technologies to improve seaweed farming. However, the proposed tuna fisheries and related processing activities, may have significant environmental and social impacts which may not be easily remedied and would require

more detailed environmental and social analysis, rendering them Category A. The Programme has therefore been accorded Category A.

At this project design stage, the general nature of activities to be supported are known, but specific details of the various interventions are yet to be developed. SECAP requires that in such cases, an Environmental and Social Management Framework (ESMF) must be prepared in order to guide the preparation of Environmental and Social Impact Assessments (ESIAs) or Project Briefs (PBs) / Environmental and Social Management Plans (ESMPs) for the subprojects and interventions.

Tanzania has developed legal frameworks for safeguarding its physical and biological resources. IFAD recognises the need for supporting the Government's efforts to strengthen and use their existing safeguard systems to improve social wellbeing and manage environmental and natural resources.

This ESMF provides guidance to examine the risks and impacts of the various Programme interventions and activities. It sets out the principles, rules, guidelines and procedures to assess the environmental and social risks and impacts. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures and appropriate roles, responsibilities and capacity for managing, mitigating and monitoring environmental and social concerns related to the Programme. It includes information on the area in which activities are expected to be sited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and potential mitigation measures. It also includes institutional mechanisms to allow the lead agencies to implement the recommended measures.

This ESMF therefore:

- Describes standard preventive actions and mitigation measures for AFDP interventions to address any potential adverse environmental or social impacts;
- Presents preliminary screening of proposed AFDP activities, in order to determine the category of the activities/interventions and thereby define the extent to which environmental and social analysis needs to be undertaken;
- Describes implementation procedures for the preparation of ESIAs and ESMPs, submission, review and clearance of ESIA/ESMP documents;
- Describes information disclosure procedures;
- Describes grievance redress mechanisms (both informal and formal channels) to be adopted for resolving complaints;
- Assigns roles and responsibilities of the various actors in implementing the ESMF;
- Recommends capacity building and training measures to ensure that both ESMF and subsequent ESMPs will be effectively implemented;
- Provides an estimated budget for implementation of preventive actions and/or mitigation measures recommended in the ESIAs and Project Briefs/ESMPs, and for monitoring to be included in the overall subproject costs; and
- Makes recommendations for design in order to improve environmental, social and climate-related management during the implementation of AFDP.

1.4 Approach and Methodology used for the Preparation of the ESMF

The preparation of this ESMF has been guided by IFAD's policies and SECAP as well as the United Republic of Tanzania's legal framework for environmental and social management. The ESMF conforms with IFAD's safeguard policies, including its Policy on Disclosure of Documents (2010), Environment and Natural Resources Management Policy (2012) and Social, Environment and Climate Assessment

Procedures (SECAP, 2017) and Strategy and Action Plan on Environment and Climate Change 2019-2025. These are also summarised in Chapter 3.

The ESMF study was undertaken between March and July 2020. The study methodology comprised: collection and review of primary and secondary baseline data; consultations with key stakeholders and Programme area communities; site visits to Morogoro, Pwani, Geita, Tabora and Zanzibar; and report writing.

The project description in this ESMF is as described in the AFDP Project Design Report (PDR) dated July 2020.

The ESMF study team, field itinerary and study timelines are presented in Annex 7.

1.5 Stakeholder Consultations

At the national level, the team met GoT representatives in Dodoma and Dar es Salaam from the Prime Minister's Office (PMO), Ministry of Agriculture (MoA), Ministry of Livestock and Fisheries (MLF); Ministry of Finance and Planning Tanzania Mainland (MOFP-TZ), National Environment Management Council (NEMC), Tanzania Meteorological Agency (TMA), National Bureau of Statistics (NBS), Department of Water Resources in the Ministry of Water (MOW). In Zanzibar, the team met with representatives from the Ministry of Finance and Planning Zanzibar (MOFP-ZNZ), and Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar (MANRLF) and Deep Sea Fishing Authority (DSFA). Other agencies consulted included Tanzania Agricultural Research Institute (TARI), Agricultural Seed Agency (ASA), Tanzania Official Seed Certification Institute (TOSCI), Aquaculture Development Centre (ADC), Tanzania Fisheries Research Institute (TAFIRI), Tanzania Fisheries Cooperative (TAFICO), Zanzibar Fisheries Cooperative (ZAFICO). In addition, discussions were also held with The Nature Conservancy (TNC), the International Union for the Conservation of Nature and Natural Resources, the Indian Ocean Tuna Commission (IOTC), among others.

In addition, discussions were held in the field with crop farmers, agrodealers, sunflower processors, aquafarmers, fishers, and owners of private fishing boats and seaweed farmers.

The list of all persons consulted is presented in Annex 2. Details of the outcomes of consultations are presented in Chapter 6

1.6 Disclosure of this ESMF

IFAD's Policy on the Disclosure of Documents (2010) requires full disclosure to the public, and includes information notes on projects being developed for Board presentation, agreements for approved loans and grants, and project/programme design documents which include ESIA's, ESMF's, RAP's and RAF's. AFDP has been categorised as SECAP Category A; therefore, this ESMF will be disclosed for a period of 120 days on IFAD's official website (<http://www.ifad.org>).

In addition, although disclosure of ESMF's are not provided for under the Tanzania or Zanzibar environmental frameworks, this ESMF will be shared by the Prime Minister's Office (PMO) with the Vice President's Office (VPO) for validation and approval for disclosure. Thereafter, this ESMF will be disclosed on PMO, MoA, MLF and MANRLF websites, and also at the Programme districts, so that all interested parties are able to access the document.

1.7 Limitations and Assumptions

Limitations

The main limitations in the preparation of this ESMF have been:

- This ESMF has been prepared during the COVID-19 pandemic, which has restricted travel to Tanzania by some members of the ESMF team. Nevertheless, site visits were conducted by team members based in Tanzania.
- Due to time limitations and the extent of the Programme area, it was not possible to visit all the potential project regions and locations. Thus, baseline data has been sourced mainly from secondary data. Where available, baseline data has been enhanced with primary data from discussions with key stakeholders and the project design team, and from project design documents (eg. PDR, SECAP review note).
- For the same reasons quoted above, although consultations were undertaken with key beneficiary groups, it was not possible to conduct extensive participatory stakeholder consultations.
- At this stage, while types of interventions have been identified, the exact number and sizes of the various interventions are still to be confirmed. While the interventions and subprojects have been screened for categorisation purposes, due to the large number of interventions and the time limitations to visit all prospective sites, the extent of environmental and social analyses that will need to be prepared for each site cannot be accurately determined at this stage. Therefore, the costs provided for these studies are estimates.
- IFAD's Social, Environmental and Climate Assessment Procedures recommend that, where feasible, a validation workshop is held to present and validate the findings and recommendations of any preparatory studies. In this case, due to the travel restrictions imposed as a result of the COVID-19 pandemic and the reduced number of participants that would be able to attend the workshop, it is recommended that the validation workshop for this ESMF be held during Programme start-up, during which time the ESMF procedures in the Programme Implementation Manual will also be refined.

Assumptions

The assumptions made are as follows:

- This ESMF is intended to be an “umbrella document” to guide the preparation of all environmental, social and climate analyses to be prepared under the Programme. Specific ESIA's and Project Briefs/ESMPs will be prepared for each intervention, as required by their screening category.
- Physical and economic displacement as defined under SECAP's Guidance Statement #13 will not occur, since the sites for markets, aquaculture demonstration sites, etc., will be on government-owned land. Hence there will be no need for FPIC or for preparing resettlement action plans.
- Although indigenous groups exist in the larger Programme regions, their ancestral areas are not located near any of the Programme activities, and therefore the Programme will not affect any indigenous groups.
- The Programme will have a number of knock-on or indirect impacts, such as expanded fishing, expansion in the acreage of land under cultivation (and associated increase in the use of agrochemicals) and establishment of agro-based SMEs. It is assumed that the local authorities, together with NEMC, will be responsible for monitoring and managing any adverse environmental and social impacts due to these activities.

1.8 Report Presentation

This report contains twelve (12) chapters and seven (7) annexes.

Chapter 1 sets the context of the ESMF by describing the background to AFDP, the Programme's goals and objectives, as well as rationale. The methodology for developing the ESMF is described, as well as an overview of stakeholder consultations held. It also presents disclosure requirements for the ESMF, and limitations and assumptions made during the preparation of this ESMF.

Chapter 2 describes the Programme target regions and its components. Chapter 3 summarises the policy, legal and institutional framework for environmental, social and climate-related management in the United Republic of Tanzania. It presents IFAD's Safeguard Policies, describes differences in IFAD and GoT/ZNZ policies and the requirements of international conventions and treaties to which Tanzania is party.

Lessons learned from completed and IFAD-supported projects as well as projects supported by other development are summarised in Chapter 4.

Chapter 5 presents an overview of the environmental and social setting of the Programme regions. Chapter 6 summarises the outcome of the consultations held during the preparation of this ESMF.

Typical environmental, social and climate-related impacts due to AFDP activities and interventions, as well as an overview Environmental and Social Management Plan are presented in Chapter 7.

Chapter 8 discusses climate risk and its implications on the Programme.

Chapter 9 describes the environmental, social and climate change management procedures for AFDP; these procedures are expected to be incorporated into the Project Implementation Manual. Chapter 10 discusses capacity building needed to implement the requirements of the ESMF, while Chapter 11 gives an estimated budget for the implementation of the ESMF.

Chapter 12 summarises the key environmental, social and climate risks and makes recommendations for those risks that should be considered during the Programme development and design.

The Annexes contain: References; List of Stakeholders Consulted; Terms of Reference for the Environmental, Social and Climate Specialist for the PCU; Screening and Categorisation of AFDP Interventions; Guidelines for an Integrated Pest Management Plan; Stakeholder Identification Matrix; and Study Team, Study Itinerary and ESMF timelines.

2 Description of the Agriculture and Fisheries Development Programme

The following description of the AFDPs is based on the Project Design Report (July 2020).

2.1 Overview of the Programme Area Characteristics

AFDP will focus on drier agro-ecological zones (AEZ) with unimodal rainfall of the central Tanzania Mainland corridor, targeting sustainable intensification and diversification of more vulnerable production and farming systems (crops and aquaculture), highly susceptible to climate variability and change. The programme will also promote sustainable fisheries management for improved livelihoods of coastal fishing communities in Zanzibar and Mainland Tanzania. The programme targets a total of 42 districts in 10 regions (as shown in Table 2-1 below) as well as four marine conservation areas in Unguja and Pemba, Zanzibar.

Table 2-1: AFDP Target Areas

Zones	Regions/Marine Conservation Areas	Districts
Central	Morogoro	Mvomero, Kilosa, Kilombero, Gairo Morogoro Council
	Manyara	Kiteto, Mbulu, Babati, Hanang
	Singida	Manyoni, Ikungi, Singida, Mkalama, Iramba
	Dodoma	Kongwa, Kondoa and Chamwino, Bahi, Mpwapwa, Chemba
	Tabora	Igunga, Nzega and Uyui
Lake zone	Mwanza	Misungwi, Kwimba and Sengerema
	Shinyanga	Kahama and Shinyanga
	Geita	Bukombe, Geita, <i>Sengerema</i> and Chato
Coastal	Tanga	Handeni, Kilindi, Pangani, Muheza and Mkinga
	Pwani	Bagamoyo, Mkuranga, Kilwa, Kibaha and Mafia
Zanzibar	Marine conservation areas - Unguja	Tumbatu, Mnemba – Chwaka Bay, Menai Bay
	Marine conservation areas - Pemba	Pemba channel

Source: AFDP Project Design Report, July 2020.

The Programme areas is illustrated in Map 1 above.

2.2 Target Groups and Targeting Strategy

The total number of direct beneficiary households is 363,000 corresponding to approximately 1,815,000 persons. This represents about 15% of the total rural population across the selected regions. These include:

- i. 300,000 small holder farming households accessing, using and maintaining improved seeds for preferred varieties of maize, sunflower and beans/pulses;

- ii. 2,000 small and medium scale seed producers and agrodealers participating in seed distribution and marketing;
- iii. 49,000 artisanal fishers, fish processors and traders along the Indian ocean coast of Mainland and Zanzibar;
- iv. 6,000 small holder aquafarmers;
- v. 15,000 smallholder seaweed producers and processors (80%women), and
- vi. 2,000 unemployed youth who will find employment opportunities in seed and fish value chains.

The targeting mechanism will seek to ensure equitable participation in, and benefits from, programme activities for women, men, youth and other vulnerable groups. These will include smallholder subsistence crop farmers, and fishers, small and medium agro dealers and multipliers, traders, entrepreneurs and other actors involved in the different value chains, based on geographical and poverty targeting, direct targeting and self-targeting, as follows:

The targeting strategy comprises:

- a) Geographic targeting, based on the identification of priority districts;
- b) Self-targeting, with activities geared towards the needs of poor producer households that are engaged in crop and fisheries activities;
- c) Direct targeting of very poor and/or marginalised households, including youth;
- d) Empowerment and capacity building measures to ensure that each target group is able to access the proposed activities; and
- e) Enabling environment and policy dimensions so as to ensure a conducive environment for the project to be implemented and sustainability of its results.

AFDP will target 50% women and 30% youth through its interventions.

2.3 Programme Components

The Programme will comprise two main components, supported by a third component to cover management and coordination of Programme activities. These components are summarised in Table 2-2 below:

Table 2-2: AFDP Components

Component/Subcomponent	Interventions and Activities
Component 1: Enhanced Productivity of crop seeds, fisheries and aquaculture	
The expected outcome of this component is “increased climate-resilient productivity and production from crop seed and fish value chains”. It will be achieved by focusing investments in two sub-components, namely (i) crop seed systems development and (ii) fisheries and aquaculture development.	
Subcomponent 1.1: Crop seed systems development	
National seed demand and supply coordination.	<ul style="list-style-type: none"> • Support to the Ministry of Agriculture (MoA) and the Tanzania Seed Traders Association (TASTA) for future seed demand and supply planning; • Support multi-stakeholder seed sector fora at national level (MoA and TASTA), and small and medium seed production and distribution enterprises/cooperatives; • Facilitate development and effective use of digital platforms for planning, coordinating and monitoring of seed production, supply and sales by different stakeholders including specialized technical studies as required.
Innovation development and Early Generation Seed production	<ul style="list-style-type: none"> • Upgrading facilities for EGS (breeder and pre-basic seed), including irrigation facilities (each farm being 25 ha), farm and post-harvest equipment, scientific/ laboratory equipment, storage facilities, field vehicles for research in maize, sunflower, maize and beans/pulses; • Strengthening institutional capacity and technical expertise in maize, sunflower and bean/pulses varietal improvement and innovative production practices (i.e. CSA);

Component/Subcomponent	Interventions and Activities
	<ul style="list-style-type: none"> Enhancing scientific collaboration with regional and international knowledge centres, especially in germplasm access and market-oriented seed systems development; Strengthening emerging partnerships between TARI and private seed producers/companies, including for variety licensing.
Basic seed multiplication	<ul style="list-style-type: none"> Aligning and consolidating the ASA business plan for the three targeted crops (maize, sunflower, beans/pulses); Securing basic seed production by upgrading/completing of irrigation infrastructures for not exceeding 100 ha each in ASA farmsat Msimba (Kilosa/Morogoro) and Kilimi (Nzenga); Upgrading selected farm work (seed stores, garage facilities); Renewing targeted field production equipment (adapted implements for land preparation, seeding, plant protection and harvesting); Supplying required seed processing treatment and transport equipment; Strengthening ASA business capacities and partnerships with private certified seed multipliers and agro-dealer network.
Bulking-up certified seed	<ul style="list-style-type: none"> Capacity building for certified seed production. Linking private seed producers/SMEs/cooperatives with financial institutions and TADB
Dashboard for seed production	<ul style="list-style-type: none"> Electronic dashboard indicating projections for pre-basic, basic and certified seed in tons/annum
Seed quality control and certification	<ul style="list-style-type: none"> Enhancing technical and management capacities of seed inspectors, samplers and analysts; Strengthening seed quality control and certification procedures and guidelines, including technical support as required; Promoting third party seed certification and data management to strengthen private sector production systems Rolling-out of the electronic systems for digitized authentication of quality seeds by farmers and reduce fake seeds (in collaboration with other partners) Enhancing overall technical and management/ business capacities towards TOSCI self-financing towards International Seed Testing Association (ISTA) standard seed quality control and certification system in Tanzania.
Subcomponent 1.2: Fisheries and aquaculture development	
Development of sustainable artisanal marine fisheries production systems	<ul style="list-style-type: none"> Supporting artisanal fishers to access the recommended gears suitable for sustainable fishing in this zone, ideally to replace destructive gears and aiming to reduce the fishing effort; Promoting selective fishing practices by the use of Fish Aggregating Devices (FADS); Improving the utilization of catch and reduce post-harvest losses; Supporting access to increased quantities of ice for their fishing operations; Strengthening fishers' co-operative organizations and streamline the marketing arrangements and processes from sea to market in order to enhance value of catch.
Private-Public-Producer Partnerships (4Ps) joint venture for fishing in the EEZ	<ul style="list-style-type: none"> Conducting detailed feasibility studies and updating/refinement of existing business for the operation of fully equipped marine fishing investments; Providing technical assistance for structuring of 4P and development of bankable business models; and for brokering partnerships and developing adapted financing instruments; Financing the procurement of a maximum of eight fully equipped marine fishing vessels (18-25 m long liner with 30-45 MT capacity) based on financing instruments and partnership modalities developed above; Financing the formulation/revision and implementation of a sustainable Tuna Fisheries Management Plan including that will include monitoring of stocks and catches on a regular basis.
Increasing aquaculture productivity and output	<ul style="list-style-type: none"> Rehabilitating/developing basic infrastructure for hatchery production (including water supply systems, access roads, hatchery facilities, feed mill and equipment etc.) in 3 ADCs (Kingolwira, Mwamapuli and Rubambagwe); Developing the Kingolwira ADC to become a breeding nucleus for producing quality broodstock to be multiplied in other ADCs and thereafter distributed to private hatcheries for mass production of fingerlings; Strengthening the capacity of ADCs to provide hands-on training on best management practices of aquaculture to aquafarmers and service providers as well as technical support to aquaculture enterprises; Establishing linkages with the small and medium scale enterprises grain millers (possibly linked to the crop seed value chains under the Programme) for the supply of fish feed;

Component/Subcomponent	Interventions and Activities
	<ul style="list-style-type: none"> Supporting extension services and community outreach including use of lead aquafarmers to make aquaculture economically viable and sustainable (e.g. water channels, standard ponds etc.), improved access to inputs, including capacity to produce locally-made feeds, etc.
Increasing mariculture productivity and output	<ul style="list-style-type: none"> Improving the quality of seaweed seeds, by developing capacity to produce high quality seedlings for the two common varieties namely <i>Euchaema cottonii</i> and <i>E. spinosum</i>, through improved vegetative propagation and other technologies; Promoting new seaweed production methods and labour-saving technologies (small boats to access farming grounds in the ocean, and rafts for seaweed farming); Promoting incentives to encourage youth participation, so as to increase productivity Rehabilitating 2 mariculture training centres in Zanzibar, aiming to train 1,000 youth and 15,000 women on improved seaweed farming technologies, with a target to raise production to nearly 20,000 tonnes per year by end of the programme
Component 2: Improved market access, value addition and private sector development	
<p>This expected outcome of this component is “improved marketing and value addition of crop seeds and fish products”. It will be achieved by combining investments in crop seed business development and fish market development and value addition. Support provided under this component will also include innovative modalities to finance technical assistance and productive investments to support production, marketing, and processing activities.</p>	
Subcomponent 2.1: Quality seed use and business development	
Regional multi-stakeholder innovation platforms	<ul style="list-style-type: none"> Facilitating the organization of annual stakeholder platforms of seed value chain actors in each target region; Coordinating planning, implementation and monitoring of regional seed use and promotion activities in selected value chains; Supporting the emergence/strengthening of district and regional professional seed producer organisations for maize, beans and sunflower value chains.
Promoting supply and access to improved seeds	<ul style="list-style-type: none"> Enhancing partnerships with national/regional seed producers (TASTA) and agricultural input importers to strengthen the local agrodealer distribution networks in all targeted districts; Developing further the last link for seeds and inputs to reach local farmers, especially women and youth (village input shops/outlets); Facilitating grouped farmers organisations’ purchases of agricultural inputs; Providing opportunities and financing for young entrepreneurs to participate in seed business and distribution. Linking private agrodealers to these financial institutions for working capital and asset financing (for storage and transportation) to increase their capacity to supply seeds and other inputs to farmers.
Promoting awareness and demand for improved seeds	<ul style="list-style-type: none"> Enhancing farmer exposure to innovative technologies (varieties, best practices for on-farm seed multiplication and preservation), including farmer field schools, on-farm demonstrations, seed samples distribution for on-farm testing, field days, seed fairs, farmer exchange, etc.; Empowering farmer organizations to provide sustainable technical and management services to their members through Village-Based Advisors (M/F local farmer leaders); Leveraging relevant digital platforms and facilitate of broad use of information communication technologies and tools (mobile phones and tablets) for large scale dissemination of quality seeds and improved varieties; Facilitating access to financial services for the farmers and their organizations for the purchase of seeds and other inputs.
Facilitating technical and business synergies for effective market linkages with grain buyers and processors	<ul style="list-style-type: none"> Promoting with large/medium-scale sunflower oil extraction businesses for promoting contract farming, pricing agreement on product quality, use cake for animal/fish feed, etc.; Promoting synergies with commodity whole sellers especially for pulses (but also maize) for contract production, pricing agreements, but also enhancing use of low grades for animal/fish feed; Promoting collaboration with the Pan African Bean Research Alliance for the implementation of bean business corridor through lead firm model nested in private public consortium; Leveraging financing instruments through TADB to finance off takers, grain businesses and processors.
Subcomponent 2.2: Fish market development and value addition	
Reducing post-harvest losses through cost sharing investments in:	<ul style="list-style-type: none"> Eight (8) ice-making plants to ensure fishers have access to ice; Three (3) cold-supply chain facilities and integrated fish processing plant; Ten (10) solar dryers/tents for seaweed and small-pelagic “dagaa”;

Component/Subcomponent	Interventions and Activities
	<ul style="list-style-type: none"> • 80 dagaa drying racks; • Construction of two (2) fish markets to improve quality of fish onshore.
Increasing value/income from aquaculture production	<ul style="list-style-type: none"> • Developing/strengthening the ADC-Farmers clusters and linkages with private sector hatcheries; Establishing aquaculture field/business schools to facilitate learning for fish farmers reaching youth and women; • Enhancing collective marketing strategies; • Expanding market horizon for farmed fish and basic cold chain facilities (e.g. cool boxes).
Seaweed processing and marketing	<ul style="list-style-type: none"> • Conducting market and value chain analysis of seaweed; • Strengthening seaweed clusters and cooperative societies to enhance access to markets and increase the competitiveness of seaweed value chains and identify opportunities for improving the competitiveness of seaweed; • Equipping women cooperatives and groups with seaweed processing and value addition equipment (seaweed drying racks and solar dryers, milling machine/plant, packaging materials) and enhancing their capacity on standards and quality control; • Facilitating the emergence of seaweed small and medium enterprises and their linkages with financial institutions and business service providers; • Promoting the engagement of youth in seaweed value chain activities to increase sector productivity and create employment.
Component 3: Policy Engagement and Programme Management and Coordination	
<i>Subcomponent 3.1: Policy engagement and institutional strengthening</i>	
Policy engagement	<ul style="list-style-type: none"> • Data management • Preparation of Tuna Fisheries Management Plan • Institutional reforms in public institutions (ASA, TAFICO, ZAFICO and cooperative societies) toward business development and 4P business models; • Development of aquaparks approach; • Scaling up strategy.
<i>Subcomponent 3.2: Programme management, coordination, monitoring and evaluation (M&E)</i>	
Implementation Readiness and Start-up Plans	<ul style="list-style-type: none"> • National and regional workshops; • Refinement PIM and Programme design.
Planning, monitoring and evaluation	<ul style="list-style-type: none"> • Preparation of annual workplans and budget; • Activity planning; • Baseline surveys.
Supervision and implementation support missions	<ul style="list-style-type: none"> • Biannual joint supervision and implementation missions.
Mid-Term Review (MTR) and Programme Completion Review	<ul style="list-style-type: none"> • MTR in Year 3; • PCR in Year 6.
Learning and knowledge management (KM)	<ul style="list-style-type: none"> • Preparation of KM strategy involving digital technologies, regular review meetings with implementing partners to discuss progress towards expected outcomes, learning tours and the production and dissemination of a variety of communication products to a wide audience of stakeholders.
<i>Subcomponent 3.3: Emergency response and recovery post COVID-19</i>	
	<ul style="list-style-type: none"> • Support for immediate response to an eligible crisis or emergency, as needed, in coordination with the PMO

2.4 Institutional Arrangements and Responsibilities for Programme Implementation

The overall programme coordination will be under the Prime Minister's Office (PMO), which is responsible for coordinating the implementation of ASDP-II. GoT will appoint a Programme Steering Committee (PSC) to provide strategic guidance and oversight of the Programme. The PSC will be

chaired by the Permanent Secretary PMO and will be composed by the Permanent Secretaries of the ministries in charge of agriculture, fisheries, finance and planning, and local government from the Mainland and Zanzibar, as well as representatives from the private sector and farmers' organizations. The Programme Steering committee will meet twice a year.

The Ministry of Agriculture (MoA), Ministry of Livestock and Fisheries (MLF) and Ministry of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar (MANRLF-ZNZ) are jointly responsible for implementation of the programme. They will establish a joint Programme Technical Advisory Committee (PTAC) to (i) advise the Programme Steering Committee and the Programme Coordination Unit (PCU) on technical issues, (ii) provide oversight of implementation and performance monitoring of the implementing agencies; (iii) follow up on the implementation of PSC decisions and recommendations; (iv) mobilize technical expertise and ensure coordination and synergies with other existing projects and initiatives; and (v) and facilitate policy engagement. The joint PTAC will be chaired by the Director of Policy and Coordination of Government Business in the PMO, to ensure programmatic synergies, integration and coherence between programme components. It will be composed of the relevant Directors from MoA (Policy and Planning, Crop Development and Extension services), MLF (Policy and Planning, Aquaculture and Fisheries) and MANRLF-ZNZ (Policy and Planning and Fisheries) as well as the Ministry of Finance and Planning (MoFP) Tanzania Mainland, and MoFP Zanzibar. It will also comprise two representatives from participating Districts. The PTAC will meet on a quarterly basis in each ministry and jointly twice a year.

Each participating ministry will establish a Technical Working Group (TWG) to review and scrutinize implementation of the programme interventions, and to provide technical guidance to the program implementing institutions and the LGAs. At each ministry the Technical Working Group will be chaired by Director of Policy and Planning from implementing ministries. TWG will have members from Policy and Planning, Aquaculture, and Fisheries, one representative from ADCs and two representatives from participating Districts for MLF. For MoA it will include Director of Policy and Planning, Crop Development, Extension services, one representative from TASTA and two representative from participating Districts. Each ministry will appoint a Focal Person who will be the main points of contact for coordinating technical support to the implementing institutions and LGAs in the project areas. The ministerial technical working group will meet on a quarterly basis in each ministry and jointly twice a year.

The Programme will establish a semi-autonomous Programme Coordination Unit (PCU) under the PMO, to complement existing ASDP II coordination and management structure. It will comprise of the following key staff competitively selected: (i) Programme Coordinator, (ii) Programme Monitoring & Evaluation and Knowledge Management (ME&KM) officer, (iii) Business Development and Value Chain specialist, (iv) an Environmental, Social and Climate Specialist (in the first years of the Programme as required for Category A status) and (v) Finance Officer. A smaller Programme coordination team, comprised of a (i) Team Leader, (ii) value chain development expert and (iii) a finance officer, will be established in Zanzibar under the MANRLF. The PCU will leverage technical expertise in the implementing partner institutions both and central and districts levels and will mobilize technical assistance to provide strategic guidance and oversight on targeting, women and youth empowerment, as well as nutrition targets of the Programme.

Government institutions, namely TARI, ASA, TOSCI, TAFICO, ZAFICO and ADC will be responsible for specific activities and will develop a business and implementation plan for delivering specific results as detailed in the Programme Design Report and the Implementation Manual. Other implementing partners will include TASTA for coordinating seed demand and supply, TADB for facilitating access to finances; SWOFISH and The Nature Conservancy (TNC) for the development and implementation of Tuna Fisheries Management Plans; seaweed production, processing and value addition. The

Programme will also recruit selected service providers for promoting youth entrepreneurship and facilitating linkages with downstream value chain actors, on a basis of performance contracts.

District level programme implementation will adhere to the existing structures, which comprise the District Executive Director, assisted by a District Focal Person, the specialist for fisheries, aquaculture and crop seeds, who will work closely with the existing District Facilitation Team to deliver targeting, nutrition, women empowerment, youth and climate change and environment targets.

3 Institutional, Policy and Legal Framework for Environmental Management in Tanzania

This chapter presents an overview of the institutional, policy and legal framework for environmental management in Tanzania.

3.1 Policy, Legal and Institutional Framework

The United Republic of Tanzania has several policies, legislations and institutional frameworks to regulate and address environmental, climate and social inclusion thematic areas for both sides of the union. This is illustrated below in Table 3-1 for Tanzania Mainland and Table 3-2 for Zanzibar.

3.1.1 Tanzania Mainland

Table 3-1 below illustrates the policy, legal and institutional framework for Tanzania Mainland.

Table 3-1: Policy, Legislative and Institutional Framework for Environment, Climate and Social Inclusion in Tanzania Mainland

Thematic Area	Policies/Legislations/Guidelines/Strategies/ Action Plans	Key Institutions
Environment and climate change	The Environmental Management Act 2004, Occupational Health and Safety Act, 2003, Public Health Act, 2009, Forest Act No. 14 of 2002; Environmental Impact Assessment and Audit (Amendment) Regulations of 2018, Environmental Management (Solid waste Management) Regulation, 2007, Strategic Environmental Assessment Regulations of 2008, The Environmental Management (Water Quality Standards) Regulations, 2007, Environmental Management (Registration of Environmental Experts) Regulations (2005), The Environmental Management (Fee and Charges) (Amendment) Regulations, 2019, National Environmental Policy (1997), National Forests Policy (1988), National Climate Change Strategy, 2012, National Adaptation Programme of Action, 2007, National Integrated Coastal Environment Management Strategy (2003), Disaster Management Act, 2015.	Vice President’s Office - Division of Environment National Environment Management Council National Climate Change Technical Committee and National Climate Change Steering Committee
Agriculture	The Seeds Act, 2003, Village Land Act No. 5 of 1999, Plant Protection Act of 2002, National Land Policy (1995), Agricultural and Livestock Policy (1997), Irrigation Policy (2010), Pesticides Control Regulations, 1984, Industrial and Consumer Chemicals (Management and Control) Act, 2003, Land Use Planning Act, 2007, National Agriculture Policy (2013, Fertilizer(Bulk Procurement)Regulations,2017, Plant Breeders Rights Act of 2012, The Seeds (Control Of Quality Declared Seeds) Regulations, 2020,The	Ministry of Agriculture ASA, TOSCI, TARI

Thematic Area	Policies/Legislations/Guidelines/Strategies/ Action Plans	Key Institutions
	Seeds Regulations, 2007. Agricultural Sector Development Strategy II, 2017, Tanzania Agriculture and Food Security Investment Plan (TAFSIP) 2011-12 to 2020-21, Tanzania Development Vision 2025, Five Year Development Plan 2016/17 – 2020/21, Tanzania Agricultural Research Institute Act, 2016	
Fisheries	Fisheries Act, 2003, Fisheries Regulations of 2005; Marine Parks and Reserves Act, 1994, Water Resources Management Act, 2009, Water Utilization and Sanitation Act of 2009, National Water Policy, 2002, The National Fisheries Policy (2015), The Standards Act No. 2 of 2009. Wildlife Conservation Act, 2009, Marine Parks and Reserve Act, 1994, Territorial Sea and Exclusive Economic Zone Act, 1989, Deep Sea Fishing Authority (Amendment) Act, 2007, Deep Sea Fishing Authority Regulations, 2009, Public Private Partnership Act and Regulations, 2020; . Fisheries (Prohibition of Use of Specified Vessels or Tools) Regulations, 1994, Ports Act, 2004 (No. 17 of 2004), Merchant Shipping Act, 2003, Surface and Marine Transport Regulatory Authority Act, 2001, Merchant Shipping (Licensing of Unregistered Vessels) Regulations, 1990, Public Private Partnership Act, 2010	Ministry of Livestock and Fisheries, Deep Sea Fishing Authority, Tanzania Shipping Agencies Corporation, Ministry of Finance, Bagamoyo District Council, Pangani District Council, Mafia District Council and Kilwa District Council
Nutrition	The National Health Policy 2017, Food and Nutrition Policy, 1992, The Tanzania Food and Nutrition Act, 1973, Tanzania Food, Drugs and Cosmetics Act, 2003, Food Security Act, 1991	Ministry of Health, Community Development, Gender, Elderly and Children Tanzania Food and Nutrition Centre
Gender	Employment and Labour Relations Act, 2004, The National Employment Policy (1997), Policy on Women in Development in Tanzania of 1992; Women and Gender Development Policy of 2000; Community Development Policy of 1996; National Economic Empowerment Policy of 2004; National Land Policy of 1995	Ministry of Health, Community Development, Gender, Elderly and Children, Ministry of Labour, Employment, and Youth Development
Youth	Youth Development Policy, 2007	Ministry of Labour, Employment and Youth Development, Ministry of Information, Culture, Youth and Sports

Relevance of Selected Legislations to AFDP in Tanzania Mainland

Environmental Management Act 2004

Environmental Management Act of 2004 is a framework Act (a comprehensive umbrella) in that it is the legislation governing environmental aspects in Tanzania. The Act includes provisions for; legal and institutional framework for sustainable management of environment; an outline of principles for management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement; and the basis for implementation of international instruments on environment. Under this Act, the minister of Environment has powers to make regulations to enable enforcement of the Act. In this regard, EIA and

Audit regulations of 2005 were formulated and later amended in 2018. These regulations are considered most effective for the achievement of sustainable development because they lay down procedures on how environmental impact assessment shall be undertaken for all proposed activities that are likely to have significant adverse impacts on the environment and which are subject to a decision of a competent national authority. The EIA and Audit regulations have categorized all projects in three groups; Type A, B1 and B2. While Type A projects fall under the list of activities that require full Environmental and Social Impact Assessment, type B1 are those activities which may or may not require full ESIA. Type B2 projects are activities that do not require full ESIA but just preparation of detailed project brief with environmental and Social Monitoring plan. In this regard, all proposed activities under AFDP have been scrutinized and categorized according to relevant groups they belong so that respective studies can be undertaken before implementation. For all activities that are not listed in the regulations, expert's judgement shall be applied to determine whether there is need for environmental studies or not.

Seeds Act (No. 18 of 2003) and its regulations

The Seeds Act applies both to public and private actors in the seed industry and not only delegates regulatory authority and establishes some of the main governmental institutions but also defines the role and duties of seed inspectors, delineates offenses, and establishes penalties for violation of its provisions. The Seeds Act is critical to Tanzania's seed system and lays out the procedure for variety release and registration, certification, seed dealer registration, and general requirements for the importation and exportation of seeds, all of which are elaborated in more detail in the Seeds Regulations of 2007. The Seeds Act and Seeds Regulations touch upon almost all aspects of the seed value chain and provide an important roadmap for the variety release and registration process, certification process, and other regulatory aspects of seed sector development such as packaging, labelling, marketing, and sale of seed.

Since AFDP aims at improved marketing and value addition of seeds value chain in Tanzania, the existing regulatory framework serves to provide an enabling environment for this objective to be achieved. Therefore, the program will be implemented in line with existing laws and regulations governing seed system in the country.

Fisheries Act, 2003

The fisheries Act of 2003 has been put in place to protect the fisheries resources available in natural water bodies from unsustainable exploitation. In line with the Act, the fisheries regulations of 2005 provide guidance on aquaculture development by, among other things, regulating aquaculture and human activities such as restricting import, export and introduction of new species. Since AFDP aims at having sustainable artisanal marine fisheries production systems, the fisheries Act and its regulations form an important legal framework in which the program will be implemented.

Public Private Partnership Act of 2010, and Regulations, 2020

This Act and its Regulations provide for the institutional framework for the implementation of public private partnership agreements between the public sector and private sector entities; to set rules, guidelines and procedures governing public private partnership procurement, development and implementation of public private partnerships and to provide for other related matters. The Act and its Regulations are of particular relevance to the deep sea fisheries subcomponent of this Programme. It requires a preliminary environmental and social analysis at the pre-feasibility stage, and an environmental and social impact assessment at the feasibility stage – the full ESIA and ESMP, together

with a Community Engagement Plan and Resettlement and Livelihoods Protection Plan are required as annexes to the feasibility study.

3.1.2 Zanzibar

Table 3-2 below illustrates the policy, legal and institutional framework for Zanzibar.

Table 3-2: Policy, Legislative and Institutional Framework for Environment, Climate and Social Inclusion in Zanzibar

Thematic Area	Policies/Legislations/Guidelines/Strategies/ Action Plans	Key Institutions
Environment and climate change	Zanzibar Environmental Management Act of 2015, Environmental Assessment Regulations, 2017, Conservation Areas, Reserves, Parks and Sanctuaries Act, 1994, Territorial Sea and Exclusive Economic Zone Act, 1989, Deep Sea Fishing Authority Act, 2007, National Environmental Policy for Zanzibar (2013), The Establishment of Zanzibar Nature Conservation Areas Management unit Act (1999), Forest Resources Management and Conservation Act (1996), National Forest Policy for Zanzibar (1995), National Disaster Management Policy, 2011	1 st Vice President-Department of Environment, Ministry of Land, Water, Energy and Environment, Zanzibar Environmental Management Authority (ZEMA)
Agriculture	Land Tenure (Amendment) Act (2003), Agricultural Sector Policy, 2003 Zanzibar Agricultural Transformation For Sustainable Development, 2010-2020, Zanzibar Vision 2020, Zanzibar Strategy for Growth and Reduction of Poverty III, or MKUZA III, 2016-2020,	Ministry of Agriculture, Natural Resource, Livestock and Fisheries Management
Fisheries	Zanzibar Fisheries Act (2010), Zanzibar Fisheries Policy (2014), Zanzibar Maritime Act, 2009, Territorial Sea and Exclusive Economic Zone Act, 1989, Deep Sea Fishing Authority Act, 2007	Department of Fisheries, Ministry of Agriculture, Natural Resource, Livestock and Fisheries Management, Zanzibar Maritime Authority
Nutrition	Zanzibar Food Security and Nutrition Policy, 2008, Zanzibar Food Security and Nutrition Act, 2011 Zanzibar National Health Policy (2010)	Department of Food Security and Nutrition of the Ministry of Agriculture, Natural Resource, Livestock and Fisheries Management; Ministry of Health
Gender	National Plan of Action to End Violence Against Women and Children in Zanzibar 2017–2022	Ministry of Labour, Empowerment, Elders, Women and Children
Youth	Zanzibar Youth Development Policy, 2005, Youth Employment Action Plan, 2007, Zanzibar Vocational Education and Training Policy, 2005, Zanzibar Employment Policy (2007)	Ministry Youth, Arts, Culture and Sports

Relevance of Selected Legislations to AFDP in Zanzibar

Zanzibar Environmental Management Act, 2015

This Act repealed Environmental Management for Sustainable Development Act Number 2 of 1996. Among other things, the Act established Zanzibar Environmental Management Authority (ZEMA) and

the office of Director of Environment. The function of Director of Environment revolve around implementation of policies, formulation of national strategies and guidelines and coordination as well as implementation of international environmental agreements. On the other hand, the functions of ZEMA include but not limited to undertaking and coordinating enforcement of the provisions of the Act as well as coordinating the Environmental Impact Assessment process for any activity or investment. ZEMA has been given powers by the ACT to approve any project by way of issuing an environmental certificate. EIA regulations formulated under ZEMA Act guide the process of EIA in Zanzibar. All AFDP activities that require Environmental clearance shall be subjected to EIA process as required by Zanzibar Environmental Management of 2015 Act and its EIA regulations.

Zanzibar Fisheries Act, 2010

The Zanzibar Fisheries Act provides for the conservation of fish resources in the territorial waters and EEZ of Zanzibar. It also provides for the protection of artisanal fishing and aquaculture. According to the Act, the term "Fisheries" means all marine and fresh water fishing and cultivation and related activities. The Department of Fisheries and the Marine Conservation Unit is established under the Act for performing the following functions: (a) promote, develop, control and monitor for the purpose of proper management of all fisheries and related activities in artisanal and semi industries; (b) build capacity for effective management of fishing and related activities; (c) administer fisheries activities and all marine products from related industries.

Further, according to Fisheries Act, an Exclusive Economic Zone is a controlled area where fishing by foreigners is not allowed except with the consent in writing of the Minister. Fishing activities at the EEZ is controlled by Deep Sea Fishing Authority. The Act also stipulates Marine Conservation Areas (MCAs) are multiple use marine management areas that are run through "co-management" approaches between the Government and the local communities. Since some of activities under AFDP will be implemented in the EEZ and Marine Conservation areas of Zanzibar, the Zanzibar Fisheries Act and its regulations form important framework under which the program will be implemented.

Deep Sea Fishing Authority Act, 2007

Fisheries in the Exclusive Economic Zone (EEZ) of United Republic of Tanzania is a union matter. The Deep Sea Fishing Authority (DSFA) is an institution established under Deep Sea Fishing Authority Act of 2007. In the absence of a Marine Spatial Plan (MSP) environmental management decisions related to the EEZ are currently made on a sector by sector basis, with overall coordination of environmental management issues done by the Vice President's Office. DSFA is responsible for EEZ fisheries management and associated environmental concerns and mitigation, whereas much of the ecological research priorities and marine conservation activities are catered for by Tanzania Fisheries Research Institute (TAFIRI) and the Institute of Marine Sciences (IMS), within the framework of the IOTC and in cooperation with various NGOs. Shipping and transportation related issues, including registration of vessels are the responsibility of Zanzibar Maritime Authority (ZMA) and the Tanzania Shipping Agencies Corporation (TASAC) for Mainland, while pollution control falls under the NEMC and ZEMA. Therefore, deep sea fishing activities under AFDP will be implemented in line with the provisions of the DSFA Act and its regulations.

3.2 International Conventions and Treaties

Tanzania is party to a number of international and regional conventions and treaties. These are listed below in Table 3-3, together with their key requirements and relevance to AFDP.

Table 3-3: International and Regional Treaties and Conventions

Instrument	Relevance to AFDP	Status
International		
<p>The United Nations Convention on the Law of the Sea, 1982 (UNCLOS); The Convention on Biological Diversity, 1992 (CBD); Convention on International Trade in Endangered Species of Fauna and Flora 1973 (CITES); Convention on the Conservation of Migratory Species of Wild Animals (CMS) 1979; United Nations Fish Stocks Agreement (UNFSA) 1995; The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar) 1971; United Nations Framework Convention on Climate Change (UNFCCC) 1992; United Nations Convention to Combat Desertification (UNCCD) 1996; Convention for Protection of World Cultural and Natural Heritage, 1975; Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1992; Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 2004; Stockholm Convention on Persistent Organic Pollutants POPs, 2004; The Convention on the Prevention of Marine Pollution from ships (MARPOL), 1973; Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972; The Montreal Protocol on substances that deplete the Ozone layer; Bamako convention on the Ban of the Import into Africa and the control of Transboundary Movements of Hazardous Wastes within Africa, 1990; The Kyoto Protocol to United Nations Framework on Climate Change, 2003; The Cartagena Protocol on Biosafety, 2003; FAO Compliance Agreement, 1993; FAO Port State Measures Agreement, 2016; International Convention for Regulation of Whaling (ICRW) 1946, FAO Code of Conduct for Responsible Fishing, 1995; ILO Fundamental Conventions (ie. Forced Labour Convention, 1930 (No. 29); Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87); Right to Organise and Collective Bargaining Convention, 1949 (No. 98); Equal Remuneration Convention, 1951 (No. 100); Abolition of Forced Labour Convention, 1957 (No. 105); Discrimination (Employment and Occupation) Convention, 1958 (No. 111); Minimum Age Convention, 1973 (No. 138); Worst Forms of Child Labour Convention, 1999 (No. 182)</p>	<p>All these international instruments were formulated with the main objective of conserving biodiversity and natural resources for present and future generations, as well as to ensure safe and healthy working conditions for all workers/personnel. AFDP interventions in seed development, fisheries, aquaculture and mariculture have a bearing on these international instruments as there is need to be observed during design and implementation phase.</p>	<p>Tanzania has ratified all these instruments</p>
Regional		
<p>Amended Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean Region, 1996; Indian Ocean Tuna Commission (IOTC) Agreement; AUC- NEPAD Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (2014), African Convention on the conservation of Nature and Natural Resources, (Algiers Convention); Southern African Development Community (SADC) Protocol on Fisheries; Southern Indian Ocean Fisheries Agreement (SIOFA), Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1996); Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, 1994.</p>	<p>All these regional instruments have a bearing to AFDP therefore will be adhered to during design and implementation</p>	<p>Tanzania has ratified all these regional instruments</p>

3.3 IFAD Safeguard Policies

Policy on Improving Access to Land and Tenure Security, 2008

Secure access to productive land is critical to the millions of poor people living in rural areas and depending on agriculture, livestock or forests for their livelihood. It reduces their vulnerability to hunger and poverty; influences their capacity to invest in their productive activities and in the sustainable management of their resources; enhances their prospects for better livelihoods; and helps them develop more equitable relations with the rest of their society, thus contributing to justice, peace and sustainable development (IFAD, 2008).

The Fund's first strategic objective is to help "ensure that, at the national level, poor rural men and women have better and sustainable access to ... natural resources (land and water), which they are then able to manage efficiently and sustainably." Land access and tenure security issues are linked, directly or indirectly, to all the strategic areas of IFAD's interventions.

The IFAD Policy on Improving Access to Land and Tenure Security has been formulated to: (a) provide a conceptual framework for the relationship between land issues and rural poverty, acknowledging the complexity and dynamics of evolving rural realities; (b) identify the major implications of that relationship for IFAD's strategy and programme development and implementation; (c) articulate guiding principles for mainstreaming land issues in the Fund's main operational instruments and processes; and (d) provide the framework for the subsequent development of operational guidelines and decision tools. The policy acknowledges the complexity and dynamics of evolving rural realities and articulates guiding principles for mainstreaming land issues in the Fund's main operational instruments and processes. It also

In the policy, land refers to farmland, wetlands, pastures and forests. Land tenure refers to rules and norms and institutions that govern how, when and where people access land or are excluded from such access. Land tenure security refers to enforceable claims on land, with the level of enforcement ranging from national laws to local village rules, which again are supported by national regulatory frameworks. It refers to people's recognized ability to control and manage land – using it and disposing of its products as well as engaging in such transactions as the transferring or leasing of land.

The main principles of the policy are:

- i. Align with national priorities and support to poverty reduction strategies;
- ii. Adhere to the "do-no-harm" principle at all times;
- iii. Appreciate the diversity and dynamic nature of existing agrarian structures and tenure systems;
- iv. Support the centrality of the empowerment of poor rural people and the organizations that represent them;
- v. Forge complementary partnerships with like-minded actors;
- vi. Focus on the gender dimension of land rights;
- vii. Adhere to the principle of free, prior and informed consent;
- ix. Support to production services and market linkages to maximize the positive effects of access to land and tenure security.

Anchored in this policy are the tenets of Free Prior and Informed Consent (FPIC).

Environment and Natural Resources Policy, 2012

IFAD's Environment and Natural Resources Policy aims to enable poor rural people to escape from and remain out of poverty through more-productive and resilient livelihoods and ecosystems, by integrating the sustainable management of natural assets across its activities and its partners' activities.

The Policy sets out 10 core principles to guide its support, namely:

1. Scaled-up investment in multiple benefit approaches for sustainable agricultural intensification;
2. Recognition and greater awareness of the economic, social and cultural value of natural assets;
3. 'Climate-smart' approaches to rural development;
4. Greater attention to risk and resilience in order to manage environment- and natural-resource related shocks;
5. Engagement in value chains to drive green growth;
6. Improved governance of natural assets for poor rural people by strengthening land tenure and community-led empowerment;
7. Livelihood diversification to reduce vulnerability and build resilience for sustainable natural resource management;
8. Equality and empowerment for women and indigenous peoples in managing natural resources;
9. Increased access by poor rural communities to environment and climate finance; and
10. Environmental commitment through changing its own behaviour.

Social, Environment and Climate Assessment Procedures (SECAP), 2017

SECAP endeavours to ensure that IFAD's goal of enabling poor rural people to improve their food and nutrition security, increase their incomes and strengthen their resilience, particularly to climate change, is done in an environmentally and socially responsible manner. The procedures set the minimum standards for the assessment of social, environmental and climate change risks of IFAD projects which apply throughout the project cycle. The procedures aim to:

- i. Analyse potential risks and provide information to strengthen the social, environmental and climate dimensions of programmes and projects;
- ii. Maximize social, environmental and climate change adaptation and mitigation benefits, and avoid or minimize negative impacts; and
- iii. Increase the consistency, transparency and accountability in decision-making concerning these dimensions of IFAD's results-based country strategic opportunities programmes (RB-COSOPs), country strategy notes (CSNs), and programmes and projects in a timely fashion.

SECAP provides a step-wise description of the processes and guidance to assess risk at each phase of a project or programme cycle, as follows:

- Step 1: Project Concept: environmental and social categorisation and criteria, climate risk classification, nature and sensitivity of project location, significance of impacts, cumulative and induced impacts;
- Step 2: Early Design: environmental and social impact assessment, climate risk analysis;
- Step 3: Late Design: Review of ESIA and Climate Risk Analysis reports and incorporation of recommendations into design;
- Step 4: Loan Negotiations: financing agreement, including clauses, covenants, and provisions for environmental, social and climate related actions;
- Step 5: Board Approval: final ESIA/ESMP report disclosed;

- Step 6: Project Implementation: implementation of social, environmental and climate adaptation/mitigation actions/measures contained in the ESIA/ESMP, RAP, IPP and other relevant loan covenants;
- Step 7: Project completion and ex-post ESIA: analysis of the impact of social, environmental and climate issues arising from project implementation.

Step 1 requires the screening of projects to allocate one of three categories:

- Category A projects may have significant adverse environmental and/or social implications that: (i) are sensitive, irreversible or unprecedented; (ii) affect an area broader than the sites or facilities subject to physical interventions; and (iii) are not readily remedied by preventive actions or mitigation measures. These projects require one or combination of a formal Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Framework (ESMF), Resettlement Action Framework (RAF)/ Resettlement Action Plan (RAP), free, prior and informed consent (FPIC)/FPIC implementation plan and Indigenous People Plan.
- Category B projects are those that may have some adverse environmental and/or social impacts on human populations or environmentally significant areas but the impacts are less adverse than those for Category A, are site-specific and few are irreversible in nature, and can be readily remedied by appropriate preventive actions and/or mitigation measures. While no formal ESIA is required for Category B programmes/projects, in many cases further environmental analysis could be undertaken during project preparation or implementation. In some cases, an ESMF is developed during project preparation or implementation. Category B projects require an ESMP.
- Category C projects generally do not require additional environmental analysis because the activities have positive environmental impacts, or negligible or minimally adverse environmental impacts. They would include, for example, technical assistance grants for agricultural research and training, grants to generate global environmental impacts, research, capacity building and institutional strengthening.

As noted in Section 1.3, the AFD Phas been categorised as Category A.

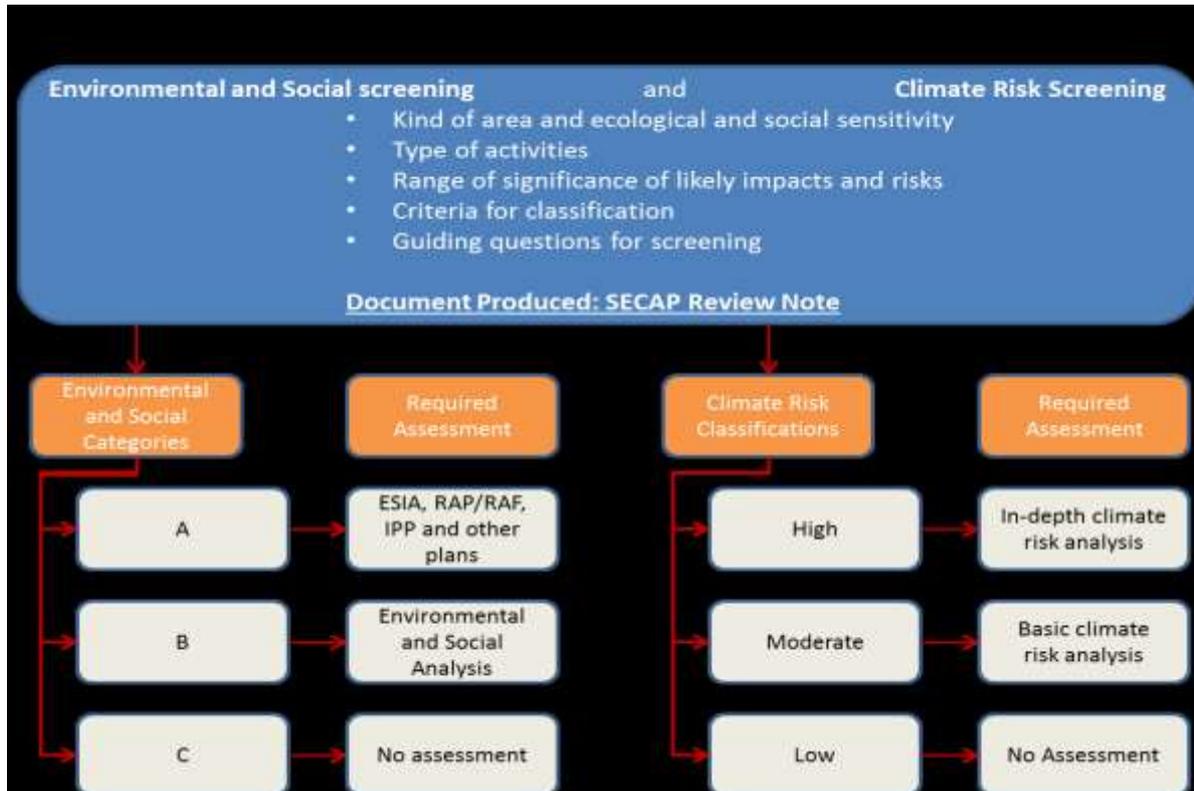
SECAP also provides for climate risk classification based on available information about historic climate hazard occurrences, current climate trends, and future climate change scenarios, as follows:

- High risk programmes or projects can be expected to be highly vulnerable to climate-related hazards and thus would benefit from an in-depth climate risk analysis as part of the design or initial implementation stage. This analysis should include an analysis of GHG emissions and present recommendations for risk management – for example, practical climate risk management measures that can be integrated into the project design and implementation phases and could be used to mobilize climate finance for the co-financing of targeted risk reduction and adaptation/mitigation measures.
- Moderate risk programmes or projects can be expected to be moderately sensitive to climate risks and thus requires a basic integration of climate issues to be undertaken during the project design phase. This process should result in practical adjustments under the project to reduce losses and damages from climate hazards to IFAD's client group and capitalize on opportunities to strengthen local risk-management capacities.
- Low risk programmes or projects are unlikely to be vulnerable to climate risks and thus voluntary measures could be incorporated into the detailed design and implementation phases based on the SECAP project assessment recommendations. These projects generally focus on investments which do not have a direct physical or geographical interface with climate hazards.

The programme is expected to be moderately sensitive to climate risks. SECAP therefore requires that climate adaptation and mitigation measures are integrated into the Programme’s activities, namely enhanced production, distribution and utilisation of quality seeds as well as fisheries and aquaculture development. Chapter 8 of this ESMF presents a basic climate risk assessment.

Figure 3-1 below illustrates the screening process adopted by SECAP.

Figure 3-1: Social Environmental and Climate Screening Flow Diagram



Source: SECAP 2017

SECAP provides 14 Guidance Statements, namely: Biodiversity; **Agrochemicals**; Energy; **Fisheries and Aquaculture**; Forest Resources; Rangeland-based Livestock Production; **Water (Agricultural and Domestic Use)**; Dams, their Safety and SECAP; Physical Cultural Resources; Rural Roads; **Development of Value Chains, Microenterprises and Small Enterprises**; Rural Finance; Physical and Economic Resettlement; and **Community Health**. Those of particular relevance to AFDP are emboldened.

Where physical or economic displacement is envisaged affecting access and user rights to land and other resources, SECAP requires that Free, Prior and Informed Consent (FPIC) is obtained from the affected people, the stakeholder engagement and consultation process is documented, and a resettlement action plan (RAP) or resettlement action framework (RAF) is prepared. In the case of AFDP, agricultural interventions (crop seed development and aquaculture) will take place in semi-rural or rural areas without indigenous peoples or minorities, and will not affect land rights since these interventions involve agricultural technologies, production and value chain development on land belonging to the government or national institutions, or in the case of the aquaculture ponds, will be developed on request from farmers on their own land.

Strategy and Action Plan on Environment and Climate Change 2019-2025

The 2019-2025 Environment and Climate Change Strategy aligns with IFAD's Strategic Framework (2016-2025), responds to commitments to the Eleventh Replenishment of IFAD's Resources (IFAD11) and builds on Social, Environmental and Climate Assessment Procedures (SECAP) and the Adaptation for Smallholder Agriculture Programme (ASAP). Although IFAD has separate policies and strategies for environment and climate change, in practice, it has long addressed them in an integrated way, as have smallholders. The strategy is built around a conceptual framework that reflects IFAD's integrated practice and experience to date, draws on new scientific understanding of the links between climate and environment, including at the livelihood level, and takes into account recent policy developments, notably the Sustainable Development Goals (SDGs). By addressing environmental sustainability and climate resilience in a single strategy, and by incorporating social dimensions in the conceptual framework and where relevant in the strategic actions, the strategy provides the foundation for planned full integration of the environmental and social dimensions of rural development into IFAD's work.

The strategy therefore aims to guide the integration of environmental sustainability and climate resilience into IFAD's programming. It does this by:

- Summarizing the major accomplishments of IFAD's work on environment and climate integration to date, as well as its commitments going forward;
- Describing the changing context in which IFAD works – both within the organization and in its areas of implementation;
- Establishing a vision and conceptual framework for IFAD's approach to environment and climate change;
- Presenting a theory of change, including outcomes and strategic directions for
- the strategy period; and
- Providing an action plan and results management framework.

The main objective underlying this strategy is enhanced resilience of smallholder farmers and rural communities to environmental degradation and climate change impacts. This will ultimately provide the foundation for more prosperous livelihoods today and in the future. IFAD will contribute to meeting this objective through the following outcomes:

- i. Governments are increasingly effective in integrating environment and climate change objectives and considerations into smallholder agriculture and other rural development policies and programmes.
- ii. IFAD has the skills, capacity, partnerships, systems and resources needed to fully support governments in integrating environment and climate change into rural development policies and programmes.
- iii. IFAD investments contribute to the generation of environmental assets and services, and global public goods that make the livelihoods of poor rural people more prosperous and resilient, and IFAD's own operations more environmentally sustainable.
- iv. IFAD becomes a global leader in generating knowledge on managing sustainable rural livelihoods, enabling IFAD to play a greater advocacy role in supporting global efforts to build a healthy planet.

Gender Equality and Women's Empowerment Policy, 2012

IFAD's Gender Policy goal is to deepen the impact and strengthen the sustainability of IFAD-supported development initiatives, in order to increase IFAD's impact on gender equality and strengthen women's empowerment in poor rural areas. The Policy has three strategic objectives:

- Strategic objective 1: Promote economic empowerment to enable rural women and men to have equal opportunity to participate in, and benefit from, profitable economic activities.
- Strategic objective 2: Enable women and men to have equal voice and influence in rural institutions and organizations.
- Strategic objective 3: Achieve a more equitable balance in workloads and in the sharing of economic and social benefits between women and men.

To achieve these objectives, the Policy outlines five action areas aiming to:

- i. Systematically address gender equality and women’s empowerment issues in IFAD-supported country programmes and projects;
- ii. Improve IFAD contributions to advocacy, partnerships and knowledge management on gender equality;
- iii. Strengthen capacity of partners to address gender issues in agriculture and rural development;
- iv. Develop corporate approaches and procedures with IFAD that support gender and diversity; and
- v. Ensure IFAD’s corporate human and financial resources, and monitoring and accountability systems fully support gender equality and women’s empowerment.

Targeting Policy, 2008

IFAD’s mandate defines its “target group” as rural people living in poverty and experiencing food insecurity in developing countries. Within this broad group, IFAD proactively strives to reach extremely poor people (as defined by SDG 1) who have the potential to take advantage of improved access to assets and opportunities for agricultural production and rural income-generating activities (SDG 2). IFAD’s Targeting Policy focuses on improving livelihoods through: ensuring national and international resources are used effectively, policy support is dedicated to rural and agricultural development; encouraging local and national governments to focus on enabling the rural poor to improve their livelihoods; economically and socially empowering rural poor; and encouraging national ownership of interventions.

The Policy’s guiding principles are to:

- Focus on rural people who are living in poverty and experiencing food insecurity, and who are able to take advantage of the opportunities to be offered;
- Expand outreach to proactively include those who have fewer assets and opportunities, in particular extremely poor people;
- Include marginalized groups, such as minorities and indigenous peoples, and address their specific needs;
- Address gender differences and have a special focus on women within all identified target groups – for reasons of equity, effectiveness and impact – with particular attention to women heads of household, who are often especially disadvantaged;
- Recognize that relative wealth or poverty can change rapidly due to external shocks and that this vulnerability needs to be addressed;
- Clearly identify at the programme or project design stage who the intended target groups are and why, and consistently apply these categories, during implementation, in monitoring and evaluation (internal and external) of targeting performance;
- Identify and work with like-minded partners at local, country, regional and international levels to develop a shared understanding of both the dynamics of rural poverty in different contexts and successful targeted approaches;
- Pilot and share learning on successful approaches to targeting hard-to-reach groups; and
- Build innovative and complementary partnerships with actors that can reach target groups that IFAD cannot reach with the instruments at its disposal.

Policy on Disclosure of Documents, 2010

IFAD's Policy on the Disclosure of Documents enables project design documents to be disclosed prior to the Executive Board session at which the project is to be considered. The Consultation also directed the Executive Board to review policy provisions with regard to the disclosure of previously undisclosed documents.

Under IFAD's current disclosure policy, the following documents are disclosed to the public at the same time that they are made available to Executive Board representatives and Governors:

- All documents submitted to the Governing Council (including its Replenishment Consultations);
- All documents submitted to the Executive Board (including the Evaluation Committee);
- Information/status notes on projects being developed for presentation to the Executive Board following internal approval of the inception memorandum;
- Agreements for loans and grants once they are signed and effective;
- Amendments to loan and grant agreements once signed and countersigned;
- Previously undisclosed documents that are eligible for disclosure under the current policy (upon request or as necessary)

All evaluation reports and documentation submitted to the Evaluation Committee are made available to the general public on the website of the IFAD Office of Evaluation (IOE), which is part of IFAD's corporate website. Project/programme design documents are disclosed to the public in their original language prior to the Executive Board session at which the project/programme is to be considered.

The policy also discusses the process for disclosure of previously undisclosed documents, the language of disclosure and appeals.

3.4 Comparison of GoT and IFAD Policy Requirements

A comparison of the Government of Tanzania policies and requirements and IFAD's policies are summarised in the Table 3-4 below.

Table 3-4: Comparison of Government of Tanzanian and IFAD Requirements

Requirement	Tanzanian Environmental and Social Requirements	IFAD SECAP and Other Policies
Environmental and Social Screening and Categorisation	<p>The First Schedule of The Environmental Management (Environmental Impact Assessment and Audit)(Amendment) Regulations, 2018, lists activities/projects as Category A, B1 or B2. Detailed environmental and social impact assessments are mandatory for all projects falling into Category A, while those falling into Category B2 require only a Project Brief to be prepared. Projects falling into Category B1 are considered borderline, requiring further screening according to criteria described in the Second Schedule of the Regulations, based on which a decision will be made on its final categorisation.</p> <p>Interventions supported by the AFDP will fall into both Category A and Category B2.</p>	<p>SECAP assigns Category A to projects located in, or proximate to ecologically sensitive areas such as wetlands, national parks, buffer zones, coral reefs, mangroves swamps, small island ecosystems, areas of global/national biodiversity significance; large scale aquaculture or mariculture projects, or where their development involves significant alteration of ecologically sensitive area; projects that will require significant use of agrochemicals; water based development where it is believed that significant depletion and/or reduce flow may have occurred from the effects of climate change or from overutilization; risk of project-induced pollution on sensitive ecosystems; introduction of potentially invasive species or genetically modified organisms which may</p>

Requirement	Tanzanian Environmental and Social Requirements	IFAD SECAP and Other Policies
		<p>impact on local biodiversity; economic or physical displacement or physical resettlement of more than 20 people or impacting more than 10% of a community's or individual farmer's assets. For Category A projects a formal ESIA, RAP, IPMP, as applicable, are required with ESMP elaboration.</p> <p>Category B projects include; agricultural intensification and/or expansion of cropping area in "non-sensitive areas"; natural resources-based value chain development; artisanal fisheries where there is information on fish stocks, fishing effort and sustainable yield; small-scale aquaculture and mariculture which do not involve significant alteration of wetlands, ecologically sensitive areas and changes in hydrology; natural resources-based value chain development; small and microenterprise development subprojects, including artisanal production; projects involving the development of an agro-processing facility; project activities that may have minor adverse impact on physical cultural resources; economic and physical displacement affecting fewer than 20 people or impacting less than 20 per cent of any one community's or individual farmer's or household's assets; and projects requiring a migrant workforce for construction or seasonal workers for construction, planting and harvesting. Category B projects do not require formal ESIA, but in many cases further environmental analysis is requested during project preparation or implementation in the form of an ESMP which may be a stand-alone document or an output from environmental analysis.</p>
Climate Risk Classification	<p>NEMC's environment procedures list climate as an aspect to be considered as potentially affecting projects.</p> <p>Tanzanian and Zanzibar environmental legislations contain no risk classifications as such. Environment Management Act (2004) notes the importance of climate change and the need for adaptation, and requires the Government to put in place strategies and actions to address it in the context of the United Nations Framework Convention on Climate Change (UNFCCC), and its related Protocol(s). The National Climate Change Strategy (2012) and the Zanzibar Climate Change Strategy (2014) comprehensively elaborate adaptation and mitigation actions. In 2015, the URT submitted its new climate action plan to the UNFCCC.</p>	<p>SECAP provides a Climate Risk Classification methodology which specifies that projects that have high vulnerability to climate risk are for example: projects that establish infrastructure in areas with a track record of extreme weather events; and projects in areas in which rural development projects have experienced weather-related losses and damages in the past. IFAD requires that projects classified as high risk undertake an in-depth climate risk analysis. Examples of moderate risk projects include projects that make use of climate-sensitive resources, but do not focus on these resources as a main commodity; projects which invest in infrastructure not directly exposed to extreme weather events but have potential to become more resilient through adaptation of green technologies; and projects which focus on institutional development and capacity building for rural institutions in climatically heterogeneous areas, where opportunities exist to strengthen indigenous climate risk management capabilities. Low risk projects are</p>

Requirement	Tanzanian Environmental and Social Requirements	IFAD SECAP and Other Policies
		those that are not likely to be vulnerable to climate risks (eg. development of a micro-finance institution). Projects under AFDP are therefore considered to lie within the moderate climate risk category.
Consultations and FPIC	<p>The EIA Regulations(2018) require consultations with key stakeholders at National, District and local level, as well as with the affected communities, and their participation, during the entire EIA process. Concerns and inputs expressed by the interested and affected groups are to be reflected in the EIS.</p> <p>However, there is no provision for free, prior and informed consent.</p>	<p>SECAP emphasises the need for greater consultation by communities (especially the marginalized poor) and stakeholders that are likely to be affected by IFAD’s operations during the respective programme/project cycle, in order to provide input to the project design, receive feedback on the draft ESIA report, ensure broad community support to the project, and to ensure that affected people endorse the proposed mitigation/ risk reduction and management measures.</p> <p>In addition to public consultations, SECAP requires FPIC for all projects that are likely to affect land or user rights to land, whether or not the affected people belong to historically underserved groups or minorities. Since AFDP will not affect land or user rights to underserved groups or minorities, FPIC need not be applied for AFDP interventions.</p>
Compensation and Resettlement	<p>With regard to compensation and resettlement issues, the main pieces of legislation are the Constitution of United Republic of Tanzania, the Land Policy and the Land Acts, as well as supporting local laws and bylaws.</p> <p>Both the Land Act (1999) and The Land Regulations (2001) address compensation as a requirement in the acquisition of land owned by people. Compensation under Section 156 of the Land Act No. 4 of 1999 applies to non-governmental corporate bodies, institutions or groups of persons. This Section requires compensation to be paid to any person for the use of land of which he / she is in lawful or actual occupation, as a communal right of way and with respect to a way leave. These include any damage suffered in respect of trees, crops, and buildings as result of creation of way leave; and damage due to surveying or determining the route of that way leave.The act provides for full, fair prompt compensation to any person whose right of occupancy or recognized long standing occupation or customary use of land is revoked or otherwise interfered with to their detriment.</p> <p>National legislation states that ‘expropriation of land will be done when deemed necessary for public purposes’. It also entitles only those who are ‘landholders’ with legal possession of the land and who own property thereon. Furthermore, the law provides property must be handed over 180 days after compensation has been paid.</p>	<p>IFAD’s Policy on Improving Access to Land Tenure Security stresses the need for Free Prior Informed Consent and the “Do no Harm” Principles. These principles are also reflected in other IFAD policies including the Targeting Policy, Engagement with Indigenous Peoples Policy and Gender Equality and Women’s Empowerment Policy. The core tenets of IFAD’s principles on compensation and resettlement are that wherever possible, any physical or economic resettlement that could negatively impact affected people should be avoided or minimised; that all land and natural resource users with a legitimate claim will be recognised including people having informal/customary rights; and that no affected person should be left worse off, and preferably in a better position through proper and timely compensation and other mitigation measures.</p>

Requirement	Tanzanian Environmental and Social Requirements	IFAD SECAP and Other Policies
	<p>AFDP will not support subprojects resulting in any physical or economic displacement. Land to be acquired for demonstration plots, workshops and stores/sheds will be located on Government and/or institutional land, which will be selected provided no economic or physical displacement will take place.</p>	
<p>Grievance Redress Mechanisms</p>	<p>There is no distinct policy or law providing for grievance redress for any complaints that may arise out of non-compliance of environmental or social actions provided in the ESIA/Project Brief.</p> <p>However, grievance redress mechanisms exist at ward levels for dispute resolution for civil cases. For criminal cases, the police are required to intervene. Should disputes not be resolved at these levels, then the matter is taken to the district magistrate's and high courts. This system can be adopted for AFDP.</p>	<p>IFAD has developed a Complaints Procedure for "Alleged Non-Compliance with its Social and Environmental Policies and Mandatory Aspects of Its Social Environmental and Climate Assessment Procedures". Parties adversely or potentially adversely affected by IFAD-funded projects and programmes may bring issues to the Fund's attention using SECAPcomplaints@ifad.org. Complaints must be put forward by at least two people who are both nationals of the country concerned and/or living in the project area. Complaints from foreign locations or anonymous complaints will not be taken into account. Complaints must concern projects/programmes currently under design or implementation. Complaints concerning closed projects, or those that are more than 95 per cent disbursed, will not be considered. IFAD does not provide monetary compensation to resolve complaints. The IFAD website provides a clear summary of the steps involved and guidance on how to report issues.</p>
<p>Biodiversity</p>	<p>The Environment Management Act 2004 addresses issues of management and conservation of biological diversity. Various environment legislations exist that apply to the conservation of biological diversity, for example, for wildlife conservation, forests and national parks, water resources, etc. The National Biodiversity Strategy and Action Plan NBSAPII (2015-2020) addresses the key concerns regarding biodiversity management in Tanzania. These include, among others, agricultural expansion and urban growth; overexploitation; pollution; invasive alien species; exploration and extraction of oil and gas; climate change; genetic erosion; poverty; the need for economic growth; political and social instability in neighbouring countries; culture and beliefs; inadequate awareness and knowledge; and inadequate policy, legal and institutional response.</p>	<p>IFAD recognises that value chain development projects may offer opportunities for preserving biodiversity by promoting the sustainable harvesting and marketing of products derived from old plant varieties and breeds (e.g. underutilized species), locally used plants (e.g. medicinal plants) and non-timber forest products.</p> <p>IFAD does not implement projects in areas of critical habitats² or which result in conversion or degradation of such habitats. It emphasises the need to identify alternatives and ensure that any potential degradation or conversion is appropriately mitigated. IFAD supported projects are therefore required to protect biodiversity through appropriate design and full community participation.</p>

²A "critical habitat" is identified based on five criteria that address habitat of significant importance to threatened, endemic, congregatory and migratory species, threatened or unique ecosystems, and key evolutionary processes (IFC (2019); Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources).

Requirement	Tanzanian Environmental and Social Requirements	IFAD SECAP and Other Policies
Physical Cultural Resources	<p>in Tanzania Mainland, the Antiquities Act of Tanzania, enacted in 1964 (amended in 1979 and 1985) provides for management, protection, and preservation of movable and immovable tangible cultural heritage resources. The Department of Antiquities at the Ministry of Natural Resources and Tourism is responsible for identification and documenting information related to all know cultural heritage sites in Tanzania. Upon identification of new sites the minister may by notice of government gazette aquire the area and declare it to be conserved area.</p> <p>In Zanzibar, The Conservation and Development Authority Act of 2010 provides for protection of cultural resources in Zanzibar town.</p>	<p>In cases where physical cultural resources are found, IFAD assists borrowers in avoiding, minimising or mitigating adverse impacts on PCR in the development programmes/ projects that it finances. Due diligence is carried out through applying SECAP to ensure that PCR are properly identified and adequately addressed and that any measures to protect PCR comply with the borrower’s national legislation as well as with its obligations under relevant international treaties and agreements. SECAP prescribes general steps for programmes/ projects that apply in cases involving PCR: screening; collecting data; assessing impacts; and formulating mitigating measures.</p>
Public Disclosure	<p>The Government of Tanzania does not have public disclosure policy. However, the EIA Regulations (2018) provides for NEMC to call for a public hearing and public review of the EIS.</p>	<p>IFAD’s Policy on the Disclosure of Documents (2010) requires full disclosure to the public, and includes information notes on projects being developed for Board presentation, agreements for approved loans and grants, and project/programme design documents which include ESIA’s, ESMF’s, RAP’s and RAF’s.</p>

The key differences between GoT and IFAD policies and requirements are the GoT framework does not specifically provide climate risk categorisation or FPIC; and there are differences in regard to entitlement and procedures for compensation and resettlement and livelihood restoration where physical and economic displacement may occur.

4 Lessons Learnt

4.1 Lessons from IFAD-Supported Projects

Marketing Infrastructure, Value Addition and Rural Finance Support Programme (MIRVAF) and Rural Micro, Small and Medium Enterprise Support Programme (MUVI)

In Tanzania, the use of improved seeds (especially maize hybrids) has increased dramatically since 2008, primarily pushed by the national agricultural input voucher scheme (NAIVS/AFSP, 2008-13), targeted on maize and rice in the high potential highland areas, while more vulnerable agro-ecological zones and companion crops remained neglected. IFAD projects in Tanzania (MIRVAF and MUVI) supported to the introduction of Quality Declared Seeds (QDS) approach for sunflower, beans and sesame contributed to increasing the awareness of farmers on the availability of quality and affordable seeds and planting materials. Despite all of these efforts, a sustainable and reliable supply chain for quality seed has not emerged. However, multiplication and use of improved varieties remains low (lack of Early Generation Seeds) and volumes tend to be low and supply dwindles in the absence of project funding. Despite support provided over more than 20 years, this has not addressed systemic and structural challenges of seed supply. AFDP design builds on lessons learned from MIRVAF and MUVI. It also builds on IFAD's global and extensive experience in promoting pro-poor agricultural value chains. AFDP adopts an inclusive agricultural value chain approach that, beyond productivity and production, invests in linking smallholder producers to more profitable markets, and building their capacities to graduate from artisanal fishing and subsistence farming to semi-subsistence/semi-commercial status, practicing farming as a business.

Artisanal Fisheries Promotion Project (ProPESCA)

This Project entered began in March 2011 and completed in March 2019. Its goal was to improve incomes and livelihoods of poor households involved in artisanal fisheries in the selected growth poles in coastal areas of Mozambique. The development objective purposed to increase the returns from fish sales for artisanal fishers and small-scale operators engaged in both capture fisheries and aquaculture on a sustainable basis. The project approach was based on the following key principles or pillars: (i) diversification in artisanal fisheries, (ii) development of the value chain for higher value fish, (iii) focus on growth poles, (iv) promoting social and spatial inclusion, and (v) facilitating the development of sustainable financial services. The combination of capacity building activities for fishers, traders, processors in capture, handling, processing, and conservation and the improved access to fishing inputs (eg. ice, electricity, better access roads, etc.) contributed to improved fisheries productivity (more catch and reduced waste) and increased incomes. ProPESCA has cumulatively achieved some notable results and outputs in key interventions in fish value chain, financial services, improved nutrition and connectivity (access roads and electricity). Fish production and catch levels increased, reduction in post-harvest losses as a result of introduction of improved fish handling, preservation and processing facilities and techniques, as well as increased incomes to fish traders. ProPESCA has enhanced women's access, in general, and young women in particular, to markets, finance and other key services, including infrastructure that are key to their improved livelihoods and economic empowerment. Presence of youth is found along links of the fish value chain: young fishermen, traders, mechanics, boat carpenters. The improved fishing gears, technologies and sensitization on good NRM have contributed to reduce pressure on coastal ecosystems (i.e. mangroves). This is a positive factor to mitigate adverse impacts (i.e. coastal erosion or sea level rise) which are exacerbated by climatic changes.

4.2 Lessons from other Development Partner Projects

Agriculture Sector Development Programme I

Thinly spread resources result in fragmented impact that is hard to measure. ASDP I faced implementation challenges and generated limited impact due to the scale and complexity of implementing a new programme nationally. An analysis of the World Bank portfolio in Tanzania shows that the most effective programs were generally specific, large investments or interventions, geographically targeted, backed with sound analytics, and supported by robust systems for quality assurance and quality control. AFDP investments will be: (i) programmatically focused on the two ASDP II priority areas; (ii) thematically targeted to the crop seeds and fish value chains, and (iii) geographically focused in the arid and semi-arid lands in central, western and lake zones areas, which are particularly vulnerable to CC and where pockets of food insecurity persist.

Mainstreaming business approach to agriculture. An evaluation of ASDP I showed that agriculture value chains are underdeveloped and fragmented. AFDP will contribute in bridging the gap between agricultural production and marketing, with a focus on business innovations benefiting women and youth along the value chain.

South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFISH)

SWIOFISH is a six-year (June 2015-September 2021) World Bank financed regional Project, which aims at improving the management effectiveness of selected priority fisheries at regional, national, and community levels. The project covers Tanzania, Mozambique, and Comoros. In Tanzania, SWIOFISH project focuses on priority fisheries and is jointly implemented by MLF, MANRLF, and DSFA. The selected priority fisheries in Tanzania are Tuna and tuna-like species (eg, swordfish, kawakawa, skipjack, shark), prawns, reef fish, small and medium pelagic species, aquaculture/mariculture (including seaweed) associated with the coast, and Octopus. After four years of implementation, the project has attained the following significant results: i) general decline in blast fishing; ii) ratification of the Port State Measures Agreement (PSMA)³ in November 2019; iii) Increased controlled fishing activities via vessel registration and fishers license; iv) Developed standards for Small Pelagic; v) Increased knowledge and adherence to sustainable marine fisheries including 3 Fisheries Management Plans (Reef fish, Small Pelagics, and Octopus) implemented in 50 villages; vi) formalization of 32 BMU by way of registration; vii) Increased fish catch (species and size) due to decline of blast fishing activities or use of unauthorized fishing gears; and viii) Increased revenue generated from fisheries resources as a result of using BMU in collection at LGA level. Despite significant achievements, the project encountered the following challenges: delay in procurement of goods and services as well as delay in commencement of research projects. Research activities include stock assessment (biometrics, catch per unit effort, spatial and temporal distribution, population structure), impact of closures on fisheries, determining biomass and maximum sustainable yield, determining by-catch species. Preliminary assessment of project impacts reveals that (i) temporary closures are an effective management tool for sustainable fisheries since biomass and catch rates for the closed sites are higher compared to open areas; (ii) fishers are generally happy with closures (reef closures in the case of octopus) since they get more during opening season; (iii) better community governance and coordination with buyers is needed during reef opening period in order to avoid spoilage of the high harvest (due to inadequate uptake by buyers) and reduce concentrated fishing

³ PSMA is a binding international agreement that targets illegal, unreported and unregulated (IUU) fishing and its objective is to prevent and deter IUU fishing by prohibiting vessels engaged in IUU fishing from using ports and landing their catches. This milestone will contribute to more sustainable management of fisheries in the South West Indian Ocean region.

pressure at certain sites; and (iv) by-catch continues to be an issue that would require management, especially if Tanzania proceeds to certify its fisheries products.

AFDP will capitalize on the achievements, physical assets and collaborative management approaches of coastal resources in both mainland and Zanzibar. In addition, the programme will build upon the findings of the different studies financed by SWIOFISH, particularly the results and recommendations from the analysis of stock structure and genetic connectivity of tuna and tuna-like species in Tanzanian EEZ and Territorial and research on oceanographic factors influencing distribution of tuna and tuna-like species in the Tanzanian waters.

Sustainable Fisheries Livelihoods Programme (SFLP)

The Sustainable Fisheries Livelihoods Programme (SFLP: 1999 – 2007) was a partnership between the Food and Agriculture Organization of the United Nations (FAO), the Department for International Development of the United Kingdom of Great Britain and Northern Ireland (DFID) and 25 participating countries in West and Western Central Africa. SFLP aimed to contribute to reducing poverty in coastal and riparian communities by improving the livelihoods of people dependent on fishery and aquatic resources.

An important lesson from the SFLP was the affirmation of the value of applying new working methods to address the issues relating to the promotion of responsible fisheries and poverty reduction in fishing communities. Many consider these to have opposing objectives. Thus many approaches to fisheries management sought to control access or reduce effort, potentially marginalizing or excluding the poor from access to resources. Conversely an aim to increase incomes of fishing communities through increased exploitation of resources can threaten sustainability. The SFLP approach attempted to challenge this assumption, essentially by proposing that poverty needs to be addressed through a wider perspective than that of resource exploitation alone. Addressing poverty is not necessarily about increasing incomes through increasing fish catches, but about understanding and dealing with vulnerability, and exploring wider livelihood options, in and outside the sector. It is also about improving access to services to reduce vulnerability and ensuring the inclusion of stakeholders and marginalised groups in institutional processes. Applying this perspective, experience within 25 West and Central African countries has shown that not only it is possible to reconcile poverty reduction and responsible fishing together, but it is necessary to tackle them both for the long term sustainability of fisheries livelihoods. AFDP will promote sustainable fisheries management for improved livelihoods of coastal fishing communities in Zanzibar and Mainland Tanzania, recognising the need to ensure participation by vulnerable groups and poor producer households that are engaged in fisheries activities.

5 Environmental and Social Overview

This section provides an overview of the environmental and social setting in the intervention areas and, unless otherwise referenced, is drawn mainly from the Third Report on the State of the Environment Report 2019 (SoER3)⁴ and the Tanzania Water Resources Atlas (2019)⁵. It will be noted that the subproject ESIA's and Project Briefs will provide more focussed environmental and social baselines pertaining to the subproject/intervention areas.

5.1 Administrative Structure

The administrative structure of Tanzania Mainland as per is organized such that there is the Central government and local government authorities. The Central Government encompasses Ministries, Independent Departments and Executive Agencies while the local government entails regional secretariats followed by District Councils. Under the district level of administration there are Wards, followed by Villages/Streets. In some instances, there are Sub-villages (Kitongoji) below the Village level. The Ministry of Regional Administration and Local Government (MRALG) oversees regional administration by coordinating rural and urban development policies and strategies as well as the activities of Regional Secretariats.

There is a similar administrative structure in Zanzibar although each side of the Union has their own legislations governing these matters. Further, all matters to do with regional administration and local government in Zanzibar is under the Ministry of Regional Administration, Local Government and Special Departments (MRALGSD-ZNZ).

AFDP will be implemented at various levels: Ministry departments, Agencies and District Councils. The Prime Minister's Office will play a coordination role and will host the Project Coordination Unit. The institutional responsibilities of each implementing agency or department have been summarised in Section 2.4. However, these will be described in detail for all levels in the Programme Design Report and Programme Implementation Manual.

5.2 Physical Environment

5.2.1 Climate, Rainfall and Temperature

The climate of Tanzania is characterized by bimodal and unimodal rainfall regimes. The northern part of the country including areas around Lake Victoria Basin (Mwanza, Kagera, Mara, Shinyanga, Geita and Simiyu), North-Eastern Highlands (Kilimanjaro, Arusha and Manyara) and the Northern Coast (Dar es Salaam, Tanga and Northern Morogoro) experience two main rain seasons (bimodal) namely, long rains (Masika) which normally begins in mid-March and end at the ends of May and short rains (Vuli), which begins in mid-October and continues to early December. The Central part of the country (Dodoma and Singida), the Southern part (Ruvuma, Lindi and Mtwara), the Western areas (Kigoma, Tabora, Katavi and Rukwa) and South-western Highlands (Mbeya, Njombe, Iringa and Southern Morogoro) have a prolonged unimodal rainfall regime that start in November and continues to the end of April. These rain seasons are associated with the southwards and northwards movement of the Inter-tropical Convergence Zone (ITCZ).

⁴URT (2019). State of the Environment Report. VPO.

⁵URT (2019). Tanzania Water Resources Atlas. Ministry of Water.

Tanzania's topographical diversity gives rise to four distinct climate zones namely: 1) hot and humid coastal belt including the Zanzibar archipelago, which has the warmest temperatures, averaging 27–30°C, and receives 750–1,250 mm of annual rainfall, with Zanzibar receiving 1,400–2,000 mm; 2) hot and arid central plateau, which receives just 500 mm of rainfall; 3) cooler semi-temperate high lakes region in the north and west which receives 750–1,250 mm of rainfall annually; and 4) highlands of the northeast (i.e., Kilimanjaro) and southwest including the coldest parts of the country with average temperatures of 20–23°C⁶.

Along the coast and in the off-shore islands the average temperatures ranges between 27°C and 29°C, while in the central, northern and western parts temperatures range between 20°C and 30°C. Temperatures are higher between the months of December and March and coolest during the months of June and July. In the Southern highlands and mountainous areas of the north and northeast, temperature occasionally drops below 15°C at night, and in the cold months on June and July sub-zero temperatures can also be experienced.

Increasing temperatures, longer dry spells and more frequent and intense rains put crop and livestock production in Tanzania at risk. The agricultural sector makes up about 25 % of GDP and employs 75–80% of the population. About 80% of agricultural production comes from rainfed, low-input smallholder farms highly vulnerable to weather variability. One third of crop land (roughly 4 million hectares) is devoted to maize, which accounts for 40% of caloric intake nationally. While increasing temperatures may benefit rainfed maize in the highlands, national production is projected to decrease 8–13% by 2050 due to increased heat stress, drying, erosion and flood damage⁷.

5.2.2 Landscapes

Tanzania's major landscapes comprise:

- i. Coastal Plains that extend along the coastline of Tanzania Mainland for about 800 km long from the border with Kenya in the north, to the border with Mozambique in the South;
- ii. Plateaux in the central area of the country (includes the national capital, Dodoma), and is part of the East African Plateau that ranges between 1,000 and 1,500 meters above sea level (masl);
- iii. Highlands and mountains that include the Usambara and Pare Mountain ranges, widely known as the Eastern Arc Mountains; Southern Highlands, which include the Livingstone, Kipengere, Udzungwa and Uluguru Mountain ranges; Mt Meru (4,565 masl) and Mt Kilimanjaro (5,895 masl), the highest point in Africa;
- iv. The Great East African Rift Valley composed of two branches namely; the eastern branch that runs eastward through central Tanzania and includes Lake Natron, Manyara and Eyasi; and the western branch that includes Lake Nyasa, Rukwa and Tanganyika.(VPO, 2015)

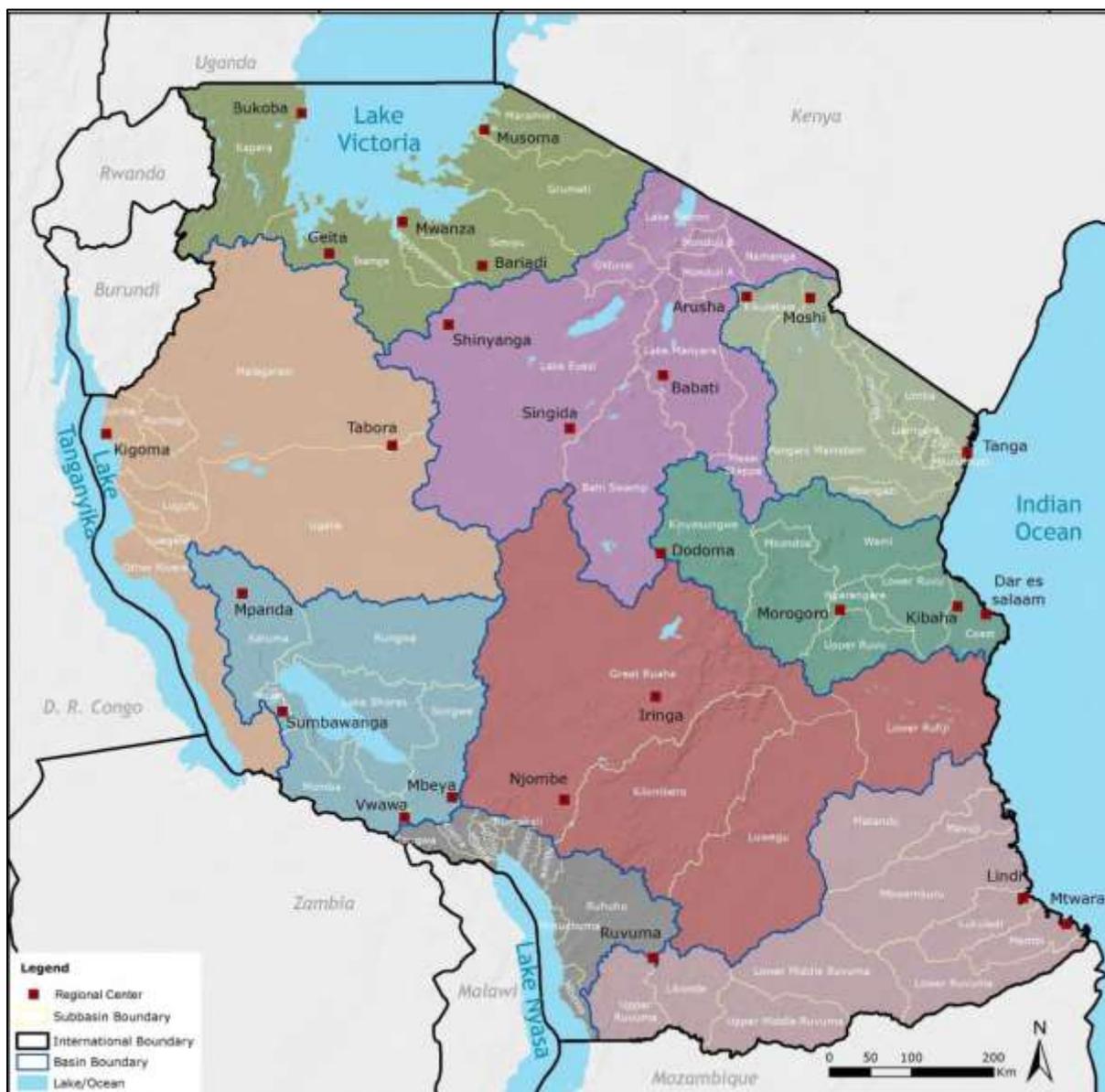
5.2.3 Water Resources

Tanzania is divided into five major drainage systems: the Indian Ocean Drainage System; the Internal Drainage of Lakes Eyasi, Natron and Bubu Depression Complex; the Internal Drainage of Lake Rukwa; the Atlantic Ocean Drainage; and the Mediterranean Sea Drainage System. These systems have been further divided into nine river and lake basins: Pangani Basin, Wami/Ruvu Basin, Rufiji Basin, Ruvuma and the Southern Coast Basin, Lake Nyasa Basin, the Internal Drainage Basins of Lake Eyasi, Manyara and Bubu depression, Lake Rukwa Basin, Lake Tanganyika Basin, and Lake Victoria Basin. The Programme regions fall into five of these basins, namely: Pangani, Wami/Ruvu, Internal Drainage Basin, Lake Victoria and Lake Tanganyika. These are shown in Figure 5-1 below. The main rivers in the country are the Pangani, Rufiji, Wami, Great Ruaha, Malagarasi, Ruvu, Bubu, Mara, Ruvuma Rivers.

⁶USAID (2018). Climate Risk Profile: Tanzania

⁷Ibid.

Figure 5-1: Drainage Basins



Source: URT, Ministry of Water, Water Resources Division.

Current annual renewable surface water and ground water resources for the entire Tanzania mainland is estimated as 125,763 MCM of which 104,568 MCM is surface runoff and 21,195 MCM ground water recharge. At basin scale, Rufiji Basin has got the largest renewable surface and ground water resources, while Wami/Ruvu Basin has the smallest. Based on water stress index, Internal Drainage Basin and Wami/Ruvu Basin are experiencing water scarcity and absolute water scarcity, respectively. This index in 2019 stands at 2,250 m³/capita/year for the entire Tanzania mainland. The table below shows basin wise renewable water availability in Tanzania Mainland.

Table 5-1: Basin-wise Renewable Water Availability in Tanzania Mainland

Basin	Renewable Water Availability (MCM/year)		Total Water Availability (MCM/year)
	Runoff	Groundwater recharge	

Internal Drainage	6,084	884	6,968
Lake Nyasa	12,775	107	12,882
Lake Rukwa	9,288	2,137	11,425
Lake Tanganyika	10,641	2,755	13,396
Lake Victoria	11,700	1,327	13,027
Pangani	7,383	587	7,970
Rufiji	31,000	9,021	40,021
Ruvuma and Southern Coast	11,709	3,238	14,947
Wami/Ruvu	3,988	1,139	5,127
TOTAL	104,568	21,195	125,763

Source: Tanzania Water Resources Atlas (2019)

* Water Basins within the AFDP area are shaded.

While future river flows will be highly influenced by nonclimate factors such as changes in land use, climate projections indicate increased runoff for the Pangani and Rufiji Basins, which will increase risk of flooding and sedimentation, and decreased runoff for Wami/Ruvu basin, which will increase water stress in Dar es Salaam, Morogoro, Kibaha and Dodoma (with a combined population of more than 6 million). Water availability will also depend on the development of rivers upstream by neighboring countries, as 13% of Tanzania's renewable water resources are transboundary⁸.

Ground water potential in the country is variable. However, it is one of the major sources of water, particularly in the semi-arid zones. About 75 % of the country is underlain by the Pre-Cambrian Basement Complex which is hard, consolidated and occasionally metamorphosed. Secondarily developed features of the Basement Complex, such as weathered zones, joints, fractures, faults and dykes allow borehole development and yield ranges up to 3 l/s⁹. Regions that are considered within arid and semi-arid zones are Dodoma, Singida, Tabora, Shinyanga and parts of Geita. As seen from the table above, some of the AFDP areas where crop seed development is proposed are considered water stressed, and therefore adoption of conservation agriculture methods, measures to ensure efficient water use and conformity with permitted abstraction limits will be important for the sustainability of these interventions.

5.2.4 Soils

There are six main types of soil types in the country and some 30 soil groups. Volcanic soils are found in the northern highland regions. Sandy soils are found predominantly in the coastal regions and used mainly for grazing. The Northern regions of Mwanza and Tabora have mainly granite/gneiss soils while red soils dominate the Central Plateau, including the Dodoma Region. Ironstone soils are found in the western Regions including Kagera and Kigoma. Mbuga black soils are vertisols that are spread across most of the country.

5.3 Biological Environment

5.3.1 Terrestrial Ecosystems

Terrestrial ecosystems include forests, mountains, drylands, savannah and agricultural lands, all of which is covered by various vegetation. Tanzania vegetation ranges from grasses to shrubs, miombo woodland and montane to rich forests that contain more than 2,000 plant species. The most typical vegetation is the dry grassland scattered with thorny scrub and acacia that is found along the Eastern

⁸USAID (2018). Op. Cit.

⁹URT (2005). National Water Sector Development Strategy – 2006 to 2015; Ministry of Water, Dar Es Salaam.

Plateau, which makes up most of the country's land area. This area includes open grasslands, savanna as well as woodlands and comprises the Serengeti Plains.

The total forest area is about 48.1 million ha with three major types of natural forests: i) miombo woodlands, ii) montane forests and ii) mangroves. The country has more than 20 million ha in the miombo ecosystem - a belt of miombo woodland stretches in southern and western Tanzania and is characterised by brachystegia, acacia and baobab trees. Tanzania's montane forests cover some 2 million ha, most of which is located in the Eastern Arc Mountains, forming an unbroken range between 50 and 200km inland. Mangrove forests (along the coastal belt from Mtwara region to Tanga Region covers more than 115,000 ha of land stretching over more than 800 km. In Zanzibar the coral rag forests of Jozani and Ngezi are under formal protection.

5.3.2 Coastal and Marine ecosystems

Tanzania has a territorial sea of 64,000 km² (6.4 millionha), an Exclusive Economic Zone (EEZ) covering an area of about 223,000 km² (22.3 millionha) and a coastline of about 1,424 km. Coastal and marine ecosystems occupy an area of 241,500 km² or about 20% of the total land area of the country. The coastline is characterized by diverse coastal and marine ecosystems such as coral reefs, sea grass beds, mangroves, sandy beaches, rocky shores, numerous islets and terrestrial coastal forests which offer a diverse of ecosystem goods and services to the communities. All mangroves areas are gazetted, and cover 115,500 ha on Tanzania mainland and 18,000 ha on Zanzibar. A wide range of important and valued species are found along the coast, including an estimated 150 species of corals in 13 families; 8,000 species of invertebrates; 1,000 species of fish; 5 species of marine turtles, 428 species of seaweeds and 44 species of marine birds. Coral reefs present one of the most productive and biologically diverse marine ecosystems hosting over 500 species of fish and other invertebrates, making them an important fisheries resource supporting about 90% of artisanal marine fisheries covering about 3,580 km²¹⁰.

5.3.3 Tanzania's Exclusive Economic Zone

An exclusive economic zone (EEZ) is an area which is beyond, and is adjacent to, a given country's territorial seas, and extends no more than 200 nautical miles (370 km) out from a country's own coastlines. The United Republic of Tanzania EEZ covers over 240,000 km² and a coastline of about 800 km. The EEZ has economic importance as, in addition to setting boundaries, it also supports livelihoods derived from fisheries, natural gas reserves and tourism.

The marine fisheries are conducted within territorial waters, which extend up to 12 miles, and in the EEZ. Almost all of the activities takes place in water depths of less than 500 metres and within 40 miles from the coast. The coastline has a length of 1,424km, with almost all coastal communities engaged in fishing to some extent. Main commercial marine species are sardine, tuna and Tuna-like species, which together forms 30-50% of the total fish landing. Other fish species being landed include:- Emperors/Scavenger (Changu), Snappers (Fuatundu), Parrotfish (Pono), Carangidae (Kolekole), Rabbit fish (Tasi), Tuna (Jodari), Kingfish (Nguru), Mackerel (Vibua), Sharks (Papa), Rays (Taa), Lobster (Kambakochi), shrimps (Kamba miti), Sardines (Dagaa) and Octopus (Pweza).

5.3.4 Protected Areas

Tanzania has a total of 17 gazetted national parks which comprise a total area of 61,950km². These include: Arusha National Park, Gombe Stream National Park, Katavi National Park, Kilimanjaro National

¹⁰ URT (2015). National Biodiversity Strategy and Action Plan 2015-2020, Vice Presidents Office Division of Environment, Dar es Salaam. Available at: <http://tawiri.or.tz/wp-content/uploads/2017/08/national-biodiversity-strategy-and-action-plan-2015-2020.pdf>

Park, Kitulo National Park, Lake Manyara National Park, Mahale National Park, Mikumi National Park, Mkomazi National Park, Ruaha National Park, Rubondo Island National Park, Saadani National Park, Saanane Island National Park, Serengeti National Park, Tarangire National Park and Udzungwa Mountains National Park. In addition, the country has 28 game reserves covering an area of 117,755.4 km². Game reserves are wildlife protected areas which are declared for the purpose of conservation. Consumptive and non-consumptive wildlife utilization is allowed after obtaining permits. These game reserves are famously known in Africa as areas for variety of activities. Selous is the largest game reserve covering an area of 50,000 km² which is about 42.5% of the total area under game reserves. The remaining game reserves individually constitute less than 10% of the total game reserve area. Unguja Island has five protected areas: Jozani Chwaka Bay National Park, Ngezi Forest Reserve and Kiwengwa/Pongwe Forest Reserve, Masingini Forest Reserve and Jambiani Forest Reserve, while Pemba has four: Ngezi-Vumawinbi Nature Reserve, Msitu Mkuu Forest Reserve and Ras Kiuyu Proposed Forest Reserve^{11, 12}.

The URT has a total territorial sea of approximately 61,000 km²¹³, of which Mainland Tanzania has gazetted Marine Protected Areas (MPAs) totalling 2,173 km². These areas include three (3) Marine Parks and fifteen (15) Marine Reserves. Zanzibar has six marine conservation areas (MCAs) covering approximately 2,100 km², namely: Menai Bay Conservation Area, Mnemba-Chwaka Bay, Pemba Channel Conservation Area, Chumbe Island Coral Park Sanctuary, Tumbatu Marine Conservation Area and Changuu-Bawe Islands Marine Conservation Area¹⁴. In addition, the Pemba Channel Conservation Area lies along the length of the west coast of Pemba Island.

5.3.5 Fisheries

Freshwater fisheries account for 85% of the total country's fish production, while the remaining 15% is from the marine waters. The Tanzania marine fishery comprises several tuna and tuna like species and sharks in its internal, territorial and Exclusive Economic Zone (EEZ). Domestic fleets targeting marine fish species in Tanzania are made up of artisanal multi-gear and multi-species fisheries operating in the shallow internal and territorial waters. The main gears are manually handled drift nets and anchored gillnets, ring nets, hand line, purse seiner and long lines. Most of the fishing vessels range from 3 to 11 meters long. Artisanal fishers' fleets for tuna and tuna-like fishing are unable to access tuna-like resources in deep water because of low capacity in terms of vessel size and technology. Industrial fisheries in the EEZ are conducted by Distant Water Fishing Nations (DWFNs) through a licensing system. These use large scale purse seiner and long line vessels.

The main species of tuna and tuna-like fish harvested in the Tanzanian waters includes highly valued species such as *Thunnus albacares* (Yellowfin tuna), *Katsuwonus pelamis* (Skipjack tuna), *Thunnus obesus* (Bigeye tuna), *Euthynnus affinis* (Kawakawa), *Auxis thazard* (Frigate tuna), *Scomberomorus commerson* (Narrow barred Spanish mackerel), *Scomberomorus guttatus* (Indo-Pacific king mackerel), Sailfish and Swordfish. Large pelagic sharks in significant quantity are also found in the Tanzania EEZ.

Fishery of tuna and tuna like species and shark providing significant foreign exchange earnings, food security and employment in Tanzania. For instance, artisanal fishery statistics from the Fisheries Division (Tanzania Mainland only) for the year 2015 shows that 5410.2, 2226.3 and 6459.6 tonnes of

¹¹<https://zanzibar-ecotourism.org/protected-areas-in-zanzibar/>

¹² WWF and WCS (2011). Protected Area Spatial Planning for Unguja and Pemba Islands, Zanzibar

¹³URT (2012). Submission to the Commission on the Limits of the Continental Shelf. Available at: https://www.un.org/Depts/los/clcs_new/submissions_files/tza59_12/Executive%20Summary_%20URT-DOC-001_18-01-2012.pdf

¹⁴IUCN (2020). Worldwide catalogue of case studies on Aquaculture and Marine Conservation, N°1: Zanzibar. IUCN - Gland, Switzerland.

tuna and tuna-like species, kingfish and sharks and rays worth of about USD 40,186 were caught respectively (National Fisheries Report 2016). For 2018, a nominal catch of 22,171 tons for tuna and tuna like species was reported. The potential total catch of tuna in Tanzania EEZ is not well documented but the reported data of purse seiners average 8,000 – 10,000 tonnes/year worth of USD 16,000,000 million was reported in 2016 by Deep Sea Fishing Authority (DSFA 2016). According to a study on tuna fisheries contribution to GDP in the SWIOFC Member Countries¹⁵, the distribution of tuna exports from Tanzania worth a total of USD 38.06 million for the top 10 market destinations in 2017.

The Indian Ocean Tuna Commission (IOTC) provides information on the 2019 stock status of various targeted tuna and tuna-like species¹⁶. Based on this, the stock status of the main fish species targeted by the artisanal and industrial fisheries is presented in Table 5-2 below.

Table 5-2: Stock Status of Tuna and Tuna-like Fish found in the Tanzania EEZ

Fish Species	2019 Stock Status Determination	Outlook
Yellowfin tuna <i>Thunnus albacares</i>	Overfished and subject to overfishing	The increase in catches in recent years has substantially increased the pressure on the Indian Ocean stock, resulting in fishing mortality exceeding the MSY-related levels.
Albacore tuna <i>Thunnus alalunga</i>	Not overfished but subject to overfishing	Maintaining or increasing effort in the core albacore fishing grounds is likely to result in further decline in the albacore tuna biomass, productivity and CPUE
Skipjack tuna <i>Katsuwonus pelamis</i>	Not overfished and not subject to overfishing	Due to its specific life history attributes, skipjack can respond quickly to ambient foraging conditions driven by ocean productivity. Environmental indicators should be closely monitored to inform on the potential increase/decrease of stock productivity.
Bigeye tuna <i>Thunnus obesus</i>	Not overfished but subject to overfishing	Recent increase in catch from purse seine fleets have increased this pressure and the stock is estimated to be subject to overfishing.
Kawakawa <i>Euthynnus affinis</i>	Not overfished and not subject to overfishing	There is considerable uncertainty about stock structure and the estimate of total catches. Aspects of the fisheries for this species, combined with the lack of data on which to base a more complex assessment, are a cause for considerable concern. There is a high risk of exceeding MSY-based reference points if catches were maintained at 2013 levels
Frigate tuna <i>Auxis thazard</i>	Unknown	Between 2010 and 2014 catches have increased to over 95,000 t, rising to the highest levels recorded; although catches have since decline marginally to between 85,000 – 90,000 t since 2014. There is insufficient information to evaluate the effect that this level of catch or a further increase in catches may have on the resource.
Narrow barred Spanish mackerel <i>Scomberomorus commerson</i>	Overfished and subject to overfishing	There is considerable uncertainty about stock structure and the estimate of total catches. The continued increase in annual catches in recent years has further increased the pressure on this species' stock. The apparent fidelity of narrow-barred Spanish mackerel to particular areas/ regions is a matter for concern as overfishing in these areas can lead to localised depletion.
Indo-Pacific king mackerel <i>Scomberomorus guttatus</i>	Unknown	There is considerable uncertainty about stock structure and total catches. Aspects of the fisheries for this species,

¹⁵Lallemand, Phillip (2019). Study on Tuna Fisheries Direct and Indirect Contribution to GDP and Wealth Distribution Patterns in the SWIOFC Member Countries. World Bank.

¹⁶ IOTC–SC22 (2019). Report of the 22nd Session of the IOTC Scientific Committee. Seychelles, 2 – 6 December 2019. IOTC–2019–SC22–R[E]: 204 pp.

Fish Species	2019 Stock Status Determination	Outlook
		combined with the limited data on which to base a more complex assessment, are a cause for concern
Sailfish <i>Istiophorus platypterus</i>	Uncertain	Catches since 2009 have exceeded the estimated MSY, and have also increased by 58% between 2008 and 2017. This increase in coastal gillnet catches and fishing effort in recent years is a substantial cause for concern for the Indian Ocean stock, however there is not sufficient information to evaluate the effect this will have on the resource.
Swordfish <i>Xiphias gladius</i>	Not overfished and not subject to overfishing	The decrease in longline catch and effort from 2005 to 2011 lowered the pressure on the Indian Ocean stock, and despite the recent increase in total catches, current fishing mortality is not expected to reduce the population to an overfished state over the next decade. There is a very low risk of exceeding MSY-based reference points by 2026 if catches are maintained at 2015 levels

Source: IOTC (2019).

The table above indicates that only three of the target species are not overfished and not subject to overfishing, namely, skipjack tuna, kawakawa and swordfish. Hence there is a need for judicious management and monitoring of the tuna and tuna-like fisheries resource to ensure its sustainability and that investment in the fisheries is feasible in the long term.

To this end, the URT has taken a number of steps. The Deep Sea Fishing Authority has signed a Letter of Understanding with IOTC regarding the implementation of the Regional Observer Scheme (ROS) in the United Republic of Tanzania. Under National Observer Program (NOP), observations for artisanal tuna and tuna-like and shark fisheries have been conducted in seven major landing sites in the country. However, there were no port observations or sampling recorded in year 2018 as there were no industrial fishing vessel licensed, trans-shipping or offloading fish at port. Tanzania has developed “EEZ Fisheries Research Agenda 2018-2027” to guide research that will support development and management of tuna and tuna-like fishery in Tanzanian waters. The agenda includes a number of research areas, namely biological research of tuna, tuna-like species, sharks and other living resources; environmental research; fishery related research; stock assessment research; business planning and social and economic research; and monitoring, control and surveillance. Tanzania has also drafted a National Plan of Action for the conservation and management of sharks and rays that is expected to be endorsed by 2020.

5.4 Socio-Economic Environment

5.4.1 Demographic Characteristics

At the end of 2020, the United Nations estimates Tanzania’s population to be at 59.73 million. The current growth rate is 2.98% (Tanzania mainland 3.1% and Zanzibar 2.8%). Projections for 2018 indicated 52.6 million people in Mainland Tanzania, and 1.6 million in Zanzibar¹⁷. The average household size is 4.9 persons, with the average number of members lower on the Mainland (4.8) than in Zanzibar (5.6). Tanzania has a high fertility rate of 4.8 births per woman and a high birth rate of 36.2

¹⁷<https://www.nbs.go.tz/index.php/en/census-surveys/population-and-housing-census/180-population-projections-for-the-period-of-2013-to-2035-at-national-level#:~:text=The%20national%20projections%20show%20that,with%20a%20population%20of%2089%2C204%2C781>).

births per 1,000 people. More than 44.8% of the population under 15, 52% between 15 and 64 and just 3.1% over the age of 64.¹⁸

5.4.2 Land Tenure

The land tenure system in Tanzania mainland is predominantly customary under village land administration. A few instances of leasehold also exist particularly among the private large-scale commercial farmers. Government and parastatals also own some of the land in the regions. Acquisition of customary land is through either inheritance, seasonal renting, direct purchases or borrowing. In the 10 regions and 41 districts where AFDP will be implemented the land tenure system is predominantly customary because direct beneficiaries are smallholder farmers who in most cases acquired land through inheritance from family.

As for Zanzibar, the Land Tenure Act defines the formal land tenure system and all land is owned by the government and that any private rights are only rights to use the land (Right of Occupancy) and any transfers are transfers of rights and the improvements on the land rather than the land itself. The Rights of Occupancy can only be granted to Zanzibari citizens and it only has legal effect when registered under the Registered Land Act(Onkalo, 20110). Small holder farmers in Zanzibar own land through inheritance from family and in most cases without any form of ownership documents.

5.4.3 Land Use

Tanzania has a total land area of 881,289 square kilometres. The main land use types are settlements, agriculture, mining, grazing, hunting and non-woody product harvesting, water resources uses and conservation. Just under half the total land area is classified as suitable for agriculture, and only 24% of arable land is being currently utilized. Land under medium and large-scale farming is 1.5 million ha and land under smallholder farmers is about 8.6 million ha. Generally, the urban areas occupy 2% of the total geographical area even as they are now occupied by close to 30% of population.

A mix of settlements, grazing and agricultural land characterizes the districts where AFDP will be implemented in Tanzania mainland. As for Zanzibar, villages located close to Menai beach and Pemba Channel marine conservation areas are predominantly coastal communities where land is used for agriculture and settlements.

5.4.4 Health Status of Project Communities

The health status of Tanzania resembles that of other countries in the developing counterparts. The current life expectancy for Tanzania in 2020 is 65.46 years, a 0.48% increase from 2019¹⁹. Neonatal disorders, lower respiratory infections, HIV/AIDS, Ischemic heart disease, tuberculosis, congenital defects, malaria, diarrhoeal diseases, stroke and diabetes are the top causes of death²⁰. Maternal, new born and childhood illnesses are also major causes of morbidity and mortality. The maternal mortality ratio is 410 per 100,000 live births. The country TB/HIV con-infection rate is estimated to be 37-39%: About 1.4 million people are living with HIV in Tanzania of whom 11% are aged between 15 – 24years and 58% of whom are women.²¹

¹⁸<https://worldpopulationreview.com/countries/tanzania-population>

¹⁹<https://www.macrotrends.net/countries/TZA/tanzania/life-expectancy#:~:text=The%20life%20expectancy%20for%20Tanzania,a%201.23%25%20increase%20from%202017.>

²⁰<https://www.cdc.gov/globalhealth/countries/tanzania/default.htm>

²¹<https://www.who.int/countries/tza/en/>

5.4.5 Education Status of Subproject Communities

Education has played a vital role in Tanzania's development since independence. In 2007, the country achieved nearly universal access to primary education. However, since then, enrolment of primary school-aged children has been dropping. Equity and quality pose major challenges. Girls, the poorest children, children with disabilities and children living in underserved communities are most vulnerable to dropping out of school or never going to school. Access to pre-primary education is very low and the poor quality of education dampens children's prospects of a productive future. The government is providing free education for primary school pupils and the first four years of secondary school. Enrolment increased from 6.7 per cent in 2003 to 33.4 per cent in 2016. Tanzania has attained gender parity in enrolment²².

5.4.6 Access to Services

Electricity

Tanzania has made great strides in power connectivity in the last 5 years. The total population in Tanzania mainland that has access to power has increased from 67.5 in 2016 to 78.4% by the year 2019. Overall, the percentage of households connected to electricity in Tanzania mainland increased from 32.8% in 2016 to 37.7% in 2019. Looking at urban-rural differentials, 73.2% of households are connected to electricity in urban areas and 24.5% in rural areas. In the 10 regions where AFDP will be implemented, access to power by total population ranges from 67.2% in Singida to 85.8% in Pwani (Ministry of Energy, 2019)

Water and Sanitation

Access to clean and safe water in Tanzania has improved in the last five years i.e. from 2015 to 2020. For rural areas, water coverage has been improved from 48% in June 2015 to 70% by December 2019. In the same category for urban centres, coverage increased from 72% in June 2015 to 85% December 2019. As regards sanitation, only 30% of rural population have access to improved sanitation while school sanitation in terms of access to improved latrines has improved from 38% in 2009 to 90% in 2018. (Ministry of Water, 2020)

Telecommunication Services

Tanzania has been experiencing rapid growth in access to telecommunication services with a penetration of 88% of the total population in 2019. Currently, there are 48.9 Million telephone users. Internet services' users in Tanzania reached 26.8 Million in March 2019 which is about 48% of total population compared to only 5.3 Million in 2011. (TCRA, 2020)

5.4.7 Economic Activities in the Programme Area

Most of the people in the central and western zones of Tanzania mainland where AFDP will be implemented engage in agriculture as a source of food and business. Crops are grown further inland where the land is more productive as compared to the shoreline of Pwani, Tanga and Zanzibar where the soil is too sandy for agriculture. Coconut palms are grown in Tanga and Pwani regions. In Zanzibar agricultural production is mostly concentrated in the production of cloves, as well as coconut products and spices, which are a source of income for the villagers. Seaweed farming is another important economic activity undertaken in Zanzibar, especially by women.

About 68% of Tanzania's work force engage in farming, both in rural and urban areas. However, 83% of all farm holdings are run by small family farmers who dominate the agricultural sector by contributing around 75% of the total agricultural output. Tanzania records a continuous agricultural

²² UNICEF (2017). Tanzania Education Fact Sheet. Available at <https://www.unicef.org/tanzania/what-we-do/education>

sector growth and is considered largely self-sufficient in its main staple crop maize. Cassava, paddy, sorghum and bananas are the second most widely grown staple crops by farmers²³.

The mean land holding capacity is around 1.2 hectares. Besides agricultural production, livestock keeping and poultry production play an important role and account for the second largest source of income; Tanzanian smallholders hold on average 3 Tropical Livestock Units. Around one fourth of the small family farms are female-headed (26%), usually engaging in crop production rather than in livestock keeping.

5.4.8 Household Income in the Programme Area

An average small family farm in Tanzania generates a gross income of about USD 5,032 per year, whereby the majority is acquired through on-farm activities (56%), particularly through the growing and selling of crops (47%). Although on farm income is still the most important source of livelihood, a growing share of smallholders engage in non-agricultural employment (e.g. manufacturing or the retail sector); almost one third of the annual income is generated through non-agricultural wages. Nevertheless, income poverty remains high and 39% of the smallholders in Tanzania live below the national poverty line. Local, often informal, markets remain the main selling channel for smallholders. About 98% of the sales take place in those local settings while 99% smallholder households rely on these local markets to buy their agricultural inputs too²⁴.

5.4.9 Physical Cultural Resources

Tanzania is a country of remarkable variety in physical and cultural geography that includes a vast array of natural and cultural heritage resources. The vast extent of protected areas strongly suggests that a substantial amount of the nation's cultural heritage is located within them. At present, the Ministry of Natural Resources and Tourism (MNRT) is responsible for the management and conservation of Tanzania's cultural and natural heritage resources. The Antiquities Act of Tanzania, enacted in 1964 (amended in 1979 and 1985), is the basic legislation for the management, protection, and preservation of movable and immovable tangible cultural heritage resources.

Zanzibar is extremely rich and diverse and is home to ancient civilizations. At various locations within Zanzibar stone town, there exist Arab settlements aged 300years old, European buildings aged 100 years old, graveyards, sacred areas, mosques, churches. Stone town is listed as one of world heritage sites under UNESCO. All these physical cultural resources located within Stone Town of Zanzibar are protected under Conservation and Development Authority Act of 2010.

5.5 Gender

Women play a crucial role in the agricultural sector, representing 52% of the labour force, but this notwithstanding the contribution of women in the rural Tanzanian economy is underestimated. The share of female landowners to total female agricultural population remains low at 27%, as compared to 73% for male. Maize, beans and cotton are the main crops that both male and female agricultural works produce for home consumption, while their decision on whether to produce them as cash crops or as the food for home consumption also affects the share. More women engage in subsistence farming. Some 90% of women (as compared to 60% for men) in agriculture are dependent on rain-fed harvesting, and there is a lower percentage of women as compared to men who take advantage of improved seeds, fertilizers and pesticides, have access to the materials and implements for production, or afford farm labour. Fishing, is traditionally been considered as a man's job. Women have restricted

²³FAO (2018). Small Family Farms Country Factsheet.

²⁴Ibid.

access to productive assets (boats, equipment), but actually dominate different stages of the fisheries' value chains such as the small fish trading along the beaches and seaweed. Across Tanzania, women are vital to small-scale aquaculture projects.

Tanzania's population is largely young, accounting for 67% of the labour force and are mainly self-employed in informal and formal sectors. Youth unemployment in 2019 stood at 11.5%. The agricultural sector employs 22.9% of Tanzanian working youth (15-35 years). Every year estimated 800,000 youths enter the labour market with limited educational attainments. By 2030, it is projected that each year 1.6 million Tanzanians will enter the labour market. In addition, the youth population is projected to increase by 50% by 2050. This demographic dividend has tremendous potential to transform the supply and demand of food and impact the agri-food industry. Agriculture is the largest employer in the country and critical for inclusive growth and poverty reduction. Youth involvement in agriculture, fisheries and aquaculture is hampered by limited access to productive resources, including capital, limited entrepreneurial skills, poor rural infrastructure, capital accessibility, and drudgery of fisheries and aquaculture due to limited access to modern technologies. Majority of youth do not have practical experience in the fishing and aquaculture sector and especially females, considering it as an occupation for older males. Others prefer engaging in office jobs instead of field activities and yet fisheries and aquaculture is a highly practical field and therefore training and exposure may incentivise youth.

6 Stakeholder Consultations

6.1 Background and Rationale

Project stakeholders are usually people or institutions who may be affected or affect, influence, have direct or indirect interest on the project or program. They form an important element in the project/program because their views and concerns help the design team to accommodate pertinent issues that need to be addressed for achievement of desired results of the Programme. Thus consultations with stakeholders were considered an important part of developing this ESMF as they have provided valuable input to develop acceptable and sustainable project design this implementation plans.

SECAP requires that meaningful consultation with communities (especially targeted groups) that are likely to be affected by IFAD's operations be conducted throughout the Project life cycle, in order to ensure that the communities contribute to the development of management plans, and also to ensure broad community support to the Programme. Communities should participate in providing feedback on the safeguards documents, and in particular project affected people should endorse the proposed mitigation/risk reduction and management measures.

It is for this reason, consultation of stakeholders located at target areas of AFDP was conducted. Stakeholders consultations were conducted between 4th and 15th June 2020.

Stakeholders at the national level, included GoT representatives in Dodoma and Dar es Salaam from the Prime Minister's Office (PMO), Ministry of Agriculture (MoA), Ministry of Livestock and Fisheries (MLF); Ministry of Finance and Planning Tanzania Mainland (MOFP-TZ), National Environment Management Council (NEMC), Tanzania Meteorological Agency (TMA), National Bureau of Statistics (NBS), Department of Water Resources in the Ministry of Water (MOW). In Zanzibar, the team met with representatives from the Ministry of Finance and Planning Zanzibar (MOFP-ZNZ), and Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar (MANRLF) and Deep Sea Fishing Authority (DSFA). Other agencies consulted included Tanzania Agricultural Research Institute (TARI), Agricultural Seed Agency (ASA), Tanzania Official Seed Certification Institute (TOSCI), Aquaculture Development Centre (ADC), Tanzania Fisheries Research Institute (TAFIRI), Tanzania Fisheries Cooperative (TAFICO), Zanzibar Fisheries Cooperative (ZAFICO). In order to better understand the status of fisheries in the Western Indian Ocean, discussions were held with The Nature Conservancy (TNC) in Tanzania and Seychelles, the International Union for the Conservation of Nature and Natural Resources (IUCN), the Indian Ocean Tuna Commission (IOTC), and the World Wildlife Fund Tanzania (WWF-Tanzania).

During field visits to selected target areas of the program, the following six categories of stakeholders were consulted: farmers, agrodealers, aqua farmers, sunflower processor, fishers and private owners of fishing vessels and seaweed farmers.

The list of all persons consulted is presented in Annex 2. Details of the outcomes of consultations are presented in Chapter 6

6.2 Consultation Locations and Stakeholder Categories

The target area for AFDP covers four zones comprised of 10 regions with a total of 41 districts in Tanzania mainland and 2 regions with 2 marine conservations areas in Zanzibar. During field visits various categories of stakeholders found in those target areas were consulted. Visited areas are Morogoro, Tabora, Geita, Pwani and Unguja in Zanzibar. The number of persons consulted per category of stakeholder is as shown in the table below:

Table 6-1: Categories and Number of Stakeholders Consulted

Categories of stakeholder	Location	Number
Crops farmers	Igunga	6
Agrodealers	Morogoro, Igunga, Nzega	3
Sunflower Processor	Igunga	1
Aqua Farmers	Morogoro, Chato, Igunga	21
Fishers	Bagamoyo	4
Owners of Private Fishing Boats	Dar es salaam, Zanzibar	6
	Total	41

6.3 Issues Discussed during Consultations

As pointed above there are different categories of stakeholders in target areas where interventions of AFDP will be made. In order to get the most out of the exercise, issues discussed with stakeholders at a particular location focused more on topics relevant to the respondents in that setting. Focused group discussions guided by questionnaires were used to collect stakeholders' views and concerns. Common issues discussed in all stakeholders meetings were as follows: government programs that respondents have had benefited from in the past, training or technical support that respondents have ever received, organizations that had provided trainings, challenges or problems facing respondents, type of support that respondents require to address their challenges, sources of loans or financing for their activities/projects, forms of associations that respondents are members of, main expectations from associations and capacity building needs of their associations. During discussions moderators were careful not to raise expectations of respondents and beneficiaries on AFDP as this might affect implementation of the program.

6.4 Summary of Outcomes of Stakeholder Consultations

One of the main objectives of the consultation exercise was to get perspectives of targeted beneficiaries so as to inform the project design. It is from the stakeholders' views and concerns that project design team is able to see the Programme from the beneficiaries' side and take necessary action including modifying strategies of interventions. To ensure that desired results of consultations are achieved, stakeholders engagement was conducted in an open and transparent manner without any form of influence. At the end of discussion every respondent felt to have been afforded an opportunity and ample time to give their honest opinion' on topics discussed. Outcomes of consultations are as summarized in the table below:

Table 6-2: Summary of Stakeholder Consultations

SN	Stakeholder Categories	Key Issues/ Stakeholder Concerns
1	Crops farmers	<ul style="list-style-type: none"> • Farmers in Morogoro prefer ASA seeds (maize and sunflower) because of high yield • At Igunga, ASA maize seeds called STUKA are most preferred by farmers but usually not sufficiently supplied and at times not available at all. Therefore, adequate supply of STUKA seed from ASA should be ensured through out the planting season • Access to loans for smallholders farmers is a challenge as commercial banks are not interested in lending to farmers • Long dry spells and short rain seasons affect crop yields in Nzega-Tabora • Soil infertility could be the reason for low yield per acre in Nzega, hence research is needed to check soil fertility
2	Agrodealers	<ul style="list-style-type: none"> • ASA in Morogoro sells same seeds at their shop at retail scale thus somehow posing as a competitor with agrodealers who buy from ASA. • Some farmers prefer to buy directly from ASA shop in Morogoro • Agrodealers in Morogoro obtain seed from ASA as and when they need due to proximity • Agrodealers in Nzega are not aware of ASA Maize seed. • There is high demand of ASA maize seeds called STUKA at Igunga. Agrodealers need this type of seed but supply is inadequate
3	Processor of sunflower	<ul style="list-style-type: none"> • Factory capacity of processing is 400kg per day to get sunflower cake and sunflower oil • Sunflower seed for processing is scarce at Igunga because of few farmers grow sunflower because of lack of availability of seeds • Main suppliers of sunflower seed are from Singida
4	Aqua Farmers	<ul style="list-style-type: none"> • Aqua farmers have ponds of average size 30mx15m • Main challenges are <ul style="list-style-type: none"> ○ Lack of fish feed of good quality ○ Fish feed is too expensive, ○ Impossible to access loans from commercial banks, ○ Many farmers lack knowledge on proper fish farming techniques, ○ Water scarcity especially for fish farmers doing integrated rice-fish farming at Igunga, ○ Fisherlings are scarce at Chato district because there is no hatchery in the whole district, ○ Loans available at district council for youth groups are too little (USD 2,600 for 6 youths), ○ Good Market of table size fish not available nearby hence need to transport harvested fish to other towns • Suggestions: <ul style="list-style-type: none"> ○ Government should facilitate access to loans for fish farmers, ○ Government should start producing quality fish feed, ○ Extension services needed by fish farmers, ○ Training to farmers on how to produce fish feed for their projects, ○ Government should lower import duty/taxes to make imported fish feed affordable
5	Fishers	<ul style="list-style-type: none"> • There is a Beach Management Unit (BMU) at Dunda landing site Bagamoyo with a membership of over 1000 who are usually fishermen, fish vendors or small holder business owners operating at site. All these are beneficiaries of Bagamoyo fish landing site. • Challenges of Fishers:

SN	Stakeholder Categories	Key Issues/ Stakeholder Concerns
		<ul style="list-style-type: none"> ○ There is no proper fish market at the moment, ○ No drying racks for small pelagic fish(dagaa), ○ Ice for fish preservation is expensive, ○ Access to loans from commercial banks is difficult. ● Suggestions: <ul style="list-style-type: none"> ○ New modern Fish market is needed at Bagamoyo to reduce fish losses, ○ The beach management unit/fisheries cooperatives need to be empowered to be able to conduct patrols along the beach to enhance security, ○ There should be a way of helping fishers to access loans as commercial bank do not trust them.
6	Owners of Private Fishing Boats	<ul style="list-style-type: none"> ● Deep sea fishing is lucrative business but need fishing vessels with skilled and experienced captain and shipmaster ● Fish stocks plenty in the deep sea as well as inshore waters ● Local market for fish is available and external markets is a better option ● Long liners need lots of bait which is expensive if sourced locally ● Deep Sea Fishing Authority has low capacity due to poor funding ● Presently there is no foreign vessel fishing in EEZ.

6.5 Other Concerns

Stakeholders consulted, especially those involved in crop farming at small scale level, are concerned about extreme climatic conditions like dry spells and unpredictable rainfall patterns. As regards aquafarmers in urban areas, their main concerns are challenges in accessing funds for expansion of their projects. Furthermore, aquafarmers in urban areas face water scarcity problems: water is essential for the operation of their ponds.

6.6 Priorities for AFDPI Interventions

An analysis of stakeholders' views and concerns point to the following critical issues that need intervention:

- Insufficient supply of improved seed varieties during planting season is a major challenge that needs immediate attention. ASA is best positioned to meet this demand if production of seed is improved.
- Unavailability of fingerlings for aquafarmers who wish to expand their projects poses as a major challenge in aquaculture. ADCs should supply fingerlings from their nurseries and train aquafarmers on how establish nurseries.
- Unaffordable prices of imported good quality fish feed for aquafarmers needs special attention. ADCs should train aquafarmers on how to manufacture fish feed from raw materials available locally.
- Post-harvest losses of fish catch due to unavailability of cold rooms is a challenge to small holder fishers. Cold room facilities at fish landing sites is urgently needed to address this challenge.

7 Potential Environmental, Social and Climate-Related Impacts of AFDP Interventions and their Mitigation

The Programme components have been described in detail earlier in this report (Section 2.3). The Programme components will have positive and negative implications on environmental, social and/or climate-related aspects to varying extent depending on the nature of the interventions. Risks and impacts that are typically anticipated, together with generic mitigation and management measures are described in the following sections. In addition, the Programme Implementation Manual (PIM) will provide guidance for incorporating environmental mitigation measures at the various stages of the subprojects, as well as permitting and licencing obligations.

7.1 Benefits of AFDP

The Programme has been designed to provide numerous environmental, socio-economic and climate resilience benefits for different stakeholders and target groups. These are summarised in Table 7-1 below. AFDP will impact an estimated 363,875 direct households, equivalent to 2 million beneficiaries who will receive project services. It aims to target approximately 50% women and 30% youth.

Table 7-1: AFDP Benefits

Target Group	Expected Benefits
Environmental and Natural Resources	
National Fisheries Sector	<ul style="list-style-type: none"> • Management of natural resources will address destructive fishing practices and illegal mangrove cutting
Semi-commercial fisheries	<ul style="list-style-type: none"> • Investments in stock assessments • Selective fishing gears will reduce catching non-targeted species • Participatory management of natural resources will address destructive fishing practices and illegal mangrove cutting
Artisanal fishers	<ul style="list-style-type: none"> • Capacity building for community-based Beach Management Units/Fisheries Cooperatives in sustainable fishing practices and monitoring and reporting IUU fishing activities • Capacity building to protect coastal and marine resources will contribute to improving fish stocks • Increased use of environmentally friendly adaptive techniques and technologies in fishing, processing and storage • Participatory management of natural resources to address destructive fishing practices and illegal mangrove cutting
Aquafarmers (including seaweed farmers)	<ul style="list-style-type: none"> • Increased use of environmentally friendly adaptive techniques and technologies in fishing, processing and storage
Small scale seed producers	<ul style="list-style-type: none"> • Access to, and adoption of, environmentally friendly technologies in improved crop seed production
Socio-Economic	
Project communities	<ul style="list-style-type: none"> • Opportunities for income diversification in fish and seed value chains • Improved nutrition from bio-fortified maize and beans/pulses, sunflower, seaweed and fish species of high nutritive value

Target Group	Expected Benefits
	<ul style="list-style-type: none"> Improved food security from increased availability of fish protein (from targeted catch as well as bycatch)
Smallscale seed producers and agrodealers	<ul style="list-style-type: none"> Support in seed distribution and marketing will improve productivity Access to high quality inputs (seeds, fertilizers, fingerlings) and support to processing and improving farmers' access to markets will cushion impacts in the post COVID-19 situation.
Aquafarmers, artisanal fishers, seaweed farmers	<ul style="list-style-type: none"> Support in fingerling distribution, tissue culture and marketing will improve productivity Access markets will cushion impacts in the post COVID-19 situation
Women	<ul style="list-style-type: none"> Reduced workloads due to increased resilient crop yields 90% seaweed producers and processors will be women Enhanced income leading to greater decision-making power for women within the household Economic empowerment to control income and improved decision making Access to better education and health care for children as a result of enhanced income of parents.
Youth	<ul style="list-style-type: none"> Improved opportunities and skills for small enterprises in processing, storage and value addition of crops and fish products Enhanced capacity as out-growers for seed companies Enhanced capacity as aquafarmers and aquaculture service providers Enhanced capacity as seaweed farmers Enhanced access to financial services Increased participation in decision-making
Financial institutions	<ul style="list-style-type: none"> Increased linkage with smallscale seed producers and fishers in different value chains
Climate Change Resilience	
National governments and communities	<ul style="list-style-type: none"> Reduced expenditure for disaster management and rescue missions hence more resources directed towards other social services
Project communities	<ul style="list-style-type: none"> Increased the resilience and adaptive capacity of local people to the threats of climate change through a diversification of income streams Availability of locally adapted seeds that are more resilient to climate change, pests and diseases.
Smallscale seed producers and agrodealers	<ul style="list-style-type: none"> Solar-powered pumps for irrigating seed fields will eliminate need for fossil fuel driven pumps Access to locally adapted seeds that are more resilient to climate change, pests and diseases.
Aquafarmers (including seaweed farmers)	<ul style="list-style-type: none"> Solar-powered dryers will eliminate need for fossil fuel driven drying technologies Availability of adequate water for ponds throughout the year as there will be shorter dry spells Seaweed farming has a negative carbon footprint²⁵

²⁵Bjerregaard, Rasmus; Valderrama, Diego; Radulovich, Ricardo; Diana, James; Capron, Mark; Mckinnie, Cedric Amir; Cedric, Michael; Hopkins, Kevin; Yarish, Charles; Goudey, Clifford; Forster, John (2016); Seaweed aquaculture for food security, income generation and environmental health in Tropical Developing Countries (English). Washington, D.C. : World Bank Group.
<http://documents.worldbank.org/curated/en/947831469090666344/Seaweed-aquaculture-for-food-security-income-generation-and-environmental-health-in-Tropical-Developing-Countries>

Target Group	Expected Benefits
Artisanal fishers	<ul style="list-style-type: none"> • Use of FADs enables fishing at specific sites, reducing fuel consumption by fishing vessels, and therefore resulting in reduced carbon emissions
Non-fisher communities	<ul style="list-style-type: none"> • Use of solar powered drying technologies for fish and seaweed eliminates need for fossil fuel-driven dryers • Increased resilience and ability to cope with climate risks in fish value chains

It is expected that support to the Tuna Fisheries Management Plan proposed under ASDP, and the proposed GEF-supported Marine Spatial Plan, will contribute to the protection and conservation of marine resources, which will have a positive effect on tuna (and other) fisheries stock and result in more sustainable fisheries operations.

Moreover, infrastructure associated with fisheries and crop seed production and value chains will be designed so as to be climate resilient, taking into consideration factors such as siting, water availability, and renewable energy technologies.

7.2 Potential Environmental, Social and Climate-Related Risks and Impacts from AFDP Interventions

Table 7-2 below summarises risks and adverse impacts that may result from AFDP supported activities.

Table 7-2: Typically Anticipated Risks and Adverse Impacts of AFDP Supported Activities

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
Component 1: Enhanced productivity of crop seeds, fisheries and aquaculture			
Subcomponent 1.1: Crop seed systems development: <i>National seed demand and supply coordination; innovation development and Early Generation Seed production; basic seed multiplication; bulking-up certified seed; dashboard for seed production; and seed quality control and certification</i>			
<p>➤ Irrigated fields as seed farms at ASA (2 Nos.) and TARI EGS (2 Nos) – all <100ha</p>	<p>Aquifer depletion due to over abstraction leading to reduction in supply for irrigation</p> <p>Excavation activities and/or clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources</p> <p>Use of agrochemicals, leading to pollution due to leaching, seepage or transmission of agrochemicals through the soil into water sources; threats to aquatic ecology, including bio-magnification of toxins in tissues of aquatic fauna, and/or species die off; loss of biodiversity, ecological imbalances, caused by poisoning of non-target species, particularly bees and other beneficial insects; resistance to pesticides and pest resurgence.</p> <p>Oil pollution from spills or leaks fuel, oils and lubricants from farm machinery</p> <p>Overwatering of fields leading to water logging, poor drainage, salinization</p>	<p>Aquifer recharge hindered by prolonged drought</p> <p>Cleared / excavated areas susceptible to erosion caused by rain and wind.</p> <p>Excessive rain/floods causing water logging/poor drainage eventually causing salinization, soil erosion and damage to crop</p> <p>Extreme climatic events resulting in pestilence</p> <p>Clearing of vegetation for farm preparation activities, tilling of land and excessive use of fertilizers leading to GHG emission.</p>	<p>Reduced availability of water for other planned developments.</p> <p>Poor application and handling of agrochemicals: touching, inhaling or ingesting toxic chemicals leading to dermatological or gastric ailments, or poisoning.</p>
<p>➤ Seed processing plants (incl. dryer)</p>	<p>Use of agrochemicals for treatment may result in pollution due to leaching, seepage or transmission of agrochemicals into water</p>	<p>Use of fossil fuels for dryers leading to GHG emissions</p>	<p>The movement of materials into construction sites for processing plants, treatment and</p>

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
<p>➤ Seed treatment and storage facilities for produced seed</p>	<p>sources (eg when processing area is washed); poisoning of non-target species; resistance to pesticides and pest resurgence</p> <p>Poor treatment application methods and improper storage leading to proliferation of aflatoxins – aflatoxins are carcinogenic, cause stunting, birth defects and immune-suppression</p>	<p>Excessive rain, wind or floods may damage storage structures and access road/ water infrastructure.</p>	<p>storage facilities, and construction activities may cause accidents and injuries to workers</p> <p>Accidents and incidents, electrocution, from handling machinery and working with electrical systems.</p> <p>Excessive noise levels from dryers causing workers’ hearing impairments. May also affecting neighbouring homes/premises.</p>
<p>➤ Workshops for farm equipment maintenance</p>	<p>Oil pollution from spills from storing, handling and disposal of fuel, oils and lubricants (eg for farm machinery)</p> <p>Excessive noise from working machinery, drills, etc.</p> <p>Risk of fire destroying structures and surrounding vegetation, and causing air pollution.</p> <p>Generation of waste such as food waste, packaging, scrap metal leading to health risks from proliferation of vermin, obstruction of access</p>	<p>Excessive rain, wind or floods may damage workshop buildings, outhouses and road/ water infrastructure.</p>	<p>Movement of materials into the workshop construction site, and building works causing accidents and injuries to workers</p> <p>Accidents and incidents , electrocution, from handling machinery and working with electrical systems.</p> <p>Risk of fire spreading to neighbouring farms, and causing injury/fatalities to workforce and neighbours.</p> <p>Excessive noise levels causing workers’ hearing impairments and affecting neighbouring homes.</p>
<p>➤ Water reservoirs (volume <3million m³)</p>	<p>Excavation activities and clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources</p> <p>Depletion of ecological flow in water source from which water diverted to reservoirs.</p>	<p>Non availability of water during prolonged drought periods.</p>	<p>Movement of materials into the reservoir construction site, and construction activities may cause accidents and injuries to workers</p> <p>Failure of reservoir structure causing hazard risk to workers on site and surrounding communities</p>

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
➤ Boreholes	Depletion of aquifers due to over-abstraction	Prolonged periods of drought may affect aquifer levels.	Competition for water sources with community sources (eg. if only a limited number of abstraction permits issued)
➤ Dashboard for seed production	Generation of e-waste: disposal methods release potentially toxic chemicals	Manufacture of electronics releases CO2. Disposal of e-waste by burning emits GHGs	Emissions from burning e-waste are toxic to humans and animals.
➤ Laboratories at ASA and TARI seed farms, and at certification laboratory at TOSCI	<p>Excavation activities and clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources</p> <p>Generation of waste such as food waste, packaging, scrap metal leading to health risks from proliferation of vermin, obstruction of access</p> <p>Disposal of laboratory reagents, affecting functionality of septic tanks and sewage systems, and leading to chemical pollution of water courses and soil.</p> <p>Risk of fire destroying structures and surrounding vegetation, and causing air pollution.</p>	Excessive rain, wind or floods may damage laboratory buildings and road/ water infrastructure.	<p>Movement of materials into the laboratory construction sites, and the actual construction activities by workers may cause accidents and injuries</p> <p>Poor storage, handling of chemical reagents where lab workers touch, inhale or ingest toxic chemicals leading to dermatological or gastric ailments, or poisoning.</p> <p>Risk of fire spreading to neighbouring premises, and causing injury/fatalities to workforce and neighbours.</p>
<p>Subcomponent 1.2: Fisheries and aquaculture development</p> <p><i>Development of sustainable artisanal marine fisheries production systems; Private-Public-Producer Partnerships (4Ps) joint venture for fishing in the EE; increasing aquaculture productivity and output; increasing mariculture productivity and output</i></p>			
➤ Provision of fishing gear to artisanal fishers (90 FADs)	<p>Catch of juvenile fish species, bycatch of vulnerable non-target species, catch of sea birds</p> <p>Improved catching efficiency leading to higher fishing mortality of target species.</p>	Tropical cyclones, unusual wave action destroying/cutting loose FADs, leading to ghost fishing (drifting FADs).	<p>Accidents and incidents from operating fishing vessels and FADs</p> <p>Inequitable labour and working conditions.</p>

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
	<p>Modification of habitat due to number of FADs to be used.</p> <p>Damage to coastal habitats.</p> <p>Interference with other maritime activities (eg shipping routes, hovercraft)</p>		
<ul style="list-style-type: none"> ➤ Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and storage >50T /day ➤ Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and storage <50T /day 	<p>Catch of juvenile fish species, bycatch of vulnerable non-target species, catch of sea birds</p> <p>Improved catching efficiency leading to higher fishing mortality of target species.</p> <p>Pollution of the sea from discharge of oily bilge water, sanitary waste and solid waste.</p> <p>Risk of fire on board, resulting in pollution of the sea from fire debris.</p>	<p>Tropical cyclones and inclement seas leading to vessels getting lost, damage to vessels, capsizing.</p> <p>Fuel use by vessels for sailing, ice production, processing and storage on board leading to GHG emissions</p>	<p>Accidents and incidents, electrocution, from handling vessel engines, machinery and ice making, processing activities.</p> <p>Risk of fire from onboard activities causing injury/fatalities to crew and fishers.</p> <p>Excessive noise levels from vessel engines, ice making and processing activities causing fishers' hearing impairments</p> <p>Inequitable labour and working conditions.</p> <p>Restrictions on imports of fish imposed by target countries due to COVID-19 may affect output and earnings</p> <p>Disruptions in transportation modes due to COVID-19 movement restrictions may result in delays and fish rotting prior to reaching markets.</p>
<ul style="list-style-type: none"> ➤ Aquaculture demonstration sites at 3 ADC facilities 	<p>Excavation activities and clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources/sea</p> <p>Pressure on water resources.</p> <p>Discharge of water from ponds containing organic matter, antibiotics, hormones and even agrochemicals</p>	<p>Prolonged periods of drought may affect water availability.</p>	<p>Competition for water between demonstration centres and community water requirements.</p>

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
➤ Boreholes at 3 ADC centres plus one at Boma Road for Kingolwira ADC	Depletion of aquifers due to over-abstraction	Prolonged periods of drought may affect aquifer levels.	Competition for water sources with community sources (eg. if only a limited number of abstraction permits issued)
➤ Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration farm	Risk of escape of seaweed culture to open sea resulting in cross-breeding between domesticated and wild strains; harbouring of parasites; unintentional introduction of non-indigenous 'hitchhiker' species, including pathogens Marine pollution from artificial material (eg. polypropylene) added to provide substrate for seaweed growing being discarded/lost.	Tropical cyclones and inclement seas may uproot seaweed Sea level rise may make it difficult to farm	Conflicts in use of coastline for seaweed vs tourism Women may be marginalised from participating in seaweed cultivation if access to training is limited and if technologies make it difficult for women (eg if seaweed is to be grown in deeper water)
➤ Mariculture training centres x 2 (Unguja and Pemba) <360 students	Excavation activities and clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources/sea	Threat to buildings from sea level rise if located along beach.	Movement of materials into the construction sites, and the actual construction activities by workers may cause accidents and injuries
Component 2: Improved market access, value addition and private sector development			
Subcomponent 2.1: Quality seed use and business development <i>Regional multi-stakeholder innovation platforms; promoting supply and access to improved seeds; promoting awareness and demand for improved seeds; facilitating technical and business synergies for effective market linkages with grain buyers and processors</i>			
➤ Distribution networks, linkages between agrodealers and farmers to facilitate access to improved seeds ➤ Support FO for services for member access to inputs and markets ➤ Promotion of use of improved varieties and CSA practices (targeted support to extension) ➤ On-farm seed maintenance and multiplication	n/a	n/a	Inadequate consultation of various stakeholders, particularly with vulnerable and disadvantaged members of the communities may result in reduced uptake of linkages, promoted varieties, collaboration

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
<ul style="list-style-type: none"> ➤ Promoting collaboration with businesses, commodity wholesalers, public/private consortia. ➤ Leveraging financing instruments through TADB for off-takers, seed businesses and processors 			
<ul style="list-style-type: none"> ➤ ICT platforms for dissemination of information on seed availability (improved varieties and quantities) 	Generation of e-waste: disposal methods release potentially toxic chemicals	Manufacture of electronics releases CO2. Disposal of e-waste by burning emits GHGs	Emissions from burning e-waste are toxic to humans and animals.
Subcomponent 2.2: Fish market development and value addition			
<i>Reducing post-harvest losses; increasing value/income from aquaculture production; seaweed processing and marketing</i>			
<ul style="list-style-type: none"> ➤ Ice plants for smallscale fishers x 8 (cap <50T/day) ➤ Cold chain: Cold storage facilities (40 t/facility) x2 and coolboxes ➤ Refrigerated trucks x5 	Excavation activities and clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources/sea Pressure on water resources – affecting availability of water for ice plants and refrigeration.	Use of fossil fuels for ice plants and refrigeration will emit GHGs Threat to buildings from sea level rise if located close to beach.	Accidents and incidents from handling machinery and ice making activities. Electricity supply to community may be affected due to demand from ice plants and processing plants Inequitable labour and working conditions.
<ul style="list-style-type: none"> ➤ Construction of fish market at Kipumbwi, incl. storage and ice plant 	Excavation activities and clearing of vegetation leading to soil erosion, dust emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources/sea Pressure on water resources Risk of fire destroying structures and surrounding vegetation, and causing air pollution.	Threat to buildings from sea level rise if located close to beach.	Accidents and incidents from handling machinery, ice making, processing activities. Competition with local communities for fresh water and electric power. Risk of fire spreading to neighbouring premises, and causing injury/fatalities to workforce and neighbours. Inequitable labour and working conditions.
<p>Mariculture and aquaculture processing</p> <ul style="list-style-type: none"> ➤ Seaweed drying racks 	Excavation activities and clearing of vegetation leading to soil erosion, dust	Threat to buildings from sea level rise if located close to beach.	Inequitable labour and working conditions.

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
<ul style="list-style-type: none"> ➤ Solar dryers/drying tents for dagaa and seaweed ➤ Fish feed mills, milling machine/plant ➤ Packaging materials 	<p>emissions, loss in biodiversity; and resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources/sea</p> <p>Fish feed mills and milling plants causing dust emissions, odour</p> <p>Solid waste from packaging off-cuts.</p>	<p>Long intensive rain may affect effectiveness of solar drying process.</p>	<p>Inadequate consultation of various stakeholders, particularly women and youth may result in reduced uptake of improved mariculture/aquaculture processing technologies.</p>
<p>Increasing value/income from aquaculture production:</p> <ul style="list-style-type: none"> ➤ Developing/strengthening the ADC-Farmers clusters and linkages with private sector hatcheries; ➤ Establishing aquaculture field/business schools to facilitate learning for fish farmers reaching youth and women; ➤ Enhancing collective marketing strategies; ➤ Expanding market horizon for farmed fish and basic cold chain facilities (e.g. cool boxes). 	<p>n/a</p>	<p>n/a</p>	<p>Inadequate consultation of various stakeholders, particularly with vulnerable and disadvantaged members of the communities may result in reduced uptake of linkages, attendance at field schools, enhanced marketing</p>
<p>Sea weed value chain:</p> <ul style="list-style-type: none"> ➤ Conducting market and value chain analysis of seaweed; ➤ Strengthening seaweed clusters and cooperative societies to enhance access to markets and increase the competitiveness of seaweed value chains and identify opportunities for improving the competitiveness of seaweed; ➤ Enhancing women's capacity on standards and quality control in seaweed processing and value addition; ➤ Facilitating the emergence of seaweed small and medium enterprises and their linkages with financial institutions and business service providers; ➤ Promoting the engagement of youth in seaweed value chain activities to increase sector productivity and create employment. 	<p>n/a</p>	<p>n/a</p>	<p>Inadequate consultation of various stakeholders, particularly with vulnerable and disadvantaged members of the communities may result in reduced uptake of value chain enterprises.</p> <p>Restrictions on imports of processed seaweed imposed by target countries due to COVID-19 may affect output and earnings.</p> <p>Disruptions in transportation modes due to COVID-19 movement restrictions may result in delays in reaching markets.</p>

Component / Activity	Adverse Environmental Risks and Impacts	Adverse Climate Risks and Impacts	Adverse Social Risks and Impacts
Component 3: Policy Engagement and Programme Management and Coordination			
Sub-component 3.1. Policy engagement and institutional strengthening			
<i>Policy engagement including data management, preparation of Tuna Fisheries Management Plan, institutional reforms in public institutions toward business development and 4P business models, development of approach for aquaparks, and Scaling-Up Strategy.</i>	n/a	n/a	n/a
Sub-Component 3.2. Programme management, coordination, monitoring and evaluation (M&E)			
<i>Implementation Readiness and Start-up Plans; Planning, monitoring and evaluation Supervision and implementation support missions Mid-Term Review (MTR) and Programme Completion Review Learning and knowledge management (KM)</i>	n/a	n/a	Programme start up, support missions may be affected or delayed due to travel restrictions because of the COVID-19 pandemic
Sub-component 3.3. Emergency response and recovery post COVID-19			
<i>Support for immediate response to an eligible crisis or emergency, as needed, in coordination with the PMO</i>	Not known at this time	Not known at this time	Not known at this time

7.3 Environmental, Social and Climate Management Plan

The table below summarises an environmental, climate and social management plan (ESCMP) for AFDP based on typical impacts and risk that may arise and generic mitigation and management measures.

Table 7-3: AFDP Environmental, Social and Climate Management Plan

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
Environmental Risks and Impacts						
Abstraction of water for irrigation and aquaculture resulting in depletion of aquifers, particularly in the dry season leading to threats to aquatic ecosystems.	Adhere to permitted abstraction volume as stipulated in water user permits.	Meetings and site visits; consultations with farmers and surrounding communities	ASA, TARI, ADC Water Basin Offices	Water abstraction records at intakes and boreholes	Quarterly	Part of routine operating costs
Excavation activities and/or clearing of vegetation during construction of irrigation schemes, buildings/workshops, storage and processing facilities, leading to: Soil erosion, Dust emissions, Loss in biodiversity; Resulting increase in runoff also may lead to deterioration of water quality (sediment load) in water sources and/or sea	Minimise/prevent soil erosion by controlling earthworks, installing and maintaining drainage structures and erosion control measure; use zero-till/reduce till methods of land preparation. Mitigation through restoration of the sites after works in accordance with contractors environmental and social management plans (CEMPS) Any existing riparian vegetation should be maintained (not cleared) Use zero-till/reduced till methods for land preparation If mechanized clearing, where water is available, keep dust down by watering exposed/ worked surfaces	Meetings and site visits	ASA, TARI, ADC	Site monitoring reports	Weekly or monthly during construction	Included in Programme implementation and routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	<p>If possible, schedule clearing activities such that they avoid the height of the dry seasons.</p> <p>Careful and continuous supervision of clearing activities so that only areas required for plot/fields are cleared.</p> <p>Monitor water quality</p>					
<p>Use of agrochemicals, leading to pollution due to leaching, seepage or transmission of agrochemicals through the soil into water sources; threats to aquatic ecology, including bio-magnification of toxins in tissues of aquatic fauna, and/or species die off; loss of biodiversity, ecological imbalances, caused by poisoning of non-target species, particularly bees and other beneficial insects; resistance to pesticides and pest resurgence.</p>	<p>Prepare and implement an Agrochemical Management System, and an Integrated Pest Management Plan</p> <p>Minimise use of agrochemicals through adopting conservation agriculture techniques, explore organic/natural fertilizers, agrochemicals</p> <p>Manual removal of weeds</p> <p>Careful supervision of application of agrochemicals</p> <p>Use agrochemicals registered and approved by MoA/MANRLF, WHO and FAO</p> <p>Train farmers/aquafarmers in proper use, handling, storage, and disposal of agrochemicals.</p> <p>Ensure agrochemical containers are disposed of as hazardous waste according to waste management regulations</p> <p>Keep records of agrochemicals used, application amounts.</p>	<p>Meetings and site visits; consultations with farmers and surrounding communities</p>	<p>ASA, TARI, PHS, PPD</p>	<p>Agrochemical Management System documentation</p> <p>IPMP prepared</p> <p>Training records</p> <p>Records of agrochemicals stored and applied</p>	<p>AMS and IPMP in place at start up</p> <p>Subsequently quarterly monitoring</p>	<p>Included in Programme implementation and routine operating costs</p>

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	Monitor water quality in soils and water sources					
Over-watering of fields leading to water logging and salinization	Control water supplied to fields Fields should have slight gradients so as to allow drainage of excess water Maintain drainage canals and other drainage structures	Meetings and site visits	ASA, TARI	Site visit reports, water consumption records	Monthly	Routine operating costs
Discharge of contaminated water from aquaculture ponds entering surface water bodies or contaminating soil.	Monitor water quality discharged from ponds Treat effluent to conform with Tanzania Bureau of Standards TZS 860: 2005 General Tolerance Limits for Municipal and Industrial Wastewaters prior to discharge into surface waters	Meetings and site visits	ADC, Municipal Councils, Water Basin Offices in respective areas	Maintenance records Water quality test results	Quarterly	Routine operating costs
Disposal of laboratory reagents, affecting functionality of septic tanks and sewage systems, and leading to chemical pollution of water courses and soil.	Wastewater quality testing All effluent from laboratories to be treated to conform with Tanzania Bureau of Standards TZS 860: 2005 General Tolerance Limits for Municipal and Industrial Wastewaters prior to discharge into septic tanks, sewage systems or surface waters	Meetings and site visits	TOSCI, Municipal Councils, Water Basin Offices in respective areas	Maintenance records Water quality test results	Quarterly	Routine operating costs
Oil pollution from spills or leaks fuel, oils and lubricants from farm machinery, oily bilge water from vessels	Where fuel is stored in bulk, the fuel tank should be contained in a bund of 110% tank capacity Where fuel drums are used these should be stored on sump pallets. Establish procedures for fuel delivery; decanting/draining; use, storage; spill response; disposal of waste oil; handling of oil products	Meetings and site visits	ASA, TARI, ADC TAFICO, ZAFICO	SOPs prepared Site visit reports	SOPs prepared at start up Subsequently quarterly monitoring	Included in Programme implementation and routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	Establish procedures for treatment of oily bilge water: use of oil/water separators and storage in waste oil collection tanks until vessel can dispose of it safely onshore.					
Excessive noise from working machinery, drilling boreholes, etc.	Adhere to guidelines as prescribed in the First Schedule of the Environmental Management (Standards for the Control of Noise and Vibrations Pollution), 2014 Install noise reduction technologies in machinery, generators, etc.	Meetings and site visits	ASA, TARI, ADC	Noise monitoring reports Noise reduction technologies installed and reported in site visit reports	Monthly	Included in Programme implementation and routine operating costs
Generation of waste such as food waste, packaging, scrap metal leading to health risks from proliferation of vermin, obstruction of access	Dispose of solid waste as per best practice guidelines: recycle, reuse, recover and reduce waste Sensitise construction workers, farmers, fishers, processors, on waste management practices	Meetings and site visits	ASA, TARI, ADC	Site visit reports	Monthly	Routine operating costs
Risk of fire destroying structures and surrounding vegetation, and causing air pollution, and solid waste pollution from fire debris	Prepare emergency preparedness and response plan Training in emergency response as per plan	Meetings and site visits	ASA, TARI, ADC TAFICO, ZAFICO	EPRP in place Training records	EPRP in place within a month of start up Subsequently biannual monitoring	Included in Programme implementation and routine operating costs
Overfishing from DSF vessels and due to use of FADs	Strengthen data reporting and monitoring Develop and implement deep sea tuna fishing management strategies Control and monitor use of FADs Develop FAD management strategies Limit use of FADs	Meetings and site visits; consultations with artisanal fishers and coastal communities	DSFA TAFICO, ZAFICO MLF, MANRLF	Catch records	Quarterly	Included in Programme implementation and routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
Juvenile catch and bycatch of non-targeted species	Strengthen data reporting and monitoring Develop and implement deep sea tuna fishing management strategies Control and monitor use of FADs Develop FAD management strategies Limit use of FADs Use non-entangling and biodegradable FADs	Meetings and site visits; consultations with artisanal fishers and coastal communities	DSFA TAFICO, ZAFICO MLF, MANRLF	Bycatch and catch records	Quarterly	Included in Programme implementation and routine operating costs
Risk of escape of seaweed culture to open sea	Prepare biologically coupled hydrodynamic models to support the assessment of risk, understand carrying capacity of water bodies and select suitable sites for seaweed cultivation Seaweed farm management practices to enhance biosecurity measures.	Meetings and site visits; consultations with sea weed farmers, artisanal fishers	MANRLF	Monitoring reports	Quarterly	Cost of model TBD Seaweed farm management part of routine operation costs
Social/Socio-Economic Risks and Impacts						
Irrigation, aquaculture resulting in reduced availability of water for other ongoing and planned developments, causing conflict between communities and project interventions Competition for water sources with community sources	Ensure community water sources are not compromised Establish grievance redress mechanism to deal with conflicts	Meetings and site visits; consultations with farmers and surrounding communities	ASA, TARI, ADC Water Basin Offices	Water abstraction records Complaints received and resolved	Monthly	Routine operating costs
Poor application and handling of agrochemicals: touching, inhaling or ingesting toxic chemicals leading to	Develop agrochemical management system and IPMP describing handling, storage, use and disposal of all agrochemicals used on the schemes.	Meetings and site visits; consultations with farmers	ASA, TARI, ADC PHS, PPD	Agrochemical Management System documentation	AMS and IPMP in place at start up	Included in Programme implementation

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
dermatological or gastric ailments, or poisoning.	Train farmers in the handling, safe storage, application and disposal of all agrochemicals.	and surrounding communities		IPMP prepared Training records Records of agrochemicals stored and applied	Subsequently quarterly monitoring	and routine operating costs
Poor treatment application methods and improper storage leading to proliferation of aflatoxins and resulting health effects on community	Remove sources of contamination, promoting better agricultural and storage techniques (control moisture, temperature, and aeration) Ensure adequate resources are available for testing and early diagnosis, and enforcing strict food safety standards, Sensitisation of farmers and consumers about risks of aflatoxins Create general awareness about personal protection Chemical decontamination or use of enterosorbents for contaminated grains	Meetings and site visits; consultations with farmers and surrounding communities	ASA, TARI	Site visit reports Records of sensitisation provided to farmers and consumers	Quarterly	Routine operating costs
Encroachment by deep sea and artisanal fishers into marine protected areas or sensitive coastal areas affecting marine biodiversity	Establish buffer zones between marine protected areas and EEZ	Meetings and site visits; consultations with deep sea crews, fishers, artisanal fishers, and surrounding communities	DSFA TAFICO, ZAFICO	Incidences reported of encroachment into protected waters	Quarterly	Included in Programme implementation and routine operating costs
Excessive noise levels from fishing vessel engines, ice making, farm machinery, and value chain processing activities	Adhere to guidelines as prescribed in the First Schedule of the Environmental Management	Meetings and site visits; consultations with construction workers, farm	TAFICO, ZAFICO ASA, TARI	Noise monitoring reports	Monthly	Included in Programme implementation

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
causing workers' and fishers' hearing impairments	(Standards for the Control of Noise and Vibrations Pollution), 2014 Provide PPE to personnel exposed to excessive noise levels on site such as ear muffs. Install noise reduction technologies in machinery, generators, etc.	workers, fishers and surrounding communities		Noise reduction technologies installed and reported in site visit reports		and routine operating costs
Emissions from burning e-waste are toxic to humans and animals.	Avoid burning e-waste Set up e-waste management procedures. Agree with suppliers that e-waste from the equipment supplied by them to be taken back by them for recycling/disposal in line with Environmental Management (Hazardous Waste Control and Management) Regulations, 2019 and international best practice. Establish grievance redress mechanism	Meetings and site visits	TOSCI NEMC	Site visit records Complaints received and resolved	Quarterly	Routine operating costs
Accidents and injuries to workers due to movement of materials into construction sites, as well as construction activities, for processing plants, treatment and storage facilities, workshops, laboratories, etc. Accidents and incidents, electrocution, from handling machinery and working with electrical systems, during	Provide adequate and appropriate PPE such as safety boots, helmets, gloves, overalls and this should be in keeping with the task and exposure a worker is subjected to Comply with OSHA requirements and best practice Provide training to all relevant personnel in necessary OHS requirements to ensure their safety First Aid Kit must be kept on the site and modestly stocked with necessities for any emergencies.	Meetings and site visits; consultations with construction workers, farm workers, vessel crew and fishers, workers at processing facilities, laboratory personnel	OSHA	EPRP in place Training records	EPRP in place within a month of start up Subsequently quarterly monitoring	Included in Programme implementation and routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
operation/implementation in buildings and on vessels	Prepare an Emergency Preparedness and Response and Evacuation Plan Train all personnel in emergency response					
Conflicts in use of coastline for seaweed vs tourism and other activities using same resources	Consultations between seaweed farmers, tourism operators, government offices and other key stakeholders to agree on how to use/share beach area. Establish grievance redress mechanism to deal with conflicts Develop Marine Spatial Plan designating specific zones for specific activities along coastline.	Meetings and site visits; consultations with sea weed farmers, artisanal fishers, tourism stakeholders	PCU Department of Fisheries of MANRLF	Records of consultations Complaints received and resolved	Quarterly	Routine operating costs MSP cost TBD
Women may be marginalised from participating in seaweed cultivation if access to training is limited and if technologies make it difficult for women (eg if seaweed is to be grown in deeper water)	Continuous consultations and dialogue between project implementors and potential women participants/ beneficiaries to establish how to overcome some of these difficulties.	Meetings and site visits; consultations with women and youth targeted for seaweed farming	PCU Department of Fisheries of MANRLF	Consultation records	Quarterly	Included in Programme implementation costs
Gender based violence (GBV) i.e. transactional sex (fish for sex) and Intimate Partner Violence, child labour	Create awareness on prevention, handling and referral for all forms of GBV and child labour – integrated in the project activities	Meetings and consultations	PCU, all Programme entities	Consultation records	Quarterly	Included in Programme implementation and routine operating costs
Retrogressive social norms prevent women and youth from participating and benefitting from project activities	Use of GALS methodology and or other gender participatory methodologies to empower women and make women’s roles, needs and aspirations visible; and sensitizing smallholder farmers, women, men and youth to increase their participation	Community dialogue and household focused interventions	PCU, all Programme entities	Consultation records	Quarterly	Included in Programme implementation and routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	Increasing women's access to knowledge, skills, inputs and finance through training, matching grants, exposure visits and GALS fairs Increasing women and youth's visibility as actors in the value chains through representation quotas					
Inequitable labour and working conditions.	Ensure labour and working conditions are in line with national labour laws and ILO core conventions: equal pay, non-discrimination	Meetings and site visits	PCU Ministry of Labour and Employment (TZ), Ministry of Labour, Empowerment, Elderly, Youth, Women and Children (ZNZ)	Work/employment contracts	Quarterly	Routine operating costs
Inadequate consultation of various stakeholders, particularly with vulnerable and disadvantaged members of the communities may result in reduced uptake of linkages, promoted varieties, attendance at field schools, enhanced marketing, value chain interventions	Carry out continuous, extensive and inclusive consultations with stakeholders, particularly vulnerable and disadvantaged groups, during entire project period Set up and disseminate Grievance Redress Mechanism which should be accessible to all stakeholders	Meetings and consultations	PCU, all Programme entities	Consultation records	Quarterly	Included in Programme implementation and routine operating costs
Risk of fire on spreading to neighbouring premises, and causing injury/fatalities to workforce and neighbours.	Prepare emergency preparedness and response plan Train all workers, crews and fishers in fire response	Meetings and site visits; consultations with construction workers, farm workers, crew and fishers and surrounding communities	ASA, TARI, ADC TAFICO, ZAFICO	EPRP in place Training records	EPRP in place within a month of start up Biannual monitoring	Routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
Risk of fire from onboard vessel activities causing injury/fatalities to crew and fishers						
Failure of reservoir structure causing hazard risk to workers on site and surrounding communities	Prepare emergency preparedness and response plan Train all workers, and community leaders/representatives in hazard response procedures.	Meetings and site visits; consultations with farm workers and surrounding communities	ASA, TARI, ADC	EPRP in place Training records	EPRP in place within a month of start up Biannual monitoring	Routine operating costs
The COVID-19 pandemic may affect output and earnings as a result of restrictions on imports of tuna and processed seaweed imposed by target countries, or disruptions in transportation modes resulting in spoilt goods.	Ensure guaranteed markets	Consultations with target markets and entities	MARNLF TAFICO, ZAFICO	Signed agreements/ contract agreements to buy seaweed and tuna	In place prior to tuna fisheries and seaweed subcomponents begin	Included in Programme implementation costs
Climate Risks and Impacts						
Pests and disease outbreaks, including locusts, fall army worm, fish diseases	Establish early warning systems FOs to be trained in accessing climate early warning systems Encourage FOs to develop alternative livelihood means through safety nets Develop and implement IPMP	Meetings and site visits; consultations with farm workers and surrounding communities	ASA, TARI, ADC	Documentation on Early Warning Systems Training records	IPMP in place at start up Subsequently quarterly monitoring	Included in Programme implementation and routine operating costs
Excessive rain, wind or floods may damage project buildings and road and water infrastructure.	Install and maintain drainage structures to regulate stormwater and runoff/run on	Meetings and site visits	ASA, TARI, ADC	Site visit reports	Quarterly	Routine operating costs
Excessive rain, wind or floods may cause severe soil erosion	Install and maintain drainage structures to regulate stormwater and runoff/run on	Meetings and site visits	ASA, TARI, ADC	Site visit reports	Quarterly	Included in Programme implementation

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	Use zero-till/reduced till methods for land preparation					and routine operating costs
Extreme rainfall affecting ITC, cellular signals for early warning systems	Back up data	Stakeholder engagements during meetings and site visits	PCU, TOSCI	Back up files	Weekly	Included in Project implementation and routine operating costs
Sea water rise may affect project structures if located to close to the sea, and make seaweed farming difficult	Careful siting and maintenance of structures based on predicted sea level rise	Meetings and site visits; consultations with sea weed farmers	PCU Fisheries Department of MANRLF	Site visit reports	Quarterly	Included in Programme implementation and routine operating costs
FADs cut loose due to cyclones or severe wave action leading to ghost fishing	Use of smart FADs include sonar and GPS capabilities so that the operator can remotely contact it via satellite to determine the location if cut loose. Use of biodegradable materials for FADs Monitor break away FADs	Meetings and site visits; consultations with artisanal fishers	Fisheries department at Bagamoyo, Kilwa, Mafia and Pangani District Councils	Site visit reports Consultation records Reports of lost FADs	Quarterly	Included in Programme implementation and routine operating costs
Tropical cyclones and inclement seas leading to vessels getting lost, damage to vessels, capsizing.	Prepare emergency preparedness, response and evacuation plan Train all crew members and fishers in emergency procedures	Meetings and site visits; consultations with crew and fishers, and emergency response services	TAFICO, ZAFICO DSFA	EPRP in place Training records	EPRP in place within a month of start up Biannual monitoring	Included in Programme implementation and routine operating costs
E-waste releases of GHG	Avoid burning e-waste Set up e-waste management procedures. Agree with suppliers that e-waste from the equipment supplied by them to be taken back by them for recycling/disposal in line with Environmental Management	Meetings and site visits	TOSCI NEMC	Site visit reports	Quarterly	Routine operating costs

Environmental, Social and Climate Aspects, Risks and Impacts	Recommended Mitigation/Enhancement measures	Public Consultation Activities	Responsible Institution in Implementation Phase	Means of Verification (Monitoring and reporting)	Frequency of Verification	Cost Estimate
	(Hazardous Waste Control and Management) Regulations, 2019 and international best practice.					
Other Risks and Impacts						
Disillusion, distrust as a result of delayed implementation	Continuous communication with stakeholders at all levels.	Meetings and site visits	PCU	Records of consultations	Quarterly	Included in Project implementation costs
Poor safeguards measures in Procurement	Ensure procurement of safeguards related studies is done in accordance to IFAD's procurement guidelines	Meetings	PCU, IFAD	Records of meetings	Ensure procurement of safeguards related studies is done in accordance to IFAD's procurement guidelines	Included in Project implementation costs

8 Climate Risk Assessment

8.1 Introduction

Over the last 40 years, Tanzania has experienced increased climate variability and climate change over most parts of the country. Rising temperatures, longer dry spells, more intense heavy rainfall and sea level rise have hindered poverty alleviation and rural development. Extreme events such as floods and droughts are occurring more frequently both within and between seasons. Increasing temperatures have been observed notably over highland areas while late rainfall onset and early cessation, decreasing rainfall amount and seasonal shift in rainfall patterns are becoming more common nationwide.

Selected value chains are highly sensitive to rainfall deficit and rising temperature. Rural populations, most of whom are highly dependent on rain-fed agriculture, are facing prolonged dry spells with a delayed onset and increased intensity of the wet season combined with unpredictability of rainfall, causing crop failure and water stress, and consequently affecting yields. The impact of climate change on fisheries is mainly associated with destruction/degradation of fish nurseries, breeding and feeding areas. The rise of sea surface temperature causes the destruction of coral reefs, which is a critical habitat for fish.

AFDP has been classified as moderately sensitive to climate risks, and therefore falls into the medium risk category. The purpose of this basic climate risk analysis (CRA) is to determine the exposure of the Programme to climate-related risks based on available information about historic climate hazard occurrences, climate change trends and projections.

8.2 Trend and Climate Hazard Analysis

Tanzania is located between latitude 1°S and 12°S and longitude 29 °E to 41 °E. The country has a tropical climate that varies across regions influenced by regional heterogeneity that covers a land area of 885,800 km² and coastal and marine ecosystems occupying an area of 241,500 km²²⁶. In addition, the country's physical features contribute to high local variability in its climate. Its topography ranges from sea level to of 5,895 m (Mount Kilimanjaro), while its lake systems include Lake Victoria, Lake Tanganyika, Lake Rukwa and Lake Nyasa all of which bring with them their own micro-climates. Thus, the country has a complex seasonality influenced by the Western Indian Ocean, Intertropical Convergence Zone (ITCZ), monsoon winds, Congo Air mass and the lakes²⁷.

This chapter discusses changes in temperature and precipitation patterns in Tanzania mainland and Zanzibar. It investigates both changes in mean temperature and precipitation and their potential impacts on selected crop seed, fisheries and mariculture value chains.

²⁶URT (2019). Third Report State of Environment Report, Vice President Office, Dodoma

²⁷ Luhunga PM, Kijazi AL, Chang'a L, Kondowe A, Ng'ongolo H and Mtongori H (2018). Climate Change Projections for Tanzania Based on High-Resolution Regional Climate Models From the Coordinated Regional Climate Downscaling Experiment (CORDEX)-Africa. *Front. Environ. Sci.* 6:122. doi: 10.3389/fenvs.2018.00122

8.2.1 Changes in Temperature

Mean temperature

Tanzania has a wide range of temperatures. Along the coast and in the islands located in the Indian Ocean, the average temperature varies between 27 °C and 29 °C, while in the central, northern and western parts temperatures range between 20 °C and 30 °C. Temperatures are higher between the months of December and March and coolest during the months of June and July. In the Southern highlands and mountainous areas of the north and northeast, temperature occasionally drops below 15 °C at night, and in the cold months of June and July sub-zero temperatures can also be experienced²⁸.

Temperature Extremes

The country has experienced severe and recurrent droughts, which have caused devastating impacts, particularly in agriculture, water, energy and livestock sectors. The most recent devastating droughts include those of 2003, 2005, 2011, 2014 and 2016²⁹. The severity of drought is exacerbated in the semi-arid regions of Tanzania where estimations show that 61% of land in these areas is likely to be degraded. These areas include some parts of Dodoma, Shinyanga, Manyara, Singida, Simiyu, Geita and Kilimanjaro regions, which are characterized by extreme seasonal conditions with relatively low rainfall, a long dry seasons and high seasonal rainfall and temperature fluctuations³⁰.

Temperature Projections

The climate models project increases in temperature with high variation from zone to zone. Greater warming is projected over the Western side of the country, whereby a warming of up to 3.4°C is projected by 2100. A warming of less than 1.76 °C for 2050 and 3.28 °C for 2100 is projected over parts of the northern coast regions and north-eastern highlands. A warming in excess of 1.77 °C for 2050 and 3.3 °C for 2100 is projected over the Lake Victoria zone and central Tanzania zone. A warming in excess of 1.39 °C for 2050 and 3.18 °C for 2100 are projected for the southern coast including Mtwara and Lindi regions. The figures below depict climate timeline (1971-2000) against expected projections for 2011-2040 (beginning of century), 2041-2071 (mid-century) and 2071-2100 (end of century), under both RCP³¹ 8.5 (higher) and RCP 4.5 (lower).

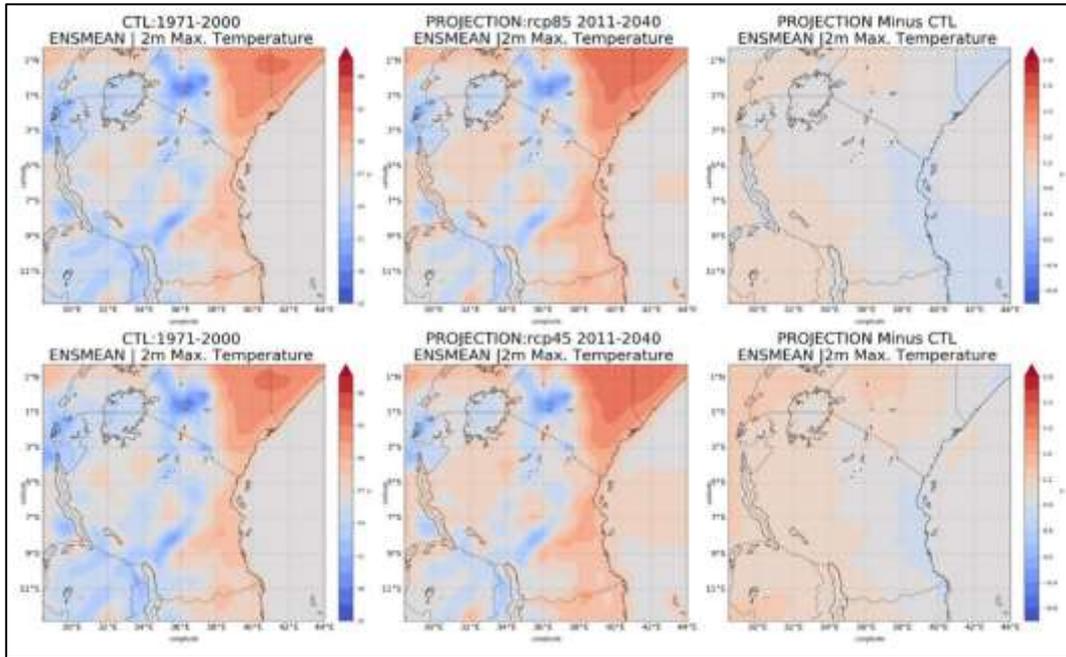
²⁸Ibid.

²⁹Chang'a, L.B., Kijazi, A.L., Luhunga, P.M., Ng'ongolo, H.K. and Mtongori, H.I. (2017) Spatial and Temporal Analysis of Rainfall and Temperature Extreme Indices in Tanzania. *Atmospheric and Climate Sciences*, 7, 525-539. <https://doi.org/10.4236/acs.2017.74038>

³⁰URT (2019). Op cit.

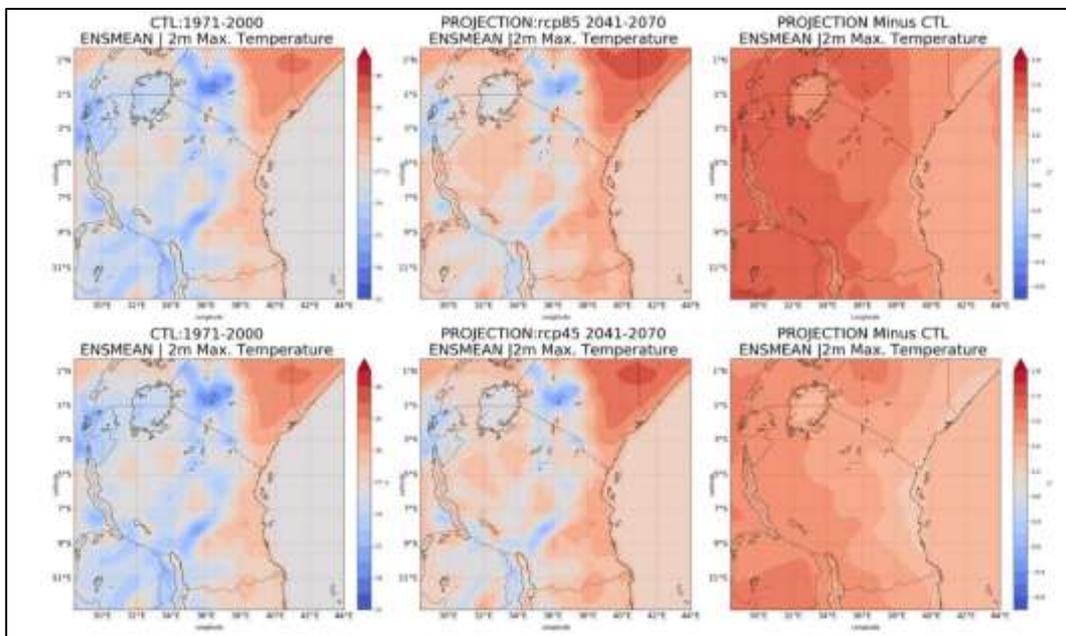
³¹Representative Concentration Pathways (RCPs) refer to scenarios that include time series of emissions and concentrations of the full suite of greenhouse gases (GHGs) and aerosols and chemically active gases, as well as land use/land cover (Moss et al., 2008). The word representative signifies that each RCP provides only one of many possible scenarios that would lead to the specific radiative forcing characteristics. The term pathway emphasises that not only the long-term concentration levels are of interest, but also the trajectory taken over time to reach that outcome (Moss et al., 2010). Source: https://www.ipcc-data.org/guidelines/pages/glossary/glossary_r.html (consulted on 09 July 2020). RCPs usually refer to the portion of the concentration pathway extending up to 2100

Figure 8-1: The average of maximum temperature during baseline period (1971–2000), present century (2011–2040), and the change in temperature during present under both RCP 8.5 (upper) and RCP 4.5 (lower)



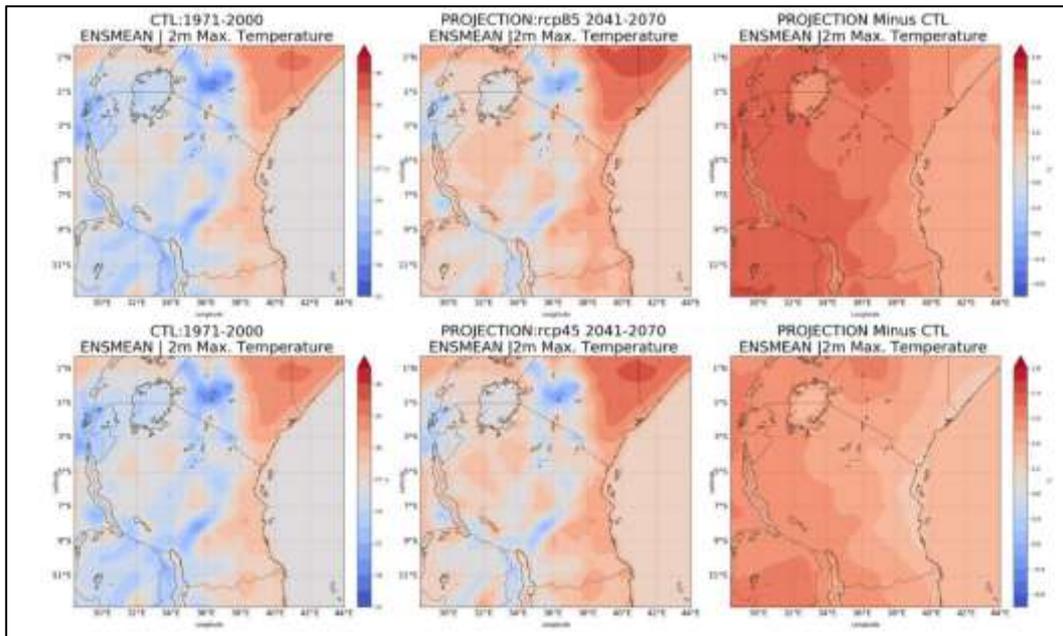
Source: Luhunga et al (2018)

Figure 8-2: The average of maximum temperature during baseline period (1971–2000), mid-century (2041–2070), and the change in temperature during mid-century under both RCP 8.5 (upper) and RCP 4.5 (lower)



Source: Luhunga et al (2018)

Figure 8-3: The average of maximum temperature during baseline period (1971–2000), end century (2071–2100), and the change in temperature during end century under both RCP 8.5 (upper) and RCP 4.5 (lower)



Source: Luhunga et al (2018)

8.2.2 Changes in precipitation

This section investigates three essential aspects of precipitation in relation with crop seed production and fisheries, including aquaculture and mariculture: precipitation depth and its variability as well as the occurrence of extreme wet precipitation events (ie. flash floods and floods).

Precipitation Depth and Variability

Precipitation in Tanzania is highly variable in both space and time due to topographical variations, coastal influences, and the presence of lakes. As result, Tanzania experiences two types of rainfall patterns, bimodal and unimodal rainfall patterns, influenced by the Intertropical Convergence Zone (ITCZ), which move southwards in October and reaches the southern parts of the country in January or February and reverse Northwards in March, April and May. Hence, regions in the central, southern and western parts are characterised by a unimodal rainfall pattern that starts in October and stops in April or May. Regions in the North, Northern coast, North-eastern highlands, Lake Victoria basin and the Island of Zanzibar receive two distinct seasonal rainfalls, the short rainfall season (Vuli) that starts in October and continues through December (OND) and the long rain season (Masika) that starts in March and continues through May. The annual rainfall total varies between 200 to 1000 mm over most parts of the country. Annual and seasonal precipitation trend analyses from 1961 to 2016 show maximum rainfall decline in Tanzania during the long rainy season (March–May), and an increasing precipitation trend in northwestern Tanzania during the short rainy season (September–November)³².

³²URT (2019). Op cit.

Precipitation Extremes

Higher amounts of rainfall are recorded over the Southwestern and North eastern highlands. The most recent severe floods include those of 2006, 2009, 2010, 2011, 2012, 2014, 2016 and 2017 that affected many parts of the country. Above average rainfall occurs during an ElNino events and the reverse during La Nina. The Central zones of Tanzania are considered as semi-arid regions with annual rainfall of less than 400 mm.

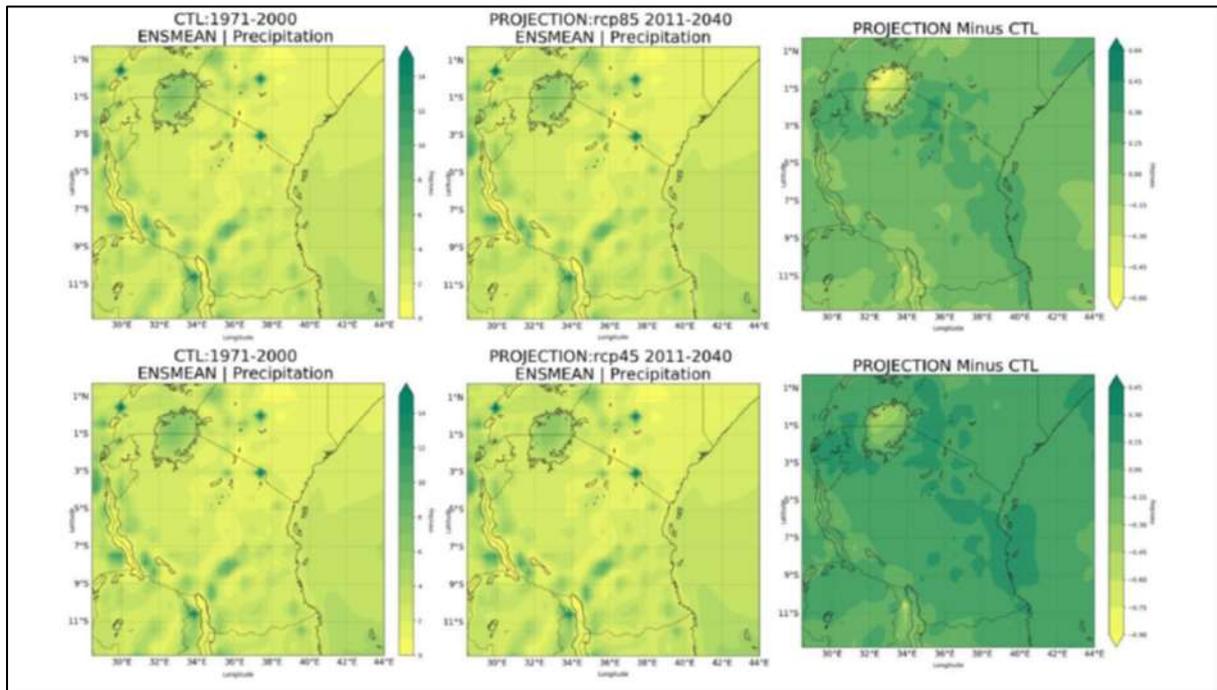
Projections for Rainfall

Climate projections for Tanzania predict increased rainfall in most parts of the country, especially over coastal regions, parts of north-eastern highlands, northern regions, western and southern parts of the Lake Victoria basin where rainfall is projected to increase in the range of 0.15 to 0.45 mm/day. The south-western highlands, eastern parts of Lake Nyasa, and Western regions are projected to experience decreased rainfall in the range of 0.15 to 0.3 mm/day.

Rainfall projections indicate that some parts of the country may experience an increase in mean annual rainfall of up to 18 to 28% by 2100, particularly over the Lake Victoria Basin and North-Eastern Highland (Figure 12-2). An increase of about 10-12% in 2050 and 18.2- 28.3% in 2100 is projected over Lake Victoria Zone. The North Eastern Highlands areas are projected to experience an increase of up to 13.4% in 2050, and 16.3% in 2100. The South Western Highlands and Western Zones of the country are projected to experience an increase in annual rainfall by up to 9.9% in 2050 and by up to 17.7% in 2100. The North Coast Zone is projected to have an increase of about 1.8% in 2050 and 5.8% in 2100 while the Central Zone is projected to have an increase of up to 9.9% in 2050 and up to 18.4% in 2100. The Southern Coast Zone is projected to have a decrease of up to 7% in 2050 and an increase of annual rainfall of about 9.5% in 2100³³. Below figures are showing precipitation in mm/day during base period (1971–2000), projected rainfall patterns during present century (2011–2040), mid century (2041–2070) and end century (2071-2100) change in precipitation under both RCP8.5 (upper) and RCP 4.5 (lower).

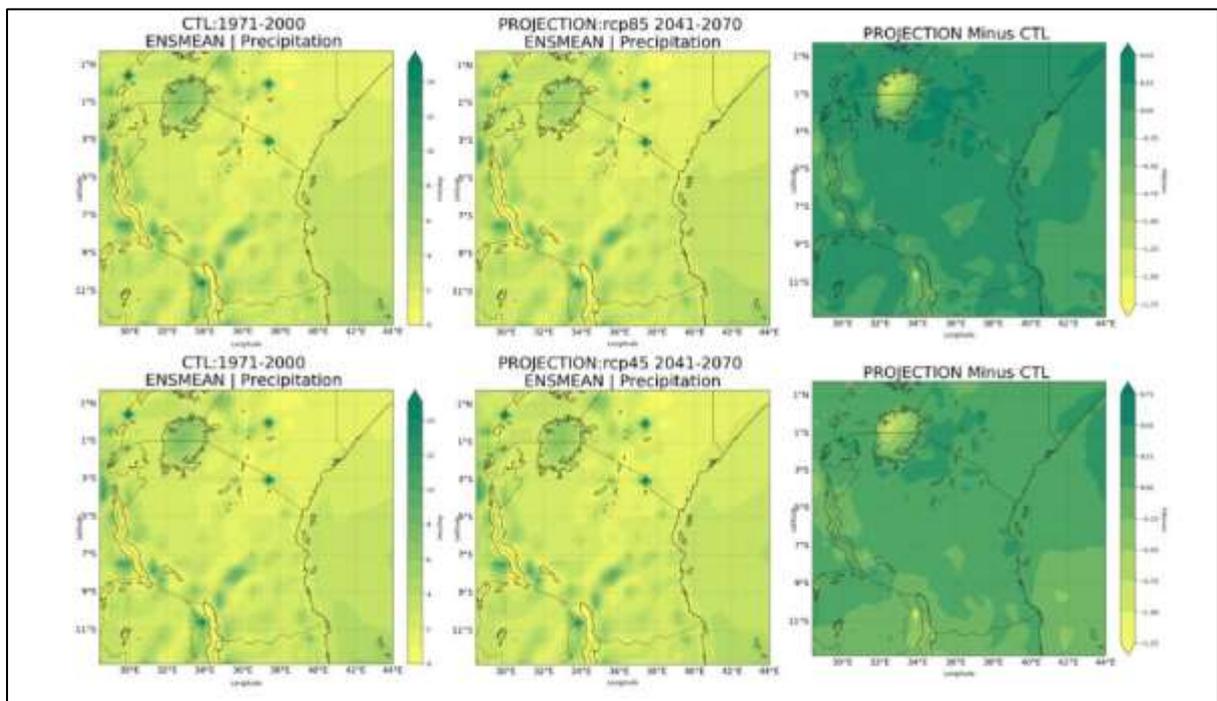
³³URT (2014). Second national communication to the united nations framework convention on the climate change (UNFCCC), Vice President Office, Dar es Salaam

Figure 8-4: Precipitation in mm/day during baseline period (1971–2000), present century (2011–2040), and change in precipitation under both RCP8.5 (upper) and RCP 4.5 (lower)



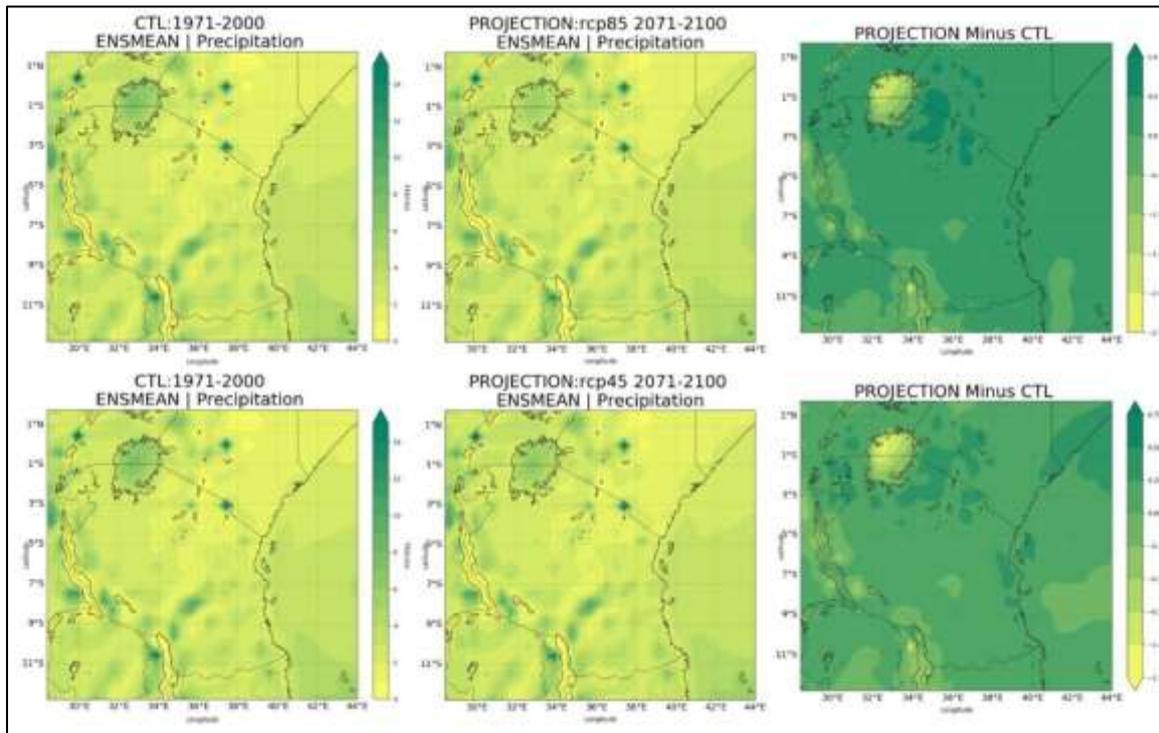
Source: Luhunga et al (2018)

Figure 8-5: Precipitation in mm/day during baseline period (1971–2000), present century (2041–2070), and change in precipitation under both RCP8.5 (upper) and RCP 4.5 (lower)



Source: Luhunga et al (2018)

Figure 8-6: Precipitation in mm/day during base period (1971–2000), present century (2071–2100), and change in precipitation under both RCP8.5 (upper) and RCP 4.5



Source: Luhunga et al (2018)

8.2.3 Coastal and Marine Ecosystems and Related Climate Change Impacts

The Western Indian Ocean (WIO) region is characterized by high diversity in both species and ecosystems and considered as the world’s second richest marine biodiversity hotspot. The Intergovernmental Panel on climate Change Fifth Report (IPCC AR 5) highlights that oceans accumulated 90 % of the heat resulting from global warming during the last four decades³⁴. During 1901-2012, WIO experienced anomalous warming of up to 1.2 °C, compared to an increase of 0.7 °C in other parts of the Indian Ocean. The sea surface temperatures (SST) in the WIO increased at a rate faster than any other region of tropical oceans, with notably an increase of 0.60 °C from 1950 to 2009. Projected changes include an additional increase of 1° C by 2100.

Furthermore, sea level along all Indian Ocean coasts has increased since 1960s with an average of 12.9 cm, except for Zanzibar that shows a decrease. The situation is also exacerbated by increases in tropical cyclones, storm surges and flooding that are aggravated by unpredictable heavy rainfall over the land³⁵. In particular, threats to coastal livelihoods consist of coral bleaching, general decrease in coral cover and changing coral communities. The effects of sea level rise include increased sedimentation and influences on coastal fish species due to the loss of intertidal areas which act as important nursery areas for both resident and migratory species.

Overharvesting and clearing for agricultural use or coastal development have significantly affected mangrove forests, which has declined by 20 % to 30 % over the past few decades. The loss of mangrove forests has led to decreased estuarine biodiversity and shoreline protection from extreme weather

³⁴Roxy & al. (2014). The curious case of Indian Ocean Warming, American Meteorological Society, 8501-8509

³⁵Van der Lingen and Hampton I. (2018). Chapter 11: Climate Change impacts, vulnerabilities and adaptations: Southeast Atlantic and southwest Indian Ocean Marine Fisheries; within FAO, 2018, Impacts of climate change on fisheries and aquaculture Synthesis of current knowledge, adaptation and mitigation options.

events and increased sedimentation and erosion, which have negative impacts on seaweed farming taking place in shallow intertidal areas.

Furthermore, climate change is expected to affect the marine environment extensively by modifying the physical and chemical properties of seawater, including temperature, salinity, current, vertical stratification and oxygen concentration³⁶.

8.3 Main Findings for Targeted Value Chains

8.3.1 Crop Seed Production

With regard to the three selected crop seed value chain (maize, beans and sunflower), changes in climatic characteristics may affect their yields. While increasing temperatures may benefit rain-fed maize production in the highland, maize production is sensitive to daytime high temperatures above 30 °C. Heat stress during flowering and grain filling stages results in decreased grain count and weight, resulting in low crop yield and quality. With elevated temperature (above 35 °C), it is expected that maize will not only suffers from temperature stress, but also becomes sensitive to moisture availability. Rain-fed agriculture combined with potential variations in rainfall distribution under climate change may not be able to meet increasing water demand³⁷. Hence, maize seed production in semi-arid areas of central zones of Tanzania is likely to face a decrease in yield of 8-13% by 2050 due to increased heat stress, drying, soil erosion and land degradation. In semi-arid areas, water and heat stress are projected to temporally decrease the length of the growing season while spatially shrinking the suitable areas for agricultural production.

With regard to bean production, similar trends are expected with yield decreases of 5-9% by 2050³⁸. The negative effects of climate change on beans production are rainfall variability and soil moisture content rather than rising temperature. Based on climate change scenarios, estimations of suitable areas indicate that lowland areas may lose up to 20% of the current beans production but highland areas may gain up to 57% in bean productivity by the middle of the century³⁹.

Furthermore, climate change is likely to reduce yields in sunflower seed production, which is sensitive to dry spells and droughts. Under current climate conditions and with the application of optimum nutrient, pest and disease management options, farmers can achieve yields of 3-4 tonnes per ha. Based on climate change scenarios, yields may drop to 2-3 tonnes per ha⁴⁰.

8.3.2 Aquaculture

For inland small-scale aquaculture systems, increasing seasonal and annual variability in precipitation and resulting flood and drought extremes are likely to be the major threats to aquaculture development. In addition, reduced annual rainfall and changes may lead to potential conflict with other agricultural, industrial and domestic users in water-scarce areas. It expected that smaller ponds

³⁶Gruber, N., 2011, Warming up, turning sour, losing breath: ocean biogeochemistry under global change. *Philosophical Transactions of the Royal Society A*, 369(1943): 1980–1996.

³⁷Adhikari U., Nejadhashemi A. Pouyan & Woznicki S. A. (2015) Climate change and eastern Africa: a review of impact on major crops, *Food and Energy Security* 2015; 4(2): 110–132

³⁸USAID, 2018, Climate change in Tanzania, Country risk profile. This document was prepared under the Climate Change Adaptation, Thought Leadership and Assessments (ATLAS).

³⁹Adhikari et al (2015). Op cit.

⁴⁰Groot A. D. & al, 2019, Sunflower in Tanzania, Climate change risks and opportunities, Wageningen Environmental Research. The assessment was carried out in the context of the Climate Resilient Agribusiness for Tomorrow (CRAFT) project.

might retain less water and dry up faster. Hence, small-scale farmers may suffer from shortened growing seasons and reduced harvests of inferior fish. The decreasing water levels stimulate early maturation and spawning of some important farmed species, resulting in over-crowding, loss of economic returns and a narrower choice of species for aquaculture⁴¹.

8.3.3 Fisheries

The main impacts of climate change on Tanzanian fisheries are the destruction or degradation of fish spawning and nursery grounds, and feeding areas. Rising sea surface temperature and ocean acidification are considered as major threats to coral reefs. However, coral reefs may have the capacity to adapt to changing temperatures more quickly than expected by changing their species composition rather than disappearing. This will also affect associated fish fauna that will change towards more generalist species.

During the last two decades, due to El Nino events, WIO experienced three major warming events (1982/83, 1997/98 and 2015/16) that devastated the health of coral reefs and fish communities. For instance, the anomalously high sea temperature of 1997/98 led to mortality of 50 % to 90 % of coral and coincided with low primary production in the WIO and a shift in Tuna stocks⁴². As a result, 62% of fish species declined in abundance within three years after a loss of more than 10 % of coral cover. In addition, increased acidity in the ocean may cause dramatic changes to phytoplankton and hence reduce WIO primary productivity. Scientists stress that largescale distribution of the dominant species of tunas is associated with phytoplankton availability and abundance. It is expected that further changes will put additional stress on fisheries resources.

8.3.4 Seaweed Farming

In late 1980s, seaweed farming was introduced in Tanzania with two main species, *Eucheuma denticulatum (spinosum)* and *Kappaphycus alvarezii (cottonii)*, both native to the Western Indian Ocean region. To a large extent, seaweed is cultivated at smallscale level. Despite higher production of *E. spinosum*, *E. cottonii* fetches a higher price but its production has been declining substantially over the last decade, due to increasing sea surface temperatures and longer hot seasons⁴³. Farmers have experienced serious problems of die-off and ice-ice diseases resulting into decreased production. However, the canopies of farmed seaweeds have the potential to reduce wave energy and hence may serve as live coastal protection structures buffering against coastal erosion. By nature, seaweed species are strongly autotrophic, generating far more organic matter through photosynthesis than consumed by respiration in the ecosystem, and are thus responsible for much of CO₂ capture in marine vegetated habitats⁴⁴.

⁴¹Handisyde, N.T. et al. 2006. The effects of climate change on world aquaculture: a global perspective. Final Technical Report, DFID Aquaculture and Fish Genetics Research Programme, Stirling Institute of Aquaculture, Stirling, U.K.

⁴²Moustahfid H, Marsac F, Gangopadhyay A., 2018, Chapter 12: Climate change impacts, vulnerabilities and adaptations: Western Indian Ocean marine fisheries, within FAO, 2018, Impacts of climate change on fisheries and aquaculture Synthesis of current knowledge, adaptation and mitigation options.

⁴³Duarte CM, Wu J, Xiao X, Bruhn A and Krause-Jensen D (2017) Can Seaweed Farming Play a Role in Climate Change Mitigation and Adaptation? Front. Mar. Sci. 4:100. doi: 10.3389/fmars.2017.00100

⁴⁴Ibid.

9 Environmental, Social and Climate Change Management for AFDP

9.1 Institutional Framework for Environmental Management in Tanzania Mainland

The institutional arrangement for environmental management in Tanzania Mainland is well spelt out in the Environmental Management Act (EMA), 2004. There are seven (7) institutions are mentioned by the Act, of which the Minister Responsible for the Environment is the overall in-charge for administration of all matters relating to the environment.

Part III, Section 13(1) of EMA (2004) states that the Minister responsible for environment shall be in overall in charge of all matters relating to the environment and shall in that respect be responsible for articulation of policy guidelines necessary for the promotion, protection and sustainable management of environment in Tanzania.

The legal institutions for environmental management in the country include:

- National Environmental Advisory Committee;
- Minister responsible for Environment;
- Director of Environment;
- National Environment Management Council (NEMC);
- Sector Ministries;
- Regional Secretariat;
- Local Government Authorities (Municipal, District, Township, Ward, Village, sub-village “Mtaa and Kitongoji”)

National Environmental Advisory Committee

The National Advisory Environmental Committee is comprised of members with experience in various fields of environmental management in the public and private sector and in civil society. The committee advises the Minister on any matter related to environmental management. Other functions include:

- Examine any matter that may be referred to it by the Minister or any sector Ministry relating to the protection and management of the environment;
- Review and advise the Minister on any environmental plans, environmental impact assessment of major projects and activities for which an environmental impact review is necessary;
- Review the achievement by the NEMC of objectives, goals and targets set by the Council and advise the Minister accordingly;
- Review and advise the Minister on any environmental standards, guidelines and regulations;
- Receive and deliberate on the reports from Sector Ministries regarding the protection and management of the environment;
- Perform other environmental advisory services to the Minister as may be necessary.

Minister Responsible for Environment

The Minister is responsible for matters relating to environment, including giving policy guidelines necessary for the promotion, protection and sustainable management of the environment in Tanzania. The Minister approves an ESIA and may also delegate the power of approval for an ESIA to the Director of Environment, Local Government Authorities or Sector Ministries. The Minister also:

- Prescribes (in the regulations) the qualifications of persons who may conduct an EIA;
- Reviews NEMC reports on the approval of an EIA;
- Issues an EIA certificate for projects subject to an EIA;
- Suspends an EIA certificate in case of non-compliance.

Director of Environment

The Director of Environment heads the Office of the Director of Environment and is appointed by the President of the United Republic of Tanzania. The functions of the Director of Environment include:

- Coordination of various environmental management activities undertaken by other agencies;
- Promotion of the integration of environmental considerations into development policies, plans, programmes, strategies, projects;
- Undertaking strategic environmental risk assessments with a view to ensuring the proper management and rational utilization of environmental resources on a sustainable basis for the improvement of quality of human life in Tanzania;
- Advise the Government on legislative and other measures for the management of the environment or the implementation of the relevant international environmental agreements in the field of environment;
- Monitoring and assessing activities undertaken by relevant Sector Ministries and agencies;
- Preparation and issuing of reports on the state of the environment in Tanzania through relevant agencies;
- Coordination of issues relating to articulation and implementation of environmental management aspects of other sector policies and the National Environment Policy.

National Environment Management Council (NEMC)

The NEMC's purpose and objective is to undertake enforcement, compliance, review and monitoring of EIA's and to facilitate public participation in environmental decision-making. According to the Environmental Management Act (2004) the NEMC has the following responsibility pertaining to EIA in Tanzania:

- Registers experts and firms authorized to conduct EIA;
- Registers projects subject to EIA;
- Determines the scope of the EIA;
- Set-ups cross-sectoral Technical Advisory Committee (TAC) to advise on EIA reviews;
- Requests additional information to complete the EIA review;
- Assesses and comments on EIA, in collaboration with other stakeholders,
- Convenes public hearings to obtain comments on the proposed project;
- Recommends to the Minister to approve, reject, or approve with conditions specific EIS;
- Monitors the effects of activities on the environment;
- Controls the implementation of the Environmental Management Plan (EMP);
- Makes recommendations on whether to revoke EIA Certificates in case of non-compliance;
- Promotes public environmental awareness;
- Conducts Environmental Audits (special audits).

Sector Ministries

In the existing institutional and legal framework, the Sector Ministries are required to establish Sector Environmental Sections headed by the Sector Environmental Coordinator. The Sector Ministries' Environmental Sections are required to:

- Ensure environmental compliance by the Sector Ministry;

- Ensure all environmental matters falling under the sector ministry are implemented and report of their implementation is submitted to the DoE;
- Liaise with the DoE and the NEMC on matters involving the environment and all matters with respect to which cooperation or shared responsibility is desirable or required;
- Ensure that environmental concerns are integrated into the ministry or departmental development planning and project implementation in a way which protects the environment;
- Evaluate existing and proposed policies and legislation and recommend measures to ensure that those policies and legislation take adequate account of effect on the environment;
- Prepare and coordinate the implementation of environmental action plans at national and local levels;
- Promote public awareness of environmental issues through educational programmes and dissemination of information;
- Refer to the NEMC any matter related to the environment;
- Ensure that sectoral standards are environmentally sound;
- Oversee the preparation of and implementation of all EIA's required for investments in the sector;
- Ensure compliance with the various regulations, guidelines and procedures issued by the Minister responsible for the environment and;
- Work closely with the ministry responsible for local government to provide environmental advice and technical support to district level staff working in the sector.

Regional Secretariat

The Regional Secretariat, which is headed by the Regional Environmental Management Expert, is responsible for the co-ordination of all environmental management programmes in their respective regions. The Regional Environmental Officer:

- Advises local authorities on matters relating to the implementation of and enforcement of environmental laws and regulations;
- Creates a link between the region and the DoE and the Director General of the NEMC.

Local Government Authorities

Under the Local Government Act of 1982 (Urban and District Authorities), Local Government Authorities include the Municipal Councils, District Councils, Town Councils, Township, Ward, Mtaa and Village. The Environmental Management Committee of each jurisdiction:

- Initiates inquiries and investigations regarding any allegation related to the environment and implementation of or violation of the provisions of the Environmental Management Act;
- Requests any person to provide information or explanation about any matter related to the environment;
- Resolves conflicts among individual persons, companies, agencies non-governmental organizations, government departments or institutions about their respective functions, duties, mandates, obligations or activities;
- Inspects and examines any premises, street, vehicle, aircraft or any other place or article which it believes, or has reasonable cause to believe, that pollutant or other articles or substances believed to be pollutant are kept or transported;
- Requires any person to remove such pollutants at their own cost without causing harm to health and;
- Initiates proceedings of civil or criminal nature against any person, company, agency, department or institution that fails or refuses to comply with any directive issued by any such Committee.

Under the Environmental Management Act (2004), the City, Municipal, District and Town Councils are headed by Environmental Inspectors who are responsible for environmental matters. The functions of the inspectors are to:

- Ensure enforcement of the Environmental Management Act in their respective areas;
- Advise the Environmental Management Committee on all environmental matters;
- Promote awareness in their areas on the protection of the environment and conservation of natural resources;
- Collect and manage information on the environment and the utilization of natural resources;
- Prepare periodic reports on the state of the local environment;
- Monitor the preparation, review and approval of EIA's for local investors;
- Review by-laws on environmental management and on sector specific activities related to the environment;
- Report to the DoE and the Director General of the NEMC on the implementation of the Environmental Management Act and;
- Perform other functions as may be assigned by the local government authority from time to time.

9.2 Institutional Framework for Environmental Management in Zanzibar

Environmental Management is the responsibility of Zanzibar's Department of Environment (DoE) at 1st Vice President's office. The framework legislation which governs environmental management in Zanzibar is The Zanzibar Environmental Management Act, 2015 with its Environmental Impact Assessment Regulation, 2017.

The Zanzibar Environmental Management Act of 2015 states that: "No person shall undertake any activity which is likely to have a significant impact on the environment without an EIA certificate issued under this Act. No licensing institution shall issue a licence, permit, certificate, or other form of approval for an activity which is likely to have a significant impact on the environment unless an EIA certificate has been issued for the activity"

The Zanzibar Environmental Management Authority (ZEMA) is the central EIA authority in Zanzibar. Its responsibility is to manage and regulate EIA requirements and procedures in accordance with the provisions of the Zanzibar Environmental Management Act.

Other public institutions involved in the EIA and their roles is as follows:

- i. Zanzibar Investment Promotion Authority is especially involved in foreign investment projects;
- ii. Zanzibar Commission for Tourism is involved in local entrepreneur projects;
- iii. Institute of Marine Sciences: This institution assists with scientific studies;
- iv. Stone Town Conservation and Development Authority depends on the Department of Environment for advice on prevention of degradation of UNESCO sites;
- v. Local Government Authority assists in public hearing phases and in signalling problems in communities;
- vi. Department of Forestry assists with reports for relevant projects;
- vii. Department of Land and Registration deals with all issues related to land use and title deeds;
- viii. Department of Fishery and Marine Products assists in issues related to fisheries.

9.3 National EIA Procedures

9.3.1 EIA Procedure in Tanzania Mainland

Section 81 of the Environmental Management Act of 2004 requires all developers of projects identified in the 3rd Schedule of the Act and detailed in the 1st Schedule of the EIA and Audit Regulations of 2005, to undertake Environmental Impact Assessment (EIA). Amendments made to the EIA and Audit Regulations of 2018 introduced three categories of projects i.e. Type A, B1 and B2.

Procedures for carrying out EIAs for Type 'A' Projects

There are seven key steps to be followed in the EIA process in Tanzania for Type 'A' Projects. These are:

Step 1: Registration: The proponent is required to register the proposed project with NEMC, by submitting an application for the EIA certificate by filling in a 'Environmental Assessment Registration Form' and pay registration fees. Along with registration forms the proponent submits Scoping Report and Terms of Reference (TORs) for conducting the Environmental Impact Assessment (EIA) for review and approval before the commencement of the EIA study.

Step 2: Screening: Upon receiving the registration forms and scoping report with Terms of Reference, NEMC reviews the report and approve or disapprove if not satisfied. NEMC may also require more information or modification of ToR if deemed necessary. If the ToR approved, NEMC allots a registration number and prescribes review fees payable to NEMC according to fees and charges regulations which specify amount of fees depending on the type and size of proposed project.

Step 3: Environmental Assessment: The proponent or his/her registered EIA expert conduct EIA study according to the approved TOR and adhere to the Environmental Management Act of 2004 and The Environmental Impact Assessment and Audit Regulations of 2005 and its amendments of 2018.

Step 4: Review: The proponent or his/her Consultant submits an Environmental Impact Statement (EIS) to NEMC for review by a Cross-sectoral Technical Advisory Committee (TAC). Prior to the review by TAC, NEMC and key stakeholders from other sectors (depending on the type of project) may visit the proposed site for verification of issues that have been raised on the EIS and confirmation of stakeholder consultation at the proponent's costs (transport arrangements to be done by the proponent). The Council shall, within 60 days following submission of EIS carry out its review as per Section 87(1) of Environmental management Act, 2004.

Step 5: Recommendations of the Technical Advisory Committee(TAC): The proponent and his/her Consultant will make improvements of the EIS by incorporating all comments and recommendations raised by the TAC.

Step 6: Submission to the Minister for Environment: The Proponent or his/her consultant submits the improved (final) version of the EIS to NEMC for final scrutiny. NEMC will forward recommendations to the Minister for Environment for final approval.

Step 7: Approval of the EIS: Upon signing of the Certificate by the Minister, it will be brought back to NEMC for collection by the proponent. The Minister may approve or disapprove the EIS within 30 days as per Section 92(1) of Environmental Management Act, 2004.

Procedures for carrying out EIAs for Type 'B' Projects

For a Type 'B1' Project as defined in the First Schedule of the EIA and Audit Regulations of 2018, depending on NEMC's decision at screening stage after submission of Scoping report and ToR, if NEMC deems that the project falls under Type 'A' then seven key steps to be followed in the EIA process are as shown above. If NEMC decides that the project falls under type 'B2', and for Type 'B2' projects specified in the First Schedule of the EIA and Audit Regulations of 2018, the following steps are followed:

Step 1: Submission of Detailed Project Brief: The proponent is required to submit 10 printed copies of detailed project brief report to NEMC.

Step 2: Prescription of Review Fees: NEMC prescribes fee payable by the Proponent depending on the size and estimated development project cost of the project in line with Fees and Charges regulations.

Step 3: Submission to the Minister: After payment of prescribed review fees by the proponent, NEMC forwards the report and recommendations to the Minister for Environment for final approval.

Step 4: Approval of the report: Upon signing of the Certificate by the Minister, it will be brought back to NEMC for collection by the proponent. The Minister may approve or disapprove the report within 30 days as per Section 92(1) of Environmental Management Act, 2004.

Appeal and Grievances Redress Procedure

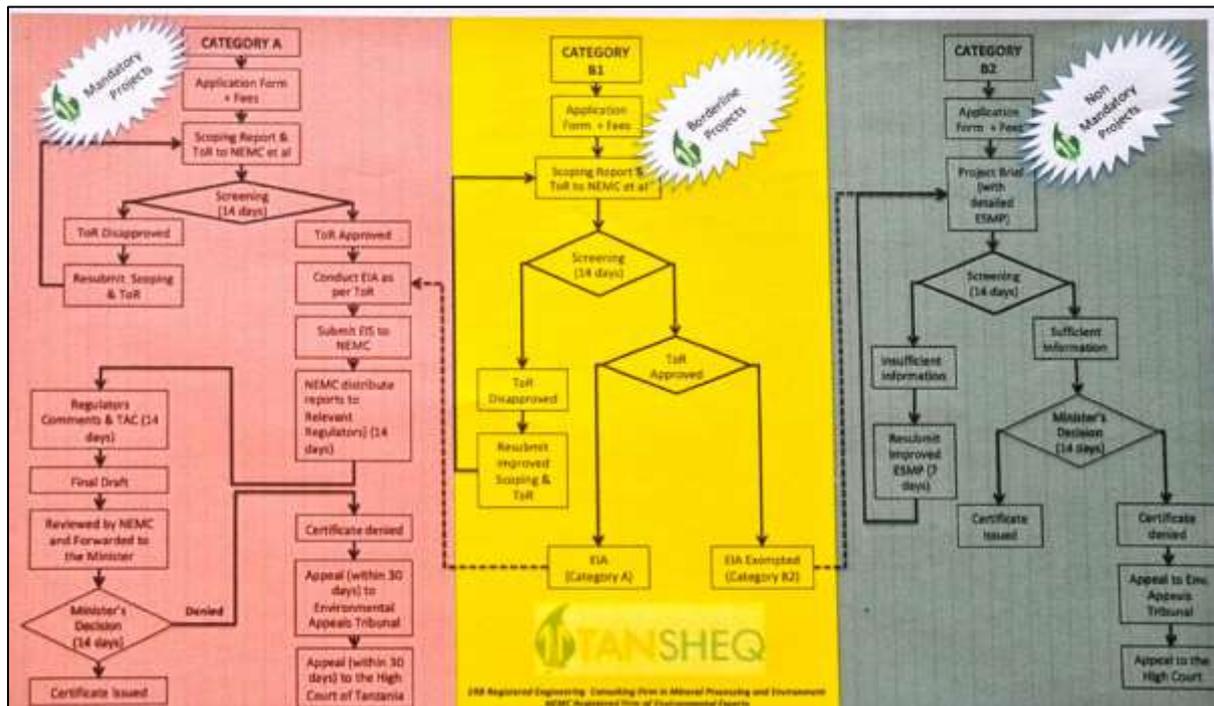
NEMC may disapprove reports submitted by the proponent if they have reasons to do so. If the proponent is aggrieved by such decision may appeal by writing a formal letter to the Minister to seek redress. The Minister upon satisfying himself on the claim brought before him may allow or disallow the EIA process to continue. If the Minister rejects the appeal, the proponent may appeal against this decision by escalating to environmental appeal tribunal according to section 95 of Environmental Management Act, 2004. In case there is no such tribunal formed at the time of appeal, the proponent may file his/her case at the High Court of Tanzania.

Follow Up and Monitoring

During implementation of the project the proponent is required to undertake annual monitoring audit based on the Environmental and Social Monitoring Plan in the approved EIS. A report detailing the results of the annual monitoring exercise is submitted to NEMC for filing. The proponent conducts annual monitoring through a NEMC-registered EIA expert.

The EIA Process is depicted in Figure 9-1 below.

Figure 9-1: EIA Process in Tanzania Mainland



Source: TANSHEQ Ltd, 2020

9.3.2 EIA Procedure in Zanzibar

The Zanzibar Environmental Management Act (ZEMA) makes a screening decision based on a feasibility study for private projects or concept notes for public projects prepared by the proponent, and requests further information if necessary. The proponent is responsible for scoping, preparing Terms of Reference for the EIA, and preparing the Environmental Impact Statement (EIS, or EIA report) while facilitating public participation in the process. ZEMA reviews the EIS and arranges public participation in the review process and makes a decision including approval or disapproval of the EIS. In case of disapproval, the proponent has the right to appeal. In case of approval, an EIA certificate is granted and the proponent can start implementing the project. ZEMA is responsible for monitoring and auditing during implementation, until decommissioning by the proponent.

The EIA procedure followed in Zanzibar is as follows:

Screening: ZEMA is the screening authority. Once the feasibility study or concept note is submitted, it is then reviewed in order to determine the magnitude of the project. ZEMA can then decide if an assessment is required or not; and if required, in what level of an assessment.

Scoping: If the screening indicates that an EIA is required, scoping will be undertaken by the selected expert or firm. This step is crucial because it determines how the EIA study will be carried out. It also identifies and takes into consideration major concerns of stakeholders and identifies likely impacts of the project. The scoping exercise establishes the Terms of Reference and boundary of the EIA Study, which are submitted to ZEMA for approval.

Assessment: Once the ToR are approved, then the EIA study follows. It describes the nature of the project as well as analysing the possible environmental and social impacts of the project or activity together with mitigation measures to minimize the negative impact and enhance the positive ones.

Public Consultation: This should take place during this assessment. Once the EIA study is completed, the proponent, through his/her selected expert or firm, submits 15 hard copies, 15 hard copies of non-technical summary and one soft copy of the report to ZEMA for review.

Review Process: ZEMA circulates the EIA report to the relevant stakeholders to get their views and comments. These stakeholders will submit their views to ZEMA in writing before the review meeting is held. At an agreed date between ZEMA and proponent site verification is done before the review meeting is held. The objective is to become familiar with the project by physically observing the proposed project area, and to confirm what is written in the report. The project proponent will have to pay the fees for site verification, as well as for reviewing the document. Finally, the meeting is held for review of the EIA Report: This is conducted to gain the stakeholder's evaluation of the strengths and weakness of the EIA report, based on the review criteria set by ZEMA. ZEMA is responsible for review of the EIA report and make use of a review committee comprised of representatives of other authorities and ministries who attend the review meeting.

Decision Making: The outcome of the review could be EIA approval, EIA rejection or a request for further information. In case the ESIA report is accepted, the EIA certificate will be issued, with conditions attached. The certificate will be valid for the whole project life span.

Appeal and Grievance Redress Mechanisms

The project proponent can appeal a decision on project approval. If the party disagrees with ZEMA's disapproval of the activity or considers the conditions included in the EIA certificate unfeasible to such an extent that they are equivalent to disapproval of the activity, the following steps should be followed:

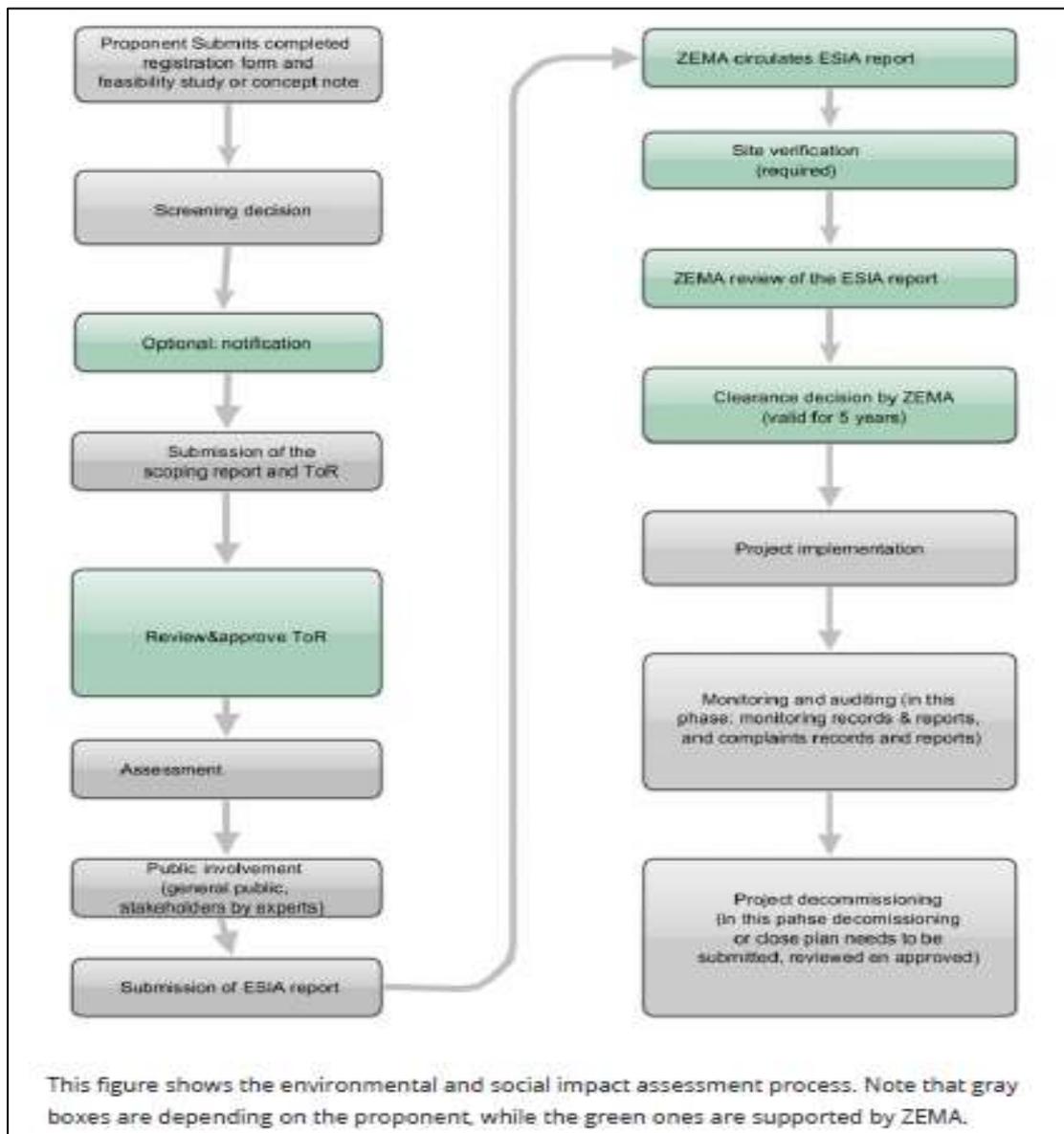
- i. Project Proponent wishing to appeal against decision notifies ZEMA within seven (working) days after receipt of the decision;
- ii. ZEMA refers the matter to the Minister for decision within fourteen working days after submission, including all information compiled during the application process and ZEMA's recommendation;
- iii. The Minister decides whether to approve or disapprove the proposed activity, and may choose to invite public comments and/or take into consideration other national policies as part of this decision-making process;
- iv. The Minister states reasons for approving or disapproving the activity and shows that the recommendations and information provided by ZEMA have been used in this decision.
- v. If the appealing party is dissatisfied with the Minister's decision, further appeal to the high court of Zanzibar may be sought.

Follow Up and Monitoring

Follow up and monitoring is established under Part IX of the Zanzibar Environmental Management Act No. 3 of 2015 (Section 43). Monitoring is required for all the major projects and programs. Monitoring of the project during implementation phase is conducted by ZEMA in order to ensure compliance and adherence to the approved environmental and social management plan, and to make sure the conditions attached with EIA certificate are fully complied with. However, EIA regulations provide for self monitoring where a proponent undertakes monitoring through registered experts and submits an environmental monitoring report to ZEMA on annual basis.

The EIA process in Zanzibar is illustrated in the figure below:

Figure 9-2: EIA Process in Zanzibar



Source: http://www.minifuss.com/wp/our-services/environmental-certificate/eia/env_cert_esia/#main

9.3.3 Permitting and Licensing Requirements for AFDP Activities

Tanzania Mainland

There are a number of permits and licences that will be required for the implementation of specific AFDP activities. These include:

- Environmental Impact Assessment Certificate;
- Construction Permit;
- Water User Rights Permit.

Zanzibar

The following permits or documents may be required prior to construction of facilities in Zanzibar:

- Environmental Impact Assessment Certificate,

- Town Planning (TP) Drawing and Survey Plan: required under Land Tenure Act No. 12 of 1992 and issued by Department of Urban and Rural Planning;
- Rights of Occupancy: required under Land Tenure Act No. 12 of 1992 and Title Deed issued by Department of Land Administration;
- Building Permit: required under Municipal Act No. of 1995 and issued by the Municipal Council.

9.4 Environmental, Social and Climate Change Management Procedures for AFDP

The Environmental, Social and Climate Change (ESCC) management procedures for AFDP subprojects will follow the national guidelines and processes as described in the preceding section, as well as IFAD's safeguard requirements as elaborated in SECAP. This section elaborates on those processes to ensure that the environmental and social analysis and monitoring conducted for AFDP subprojects are aligned with IFAD's safeguards requirements.

All AFDP interventions will have to follow the procedures outlined below, including screening, preparation of ESIA's or Project Briefs and other safeguards documentation, review and approvals, disclosure, setting up grievance mechanisms, monitoring, auditing and reporting.

9.4.1 Implementation and Coordination

The institutional arrangements for AFDP implementation as presented in the PDR have been described in Section 2.4, which gives an overview of the roles of the PSC, PTAC, TWG, PCU and PCT. The PCU will include an Environmental, Social and Climate (ESC) Specialist who will report to the Programme Coordinator. Terms of Reference for this specialist are included in Annex 3. The ESC Specialist will work closely with the District Facilitation Teams (DFTs), particularly the District Environment Management Officers (DEMO), the District Agriculture Officers (DAO), the District Fisheries Officers (DFO), and the District Community Development Officers (DCDO), as well as the Regional Environmental Officer.

The implementing agencies for the various Programme activities and interventions are TARI, ASA, ADC, TOSCI, TAFICO and ZAFICO.

Specific responsibilities in relation to environmental and social assessment and monitoring procedures and safeguards requirements are described in the sections.

9.4.2 Screening

The purpose of screening is to provide an initial indication of the nature and complexities of a project, after which it can be categorised to determine the level of investigation necessary to ensure that the project causes no harm to the environment or the project communities, and to ensure that the project is acceptable and sustainable in terms of environmental, social and climate risks and impacts.

SECAP Screening Categorisation of AFDP

According to the SECAP Review Note, AFDP has been categorised as Category A. While most of the proposed interventions will have some significant impacts that can be readily mitigated or remedied and therefore fall into Category B, some activities will have significant environmental impacts which are not easily remedied rendering them Category A. Category B interventions are: crop seed development activities (involving small scale irrigation <100ha, seed testing and certification laboratories and a training centre), mariculture involving a training centre to promote technologies to improve seaweed farming, and aquaculture ponds. However, the deepsea fisheries and related

processing activities may have significant adverse environmental and/or social implications that warrant further investigation. The impacts of tuna fisheries are sensitive not least because a number of tuna and tuna-like species are considered to be susceptible to overfishing or are currently overfished, and moreover any impact on their stocks will extend over a large area, beyond territorial waters. This is compounded further by the limited data available on fish stocks and sustainable yield in URT waters. While remedial actions can be proposed, for example, through the implementation of a Tuna Fisheries Management Plan, these will require capacity building for implementation, monitoring and reporting and associated financial resources. Thus, the deep sea fisheries and related interventions are considered to be Category A.

The table below summarises the IFAD/SECAP, GoT and RGZ screening categories currently allocated to the various AFDP interventions based on categorisation presented in the First Schedule of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018, for AFDP activities as described in the PDR (July 2020). A detailed table describing the justification for the various screening categories is presented in Annex 4.

Table 9-1: Screening Categorisation for AFDP Interventions

Components and Interventions	Activity categorisation		No. of ESIA/PB Studies
	GoT/RGZ	SECAP	
Component 1. Enhanced productivity of crop seeds and fisheries			
<i>Subcomponent 1.1: Crop seed systems development: National seed demand and supply coordination, Innovation development and Early Generation Seed production; Basic seed multiplication; Seed certification</i>			
Irrigated fields as seed farms <100ha in size including: laboratory, seed dryer, processing plants, workshops for farm equipment maintenance, water reservoirs, and seed treatment and storage facilities for produced seed, and boreholes	B1	B	2
Irrigation schemes for EGS approx. 25ha in size including: laboratory, workshops for farm equipment maintenance, water reservoirs, seed treatment and storage facilities, and boreholes.	B2	B	2
Seed Testing Laboratories (infrastructure & equipment) Seed certification (field and lab control, electronic systems for seed authentication)	B1	B	3
<i>Subcomponent 1.2: Fisheries and aquaculture development: Development of sustainable marine fisheries production system; Increasing aquaculture productivity and output; Increasing mariculture productivity and output</i>			
Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and storage >50T /day	A	A	1
Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and storage <50T /day	A	A	1
Support to artisanal fishing: provision of fishing gear to artisanal fishers (90 FADs)	B2	B	1
Aquaculture demonstration centres at 3 ADC sites, incl borehole and one water supply system at Kingolwira	B1	B	3
Additional Borehole at Boma Road for Kingolwira ADC	B1	B	1
Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration farm	n/a	B	1
Mariculture training centres x 2 (Unguja and Pemba) <360 students	n/a	B	2
Component 2. Improved market access, value addition and private sector development			
<i>Subcomponent 2.1: Quality seed use and business development: Zonal multi-stakeholder innovation platforms. Promoting offer and access to improved seeds. Promoting awareness and demand for improved seeds</i>			
Distribution networks, linkages between agrodealers and farmers to facilitate access to improved seeds	n/a	C	0
Promotion of use of improved varieties and CSA practices (targeted support to extension)	n/a	C	0

Components and Interventions	Activity categorisation		No. of ESIA/PB Studies
	GoT/RGZ	SECAP	
Support FO for services for member access to inputs and markets	n/a	C	0
ICT platforms for dissemination of information on seed availability (improved varieties and quantities)	-	B	1
Sub-component 2.2: Fish market development and value addition: Reducing post-harvest losses. Private-Public-Producer partnerships (4Ps) joint venture for deep sea fishing. Increasing value/income from aquaculture production			
Ice plants for smallscale fishers x 8 (cap <50T/day)	B1	B	8
Cold chain: Cold storage facilities (40 t/facility) x2 and Refrigerated trucks x5	B1	B	2
Construction of fish market at Kipumbwi, incl. storage and ice plant	B1	B	4
Dagaa solar powered drying racks x80	n/a	B	1
Solar drying tents for seaweed and machines for grinding dried seaweed x5	n/a	B	1
Fish feed mills	n/a	B	1
Component 3. Programme Management and Coordination			
Subcomponent 3.1: Policy engagement and institutional strengthening			
Institutional reforms in public institutions	n/a	C	0
Development of aquaparks (aquaculture cluster growth model)	n/a	C	0
Subcomponent 3.2: Programme Management and Coordination: Programme management, coordination, monitoring and evaluation (M&E), communication and knowledge management			
	n/a	C	0
Subcomponent 3.3: Emergency recovery and resilience post COVID-19			
	n/a	C	0
TOTAL NUMBER OF ESIAS AND PROJECT BRIEFS			36

Where categorisation by national legislation and SECAP categorisation differs, the more stringent categorisation is applied.

Activities not supported by IFAD

There are a number of activities that IFAD will not support or implement, for which SECAP (2017) refers to the IFC exclusion list⁴⁵. In the context of AFDP, these are:

- Production or trade in alcoholic beverages;
- Production or trade in tobacco;
- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCBs, wildlife (including marine fauna) or products regulated under CITES. AFDP will have to ensure beneficiary farmers use approved pesticides and herbicides. An indirect impact of AFDP may result in an increase in killing of threatened or endangered species as bycatch. AFDP must therefore ensure that sufficient provision is made for the protection and conservation of such marine fauna their habitats;
- Production or activities involving harmful or exploitative forms of forced labour⁴⁶ and/or

⁴⁵International Finance Corporation Exclusion List: www.ifc.org/exclusionlist

⁴⁶Forced labour means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

harmful child labour⁴⁷. As such forced labour may not be an issue for AFDP subprojects, but it should be noted that IFAD requires that all workers (farm hands, fishers, casual workers) are paid decent living wages, and that labour and working conditions and well-being of workers and local communities are fully considered and in line with ILO conventions. In rural societies, children often skip school during the harvest period in order to assist their families on the farms. Children working on agricultural projects are especially susceptible to harm from poor use and management of agrochemicals. AFDP supported subprojects will therefore need to ensure that harvesting (and other) activities do not interfere with children's education, and that children do not handle agrochemicals and are not otherwise exposed to these substances.

SECAP (2017) also states that IFAD will not support “*projects in areas of critical habitats or which result in conversion or degradation of such habitats*”. Emphasis will be to identify alternatives and ensure that any potential degradation or conversion is firstly avoided, and if not avoided, appropriately mitigated. With regard to the AFDP, it will be important that deep sea and artisanal fisheries do not creep into marine protected areas or areas that are important for spawning, breeding and congregation areas for marine fauna.

9.4.3 Environmental, Social and Climate Safeguards Documentation

The main types of safeguards documentation required to be prepared for AFDP are:

- vii. Environmental and social impact assessment studies (ESIAs) and Environmental and Social Impact Statements (ESISs) for Category A projects;
- viii. Project Briefs (PBs) - equivalent to SECAP's Category B Environmental and Social Management Plans) for Category B projects;
- ix. Standard Operating Procedures (SOPs) and activity-specific management plans;
- x. Climate risk analysis (CRA)
- xi. Integrated Pest Management Plan (IPMP) where agrochemicals are to be used;
- xii. Stakeholder Engagement Plan (SEP) to guide stakeholder consultations for the duration of the various interventions and subprojects.

AFDP will not cause any physical or economic displacement, since all activities will take place on existing government-owned land, or within territorial waters or in the EEZ. There is therefore no encroachment onto, or acquisition of, ancestral lands belong to indigenous groups, nor will any of the Programme's interventions and activities affect indigenous groups. Furthermore, the Programme will not trigger FPIC as defined by IFAD's How to do Note on Free Prior Informed Consent, since it involves agricultural and fisheries development subprojects in rural areas with no indigenous groups or minorities, and which will not affect land rights. Hence the need for a Resettlement Action Framework or Resettlement Action Plans, Indigenous Peoples Plans or FPIC Implementation Plan is precluded.

The various safeguard documents required to be prepared for AFDP subprojects and interventions are described below.

Environmental and Social Impact Assessment (ESIA)

Category A subprojects supported AFDP will require full ESIA to be conducted in line with the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018, culminating in the preparation of an Environmental and Social Impact Statement.

An EIS must cover, among others:

⁴⁷Harmful child labour means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.

- a) Administrative and institutional arrangements required for environmentally sound implementation of the environmental management, applicable national and international environmental legal and policy frameworks and their relevance to the project;
- b) A detailed description of the proposed project components, as well as all ancillary works including location, technologies to be used, materials and their quantities, construction period, etc;
- c) A detailed description the biophysical and socio-economic baseline conditions, bearing in mind that these provide the basis for impact analysis and monitoring;
- d) A description of other ongoing or planned developments in the project area that could have cumulative or synergistic effects on the project outcome;
- e) A stakeholder engagement plan (SEP) for consultations to be prepared and implemented during the ESIA study, and subsequently during subproject implementation;
- f) Outcomes of stakeholder consultations and public participation and recommendations for addressing stakeholder concerns in design and implementation;
- g) Identification and analysis of anticipated adverse impacts and risks, and cumulative impacts, as well as beneficial impacts;
- h) Analysis of alternatives, including project sites, access options, technologies, construction methodologies, etc, and a 'no project' alternative;
- i) Preventative, mitigation and enhancement measures;
- j) Recommendations for changes to project design;
- k) Environmental and social management plan (ESMP – which includes climate risk resilience proposals);
- l) Grievance redress mechanism;
- m) Monitoring and auditing requirements and procedures;
- n) Costs for environmental and social management and monitoring, and climate resilience measures.

The steps to be followed are specified in the Fourth Schedule of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018.

As ESIA's are done in tandem with the feasibility studies and design development, it is important that:

- Stakeholder concerns – particularly those of the communities and project affected persons - are addressed in the ESMPs, and if they are not, reasons for doing so should be explained;
- The subproject designs and activities should be presented to the target beneficiaries for their approval and acceptance.

All ESIA's are required to be undertaken by NEMC-registered expert. The outcome of the ESIA studies will be the preparation of Environmental Impact Statements (EISs), which will be submitted to the ESC Specialist for review to ensure that all critical issues are properly addressed and the documents meet both NEMC's and IFAD's quality standards. The EISs will then be submitted to NEMC for review and approval.

Project Brief

AFDP interventions falling under GoT/RGZ category B1 and B2, and SECAP Category B require a Project Brief to be prepared, which in SECAP terminology is equivalent to an Environmental and Social Management Plan (ESMP). In the preparation of Project Briefs/ESMPs, guidelines in the First Schedule of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018, together with SECAP's ESMP formats, will be closely followed. It will also be noted that ESIA reports must contain ESMPs. The steps to be followed are specified in the Fourth Schedule

of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018.

A Project Brief must state:

- a) The nature of the project in accordance with the categories identified in the First Schedule of the Environmental Management (Environmental Impact Assessment and Audit)(Amendment) Regulations, 2018;
- b) The location of the project including to the physical area that may be affected by the project's activities;
- c) The activities that shall be undertaken during the project construction, operation and decommissioning phases;
- d) The design of the project;
- e) The materials to be used, products and by-products, including waste to be generated by the project and the methods of their disposal;
- f) The potential environmental impacts of the project and the mitigation measures to be taken during and after implementation of the project;
- g) An action plan for the prevention and management of possible accidents during the project cycle;
- h) A plan to ensure the health and safety of the workers and neighbouring communities;
- i) The economic and socio-cultural impacts to the local community and the nation in general;
- j) The project budget; and
- k) Any other information which the Council may require.

The Project Briefs will be prepared by NEMC-registered experts hired by the PCU. The Project Briefs will be submitted to the ESC Specialist for review to ensure that all pertinent issues are properly addressed and the documents meet both NEMC's and IFAD's quality standards. The Project Briefs will then be submitted to NEMC for review and approval.

To the extent possible, stakeholder concerns should be addressed in the ESMPs. Where feasible, subproject designs and activities should be presented to the target beneficiaries for their approval and acceptance.

While the actual implementation of ESMPs will be implemented by contractors and implementing agencies, the DEMOs will be responsible for ensuring that these are implemented and will carry out regular monitoring. However, oversight, supervision and monitoring of ESMP implementation will be done by the ESC Specialist.

Standard Operating Procedures and Activity-Specific Management Plans

Depending on the scale and complexity of the individual interventions proposed under AFDP, standard operating procedures (SOPs) or activity-specific plans may need to be developed to ensure environmental protection, community and occupational health and safety and other risks and hazards. These may include the following:

- Traffic Management Plan;
- Waste Management Plan;
- Health and Safety Management Plan;
- Pollution Contingency Plan;
- Erosion Management Plan;
- Occupational Health and Safety Plan;
- Community Health and Security Plan;
- Emergency Preparedness, Response and Evacuation Plan;
- Cultural Heritage Management Plan.

These plans would be developed by the ESC specialist.

Climate Risk Analysis (CRA)

The purpose of climate risk screening is to determine the exposure of the project to climate-related risks (High, Moderate or Low) based on available information about historic climate hazard occurrences, current climate trends and future climate change scenarios, as well as to assess the likelihood of the project increasing the vulnerability of the expected target populations to climate hazards. It provides an opportunity to integrate climate issues into project design and therefore increase project resilience and hence sustainability. The Programme is screened as having Medium Risk, and therefore a Basic Climate Risk Analysis has been prepared for AFDP, and is presented Chapter 8).

However, as part of the environmental analysis– both for Project Briefs and for ESIA – the risks on specific interventions or subprojects needs to be assessed in the context of susceptibility to climatic events in their locations and resilience of the activities to those climatic events. The discussion should, for example, assess what crop seeds would be best suited to the selected subproject area over a projected time frame. Similarly, the sex of fish may be affected by warmer or cooler water temperatures (both in aquaculture ponds and in the deep sea) and this may affect reproductive capacity of particular species, and therefore recruitment levels.

Integrated Pest Management Plan (IPMP)

The AFDP will stimulate increased agricultural productivity, and therefore increased use of agrochemicals. Agrochemicals (mainly fertilizers, pesticides and herbicides) may be necessary to achieve higher yields, but they must be carefully applied as they have various adverse environmental and social impacts related to contamination of water bodies and soil and thereby threatening biodiversity, risks to farm workers and community health from exposure to agrochemicals, and releases of GHGs. In order to properly manage the use of pesticides, an Integrated Pest Management Plan (IPMP) must be prepared. Guidelines for the preparation of an IPMP are presented in Annex 5.

FAO defines integrated pest management as: *“the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms”*.

The following main steps can be considered as typical for an IPM approach⁴⁸:

- Prevention and/or suppression of harmful organisms. This is often best achieved by a combination of the following options:
 - crop rotation;
 - inter-cropping use of adequate cultivation techniques (eg. seedbed sanitation, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing);
 - where appropriate, use of pest resistant/tolerant cultivars and standard/certified seed and planting material;
 - balanced soil fertility and water management, making optimum use of organic matter;

⁴⁸<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/more-ipm/en/>

- prevent spreading of harmful organisms by field sanitation and hygiene measures (eg. by removal of affected plants or plant parts, regular cleansing of machinery and equipment);
- protection and enhancement of important beneficial organisms, e.g. by the utilisation of ecological infrastructures inside and outside production sites.
- Harmful organisms must be monitored with adequate methods and tools, where available. Such adequate tools should include observations in the field and where feasible warning, forecasting and early diagnosis systems.
- Based on the results of the monitoring it is decided whether and when to use what pest management inputs. Sustainable biological, physical and other non-chemical methods must be given priority over chemical methods if they provide satisfactory pest control.
- Pesticides should only be applied as a last resort when there are no adequate non-chemical alternatives and use of pesticides is economically justified.
- The pesticides applied shall be as specific as possible for the target and shall have the least side effects on human health, non-target organisms and the environment, while their use should be kept at minimum levels, e.g. by partial applications.
- Monitor the success of the applied pest management measures.

The IPMP should evaluate the impact of potential pests prior to programme implementation, identify the type of pests and assess the magnitude of impacts likely to be caused by those pests. In assessing the hazards of pesticide use, the toxicity of the pesticide and exposure to it are key elements. Therefore, as a minimum, the IPMP should:

- Screen the types of pesticides for toxicity by ensuring: they are effective against the target species, have negligible adverse impacts on human health and non-target species, will not precipitate resistance in pests, and do not fall into WHO class 1A or 1B;
- Aim to reduce exposure time or degree of exposure.
- Propose alternative non-pesticide management options (physical, mechanical and biochemical), as well as any available less toxic varieties of the pesticides.

The ESC Specialist, in collaboration with the NEMC, PHS-MOA and PPD-MANRLF will prepare the IPMP as applicable to crops promoted through AFDP. The IPMPs will then be distributed to all the regions where crop seed development and aquaculture activities are taking place. Key agencies (ie. TARI, ASA and ADC) will ensure that all those involved in interventions requiring the use of agrochemicals receive, understand and implement the IPMP. The IPMP must also stipulate national requirements and approved and appropriate agrochemicals used in the schemes. In developing the IPMP, reference should be made to SECAP's Guidance Statement #2 on Agrochemicals, and IFC's EHS Guidelines on Crop Production (revised 2015).

Stakeholder Engagement Plan (SEP)

SECAP requires that meaningful consultation with communities (especially targeted groups) and stakeholders that are likely to be affected by IFAD's operations be conducted throughout the Programme life cycle. The objective of stakeholder engagement is to ensure that all key stakeholders, and in particular beneficiary communities, contribute to the development of the Programme. As a result, broad community acceptance and support to the Programme interventions is achieved, ensuring environmental and social sustainability of the Programme as a whole. The Stakeholder Engagement Plan consolidates processes for guiding engagement with the entire range of stakeholders and establishing means for consultations and other forms of engagement, timing and frequency of engagement, responsibility for implementing the engagement activities and budgets for implementing the SEP.

The guidance below is drawn from the World Bank's Environmental and Social Framework (2017) and its Guidance Note for ESS10⁴⁹.

The objectives of the AFDP SEP will be to:

- Establish a systematic approach to stakeholder engagement that will help the PCU and implementing agencies to identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties;
- Assess the level of stakeholder interest and support for the Programme and to enable stakeholders' views to be taken into account in the Programme's and various intervention designs and their environmental and social performance;
- Promote and provide means for effective and inclusive engagement with project-affected parties
- throughout the Programme life cycle on issues that could potentially affect them;
- Ensure that appropriate information on environmental and social risks and impacts of the interventions and subprojects is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- Provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow the implementing agencies and/or the PCU to respond to and manage such grievances.

The first step in preparing a SEP is to carry out stakeholder mapping and analysis which will identify all stakeholders associated with the AFDP and determine how they influence the Programme or are affected by it. Stakeholders will include, for example, Programme beneficiaries, private and public sector, individuals, groups of individuals, institutions and organisations, etc. Stakeholders may be grouped as follows:

- a) Primary stakeholders who are directly involved in the development of the AFDP and its implementation;
- b) Secondary stakeholders who are not directly involved in the development and/or implementation of the AFDP, but are affected it;
- c) Tertiary stakeholders who may comprise key individuals, or groups, who may significantly influence the success of the Programme, but are not directly or indirectly involved in its development and implementation.

Once stakeholders have been identified and categorised, a communication plan will be prepared. This plan will determine for each stakeholder group:

- How communication/engagement will take place. For example, through face to face meetings, group discussions, emails, newsletters, through radio or newspapers, etc);
- When and how frequently each category of stakeholder will be consulted during the entire Programme period. For example, every week for the first 6 months of implementation, then every month, or every six months; or after the first crop seed harvest, and every month thereafter...;
- Who will be responsible for carrying out the engagement activities. For example, the District Facilitation Team, the research institutions, TAFICO/ZAFICO, the ESIA consultants...
- Costs for implementation of the SEP based on the proposed engagement activities, mode and frequency of communication.

All communication and engagement activities will be documented and this documentation filed and maintained at the PCU offices.

⁴⁹ World Bank (2016). World Bank Environmental and Social Framework. World Bank, Washington, DC

A preliminary stakeholder identification matrix is presented in Annex 6.

The SEP will be prepared by the ESC Specialist, in collaboration with the implementing agencies and District Facilitation Teams.

9.4.4 Disclosure of ESIA's and Project Briefs

In developing ESIA's and Project Briefs, consultations must be held with all levels: at community/village, district and national levels. During these consultations, the processes for disclosure of the documents should be communicated. IFAD's SECAP procedures also require that sufficient consultations have been carried out with key stakeholders (ie. the communities) in order to satisfy its requirements for Free Prior and Informed Consent (FPIC).

While the Project Briefs and ESIA's are being reviewed by NEMC, the ESIA's or Project Briefs and AFDP's Integrated Pest Management Plan (IPMP) will be disclosed nationally, at a location accessible to the general public, and in a form and language that the communities are able to understand, so that they may comment on any aspects/issues contained in the reports prior to their approval. PMO, MoA, MLF and MANRF and IFAD will be responsible for disclosure, and the disclosure period may take up to 60 days.

ESIA's, Project Briefs and the AFDP IPMP may have to be updated to reflect any received comments and indicate how those comments have been accommodated into the relevant subproject design and implementation procedures. If the comments have not been taken on board, the reason for doing so must be provided.

It is also important that the all designs for the proposed interventions are discussed and approved by the target beneficiary groups and any project affected persons.

9.4.5 Review and Approval of ESIA's, Project Briefs and IPMP

ESIA's and Project Briefs will be reviewed by the PCU ESC Specialist and then submitted for review and approval/clearance to NEMC.

The AFDP IPMP will be reviewed by IFAD and approved by the Plant Health Services Unit (PHS) of the MoA, Fisheries Development Division in the MLF, and the Plant Protection Division (PPD) of the MANRLF.

9.4.6 Gender Based Violence and Sexual Exploitation and Abuse

GBV/SEA Risk Factors

AFDP component interventions, depending on their scope, can exacerbate existing risks or can create new ones. Project-related risk factors may include:

- Women perceived as taking jobs away from men;
- Unequitable sharing of income between men and women after sale of produce;
- Failure by communities to relate with construction labourers who sometimes have different culture and language.

All these can exacerbate already existing inequities between women, men, and youth.

GBV/SEA Risk Mitigation Measures

The prevention and mitigation of GBV/SEA requires interaction and collaboration between major actors in the AFDP project sub components. These may include: i) the farmers especially women and their children, as well as other vulnerable populations, in communities where AFDP will be implemented; ii) the communities including cultural, religious and informal structures who may play a protection role; iii) contractors and consultants who are responsible for following contractually mandated social and labour practices that prevent abuse and violence; iv) Local Government offices who are critical to ensure that SEA prevention and accountability mechanisms are in place; v) workers including extension officers who will need to abide by codes of work ethics or codes of conduct. In the AFDP context, SEA/GBV risk level is considered to be of medium, and therefore the project will deploy the following strategies:

- Use the GALS methodology to handle GBV/SEA and other gender and youth related inequalities at the household, farmers' group and community level;
- Sensitize communities especially the vulnerable populations on the laws and services that can protect them and provide redress in case of an incident;
- Train farmers' and fishers groups in conflict management.

AFDP will work with service providers for survivors of SEA/GBV (for example through district community development officers, probation officers and police) to offer a minimum basic package of services, ideally including case management support, health services, psychosocial support, shelter— if needed— security and access to legal services.

9.4.7 Grievance Redress Mechanisms

Grievance Redress Mechanism (GRM) for AFDP

The goal of AFDP's GRM is to promote a mutually constructive relationship and enhance the achievement of Programme's development objectives. The GRM is to ensure that complaints are directed and expeditiously addressed by the relevant agencies which are to enhance responsiveness and accountability.

AFDP will utilize existing formal or informal grievance mechanisms to resolve disputes which may arise. Informal mechanisms include existing committees and or individuals in farmers groups responsible for conflict management to handle disputes. The formal grievance redress mechanisms exist at ward levels where the members of ward tribunals are involved in dispute resolution. For criminal cases, the police are required to intervene. Should disputes not be resolved at these levels, then the matter is taken to the district magistrate's, resident magistrate and finally high courts. Conflicts related to labour relations at work place between employee and employer are resolved by Commission of Arbitration and mediation.

Typical Grievances under AFDP

Likely common grievances in the project implementation areas will include:

- Non-payment of work done;
- Non-payments of infrastructure construction materials;
- Non-payment for land taken up by the project common infrastructures;
- Occupation, health and safety;
- Gender based violence;
- Sexual exploitation and abuse;
- Construction safety and nuisances caused by construction;

- Non-fulfilment of contracts.

Each project site is expected to operate its mechanisms of handling feedback and complaints. Feedback or complaints are to be encouraged among all workers and community members throughout the project and resolved without undue delay. This will also be closely monitored and reported through the different project levels including PCU level. Such a mechanism will be checked to ascertain its effectiveness, accessible and transparent procedures to receive and resolve complaints and where need be and for purposes of delivering this project, it shall then be reviewed and modified accordingly.

Guiding Principles for AFDP GRM

The GRM for the AFDP is designed on the following universal principles:

- Accessibility and social inclusion;
- Simplicity;
- Transparency;
- Inclusivity;
- Due process and impartiality;
- Prompt action;
- Qualifications (eg communication skills);
- Grievance uptake points;
- Analysis and feedback.

Steps of Grievance Redress in AFDP

The first step in setting up a GRM will be to appoint a committee to handle grievances. At the farmers' or fishers' group level, members will elect three members (male, female, youth) to form a Grievance Redress Committee (GRC) as part of the executive committee, or they may elect one person as a grievance handling officer. The DCDOs will meet with the grievance committee on a regular basis to handle any dispute referred to them. At the PCU level, MoA, MLF and MANRLF will nominate a member of staff to support the ESC Specialist at PCU level to handle grievances that may be escalated to this level.

A verbal or a written complaint from aggrieved person will be received by a person assigned in the project as the Grievance Officer (GO)/Counsellor/ Grievance Redress Committee (GRC) and recorded in a grievance log/book. Grievances can be lodged at any time. The following steps will be followed;

- i. Registration of the complaint;
- ii. Verification to determine eligibility undertaken by the Grievance Officer (GO)/Counsellor/ Grievance Redress Committee (GRC);
- iii. Processing, including hearings and resolutions;
- iv. Implementation and case closing.

The PCU ESC Specialist will be responsible for overall monitoring of the effectiveness of the GRMs for Programme interventions and subprojects.

IFAD's Complaints Procedure

In addition to AFDP's GRM, communities and individuals who believe that they are adversely affected by AFDP activities may submit complaints to the IFAD Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the IFAD's independent

Inspection Panel, which determines whether harm occurred, or could occur, because of IFAD non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the IFAD's attention, and IFAD Management has been given an opportunity to respond. Complaints in may also be lodged using the following email: SECAPcomplaints@ifad.org.

9.4.8 Monitoring

Performance Monitoring

Performance monitoring requires that:

- The various safeguards instruments (ESIAs, Project Briefs, ESMPs, and IPMP) have been prepared to the required standard, within the required timelines;
- The safeguards instruments have been reviewed and approved by the responsible entities;
- Environmental, social and climate mitigation measures, have been/are being implemented and that mitigation measures are effective. This includes monitoring the implementation of the ESMPs and IPMP, and also the grievance redress mechanism(s);
- The community is participating in all stages of the environmental and social management and monitoring processes;
- PCU and relevant officers in the implementing agencies have been trained in accordance with the capacity building proposals;
- Reports are prepared and delivered as required.

Performance monitoring will be done primarily by the ESC Specialist.

Examples of typical monitoring parameters and indicators are shown in Table 9-2 below:

Table 9-2: Typical Performance Monitoring Indicators

Monitoring Parameter	Monitoring Activity/Indicators	Target	Responsibility for Monitoring
Safeguards			
NEMC Approvals received	% of EISs, Project Briefs approved	100% ESIAs, Project Briefs approved	ESC Specialist
Licences and permits	% of required permits obtained	100% of required permits obtained	ESC Specialist
Safeguards training	# of PCU and relevant implementing agency officers trained	All PCU and relevant implementing agencies officers trained	ESC Specialist
Grievance Redress	# of subprojects having functioning grievance redress committees	All subprojects have functioning grievance redress committees	ESC Specialist
	# of grievances received	% of grievances resolved	ESC Specialist
Reporting	No. of quarterly reports received	4 quarterly reports received	ESC Specialist
	No. of annual reports received	1 annual report received	
Intervention Level Monitoring			
Workshops, Wet and Dry Docks	# of incidents of oil spills per month	Zero incidents of oil spills per month	ESC Specialist, EMU-MLF, MANRLF

Monitoring Parameter	Monitoring Activity/Indicators	Target	Responsibility for Monitoring
	# of workplace accidents and incidents per month	Zero workplace accidents and incidents per month	
Laboratory and storage	Quality of wastewater discharge	Effluent conform to national standards for wastewater discharge	ESC Specialist, EMU-MoA, Water Basin Office
Crop seed development expansion	Baseline acreage under crop seed cultivation	% increase of acreage under crop seed cultivation	ESC Specialist
Agro-processing	Quality of wastewater discharge	Effluent within national standards for wastewater discharge	ESC Specialist, EMU-MoA, Water Basin Office
Small scale irrigation schemes	# days water <u>not</u> available for irrigation in a year	Zero days water is not available in a year	ESC Specialist, EMU-MoA, Water Basin Office
	# days abstraction rate exceeds permitted rate in a year	Permitted abstraction rate for 365 days/year	
Stores/sheds	% of stores/sheds with functional fire-fighting equipment	100% stores/sheds have functional fire-fighting equipment	ESC Specialist
	% of stores/sheds with adequate ventilation	100% of stores/sheds have adequate ventilation	

Results Monitoring

Results monitoring involves monitoring compliance and effectiveness of the safeguards instruments, and also assesses the overall environmental, socio-economic and climate-related impacts of the Project's interventions in relation to its development objectives. Results monitoring will be done on an annual basis by the ESC Specialist, in collaboration with the DEMOs, DCDOs and Regional Environmental Experts. Results monitoring will be critical in providing feedback and lessons learned for any future phases of AFDP. Typical parameters for results monitoring are shown in Table 9-3 below. Social and socio-economic indicators should be measured specifically for the hubs in which the subproject interventions are taking place.

Table 9-3: Typical Results Monitoring Parameters

Monitoring Parameter	Monitoring Activity/Indicators
Water quality in water courses	Water quality at given sites downstream of, or proximate, to irrigation schemes, demonstration plots, agro-processing facilities, aquaculture ponds
Agrochemical releases into water courses	Water quality at given sample sites along drainage network, and point of discharge
Agrochemical concentrations in aquatic fauna	Noticeable number of times dead fish observed in rivers, marshlands and lakes
Soil quality	Nutrient depletion and loss in structure
	Agrochemical contamination
Economic activity in Project area	Changes in agricultural production and marketing
Socio-economic status	Changes in poverty levels
	Changes in nutrition status
	Changes in employment levels for women, men and youth

9.4.9 Quarterly and Annual Reviews

Quarterly and annual reviews will be undertaken by the ESC Specialist. These reviews are necessary to:

- Ensure that subprojects and interventions are complying with the processes established in the ESMF;
- Ensure that subprojects are compliant with the conditions and requirements stipulated in ESIA's, ESMPs and IPMP;
- Identify challenges and opportunities in order to learn lessons and thereby improve Programme performance; and
- Be able to determine the cumulative impacts of the Programme to establish attainment of its Development Objectives.

Each year, workshops will be held where environmental, climate change and social performance of the Programme will be reviewed and discussed, and recommendations made for improved Programme performance. These workshops will be attended by the ESC Specialist, DEMOs, DCDOs, members of the ministry EMUs, and Regional Environmental Officers, among others.

The Quarterly and Annual Review reports will be presented to PSC in order to ensure that the Programme activities are achieving its objectives. IFAD will participate in these presentations.

9.4.10 Reporting

Each implementing agency will submit monthly reports on environmental, social and climate-related issues to the PCU on their respective interventions and activities.

The PCU Programme Coordinator will submit quarterly and annual environmental, social and climate performance reports to the PSC and IFAD.

9.4.11 Annual Monitoring Audits

The purpose of auditing is to establish the level of compliance with national policy objectives and regulatory requirements and whether NEMC's conditions of approval attached to the EISs and Project Briefs are being implemented satisfactorily. The PCU will be responsible for ensuring that annual monitoring audits (for environmental and social compliance) are carried out once every year. The audits will be carried out by independent NEMC-registered expert.

Audit reports will be sent to the PSC and IFAD, as well as to NEMC and the respective implementing agencies. NEMC will review the audits and provide feedback to the PSC for passing onto the respective implementors.

9.5 Summary of Processes and Responsibilities

Table 9.4 below summarises the procedures and responsibilities described in this ESMF.

Table 9-4: ESMF Procedures and Responsibilities

ESMF Procedures	Activity	Responsibility
ESIA/Project Brief	Preparation of EIS or Project Brief, both containing ESMPs	NEMC-registered Expert
	Disclosure of EIS or Project Brief	MoA, MLF, MANRLF and IFAD
	Review of EIS or Project Brief	ESC Specialist
	Review and approval of EIS or Project Brief	NEMC
	Implementation of ESMP	Implementing agencies, contractors
	Supervision and monitoring of the ESMP developed for EIS or Project Brief	ESC Specialist and DEMOs
Other Plans/SOPs	Preparation of management plans / SOPs	Consultant or Technical Assistants, supervised by ESC Specialist
	Implementation of SOPs	ESC Specialist
Climate Risk Analysis	Climate risk monitoring	ESC Specialist, VPO's Office
IPMP	Preparation of IPMP	ESC Specialist
	Review and approval of IPMP	IFAD, PHS (MoA-TZ), and PPD (MANRF-ZNZ)
	Supervision and monitoring of implementation of IPMP	ESC Specialist, District Agricultural Officers, District Fisheries Officers
Grievance Redress Mechanism	Grievance receipt, verification, investigation, resolution, communication with complainant and referral to higher levels if necessary	GO/GRC Ward tribunals
	Monitoring of effectiveness of GRM	ESC Specialist
Performance monitoring	Safeguards instruments	ESC Specialist
	Intervention level activities	Implementing agencies
Results Monitoring	Project level environmental and social indicators	ESC Specialist, DEMOs, DCDOs, Regional Environmental Officer

ESMF Procedures	Activity	Responsibility
Reviews	Submission of quarterly review reports to PSC and IFAD	ESC Specialist
	Submission of annual review reports to PSC and IFAD	ESC Specialist, PCU ME&KM Officer
Reporting	Monthly environmental, social and climate resilience reports to PCU	Implementing agencies
	Quarterly and annual environmental, social and climate resilience performance reports to the PSC and IFAD	PCU Programme Coordinator
Annual Monitoring Audits	Audits of subprojects once every year	Carried out by independent Expert registered with NEMC. Overall responsibility ESC Specialist. Reviewed/approved by NEMC

10 Capacity Building

The successful implementation and monitoring of the environmental and social management framework, environmental and social management plans (ESMPs) will require that target groups and stakeholders who play a role in the implementation of the ESMF be provided with appropriate training and awareness. This is necessary because the implementation of the activities will require inputs, expertise and resources which will be adequately taken care of if the concerned parties are well trained. These groups are described below.

10.1 Existing Capacity

Capacity building of implementing agencies is a necessary step that needs to be taken in order to ensure that ESMF processes and requirements are followed during implementation of AFDP. The institutional arrangement for implementation of the program involves various implementers within the Ministry of Agriculture and Livestock and Fisheries as well as Ministry of Agriculture, Natural Resources and Environment in Zanzibar. The implementation arrangement is organized in such a way that there are those that have coordination roles especially Ministries and Program Coordination Unit while others will actually implement activities on the ground. Some beneficiaries of the program like crop and aqua farmers also fall under the category of implementers of activities and may require some sort of capacity building.

Having such a broad range of implementers of the program one cannot rule out issues of capacities. Although systematic capacity assessment has not been conducted to identify existing capacities and gaps but discussions with various implementers and beneficiaries show that there exist gaps in abilities of government agencies to manage environmental and social impacts and risks and to implement national laws and SECAP requirements. Furthermore, it was established that much as most of government agencies have staff who are educated up to bachelors or master's degree levels in their field of studies, their knowledge on the requirements of environmental legislations and regulations is not adequate to fully implement ESMPs to the required standard. Therefore, in order to ensure that environmental and social safeguards requirements are wholly integrated into AFDP during implementation, it is proposed that various types of training be conducted to various implementers.

10.2 Training Topics

Training will be delivered according to the needs of actual implementers of specific activities under AFDP. The following are topics will be covered during training:

- Requirements of the national environmental, social and climate policies, legislation, EIA regulations and administrative frameworks;
- Requirements of IFAD's SECAP and ERNM, Climate, Land and Disclosure Policies;
- ESMF processes, procedures and institutional arrangements to develop and implement required safeguards documents;
- Screening and rating as prescribed in the ESMF;
- Environmental, social and climate impact assessment, IPMP, Physical cultural resources assessment approaches and requirements;
- Preparation, implementation and monitoring of ESMPs, ESIA's, and IPMPs;
- Reporting and monitoring implementation of ESMPs and IPMPs;

- Environmental and social best practices - including proper application of chemical inputs, pest management, water saving agronomic practices, soil fertility management, and labour saving techniques;
- Conservation agriculture techniques;
- Sustainable fishing methods;
- Fisheries reporting protocols.

10.3 Target Audience

The target audiences for training are intended to be:

- Centres Managers and field officers of ADCs;
- Farm managers and Field officers of TARI;
- Managers and Lab staff of TOSCI;
- Managers and Field officers of ASA;
- Head of department and Fisheries officers at Bagamoyo District Council;
- Head of department and Fisheries officers at Pangani District Council;
- Head of department and Fisheries officers at Mafia District Council;
- Head of department and Fisheries officers at Kilwa District Council;
- Head of department and Fisheries officers at Fisheries development department-Zanzibar;
- Management team of TAFICO;
- Management team of ZAFICO;
- Leaders of Beach Management Units at Bagamoyo, Kilwa, Pangani and Mafia;
- Leaders of small holder farmers groups who will do seed multiplication;
- Leaders of seaweed farmers groups.

10.4 Training Approach

Training of Programme implementers at various levels will be integrated into planned training activities during the course of implementation. This approach has been adopted to effectively reduce cost as well as saving time that would have been spent in organizing separate training sessions for various implementers. Trainings will be organized at Aquaculture Development Centres, Mariculture Training Centres, ASA Centres, TOSCI Centre, TARI Centres, TAFICO and ZAFICO offices and district councils. All trainings will be organized by the PCU in collaboration with the implementing agency/department.

10.5 Training Summary

Table 10-1 below presents a summary of proposed trainings, target audience and training methods.

Table 10-1: Summary of Proposed Trainings

Training Topics	Target Audience	Training Methods
National environmental, social and climate policies, legislation, regulations and administrative frameworks requirements	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers, Leaders of farmers and fishers groups, Leaders of Seaweed farmers and Leaders of	Training workshops/seminar organized at respective centres/offices of implementing agencies

Training Topics	Target Audience	Training Methods
	Beach Management Units/Fisheries Cooperatives	
IFAD's SECAP and ENRM, Climate, Land and Disclosure Policies	ADCs, ASA, TARI, TOSCI, Fisheries Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
ESMF processes, procedures and institutional arrangements to develop and implement required safeguards documents	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Environmental, social and climate impact assessment, IPMP, PCR assessment approaches and requirements	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Preparation, implementation and monitoring of ESMPs, ESIA, IPMPs	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Reporting and monitoring the implementation of ESMPs and IPMPs	ADCs, ASA, TARI, TOSCI, Fishery Department-Zanzibar, Bagamoyo, Pangani, Kilwa and Mafia district fisheries officers	Training workshops/seminar organized at respective centres/offices of implementing agencies
Environmental and social best practices – including proper application of chemical inputs, pest management, water saving agronomic practices, soil fertility management, labour saving techniques,	Aqua Farmers groups, Crop Farmers groups, Fishers groups and Beach Management Units/Fisheries Cooperatives	Practical training sessions organized at respective centres/offices of implementing agencies
Conservation agriculture techniques	Farmers groups	Practical training sessions
Sustainable fishing methods, fisheries reporting	Fishers groups and leaders of Beach Management Units/Fisheries Cooperatives	Training workshop

11 ESMF Implementation Budget

The cost estimate for the implementation of activities proposed in this ESMF is USD 572,000, as presented in Table 11-1 below. This includes costs for undertaking the environmental and social analyses for Category A and B projects, costs to be paid to NEMC for review of these studies, as well as for carrying out the requisite annual monitoring audits. The budget also provides for, *inter alia*:

- Preparation and implementation of environmental and social management plans and SOPs;
- Supervision and monitoring of environmental and social monitoring activities;
- Annual ESC reviews be undertaken by the PCU, and attended by DEMOs, DCDOs, members of the ministry EMUs, and Regional Environmental Officers.

Costs for environmental and social training as described in Chapter 10 above, as well as the implementation of the Tuna Fisheries Management Plan, the Gender Action Learning System (GALS), environmental and social aspects of Knowledge Management and Monitoring & Evaluation, and Project Coordination and Management are accommodated within costs presented in the Programme Costabs.

Table 11-1: ESMF Implementation Budget (USD)

Budget Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total Budget USD
ESIAs, Project Brief preparation, NEMC reviews and annual audits	195,000	177,000					372,000
ESMS, SOPs, Supervision and monitoring of ESMPs; Annual ESC Reviews; Sensitisation	30,000	40,000	40,000	35,000	30,000	25,000	200,000
TOTAL ESTIMATED BUDGET: ENVIRONMENTAL, CLIMATE CHANGE AND SOCIAL MANAGEMENT (USD)	225,000	217,000	40,000	35,000	30,000	25,000	<u>572,000</u>

12 Summary of Key Issues Arising and Recommendations

12.1 Project Implementation Arrangements

The institutional arrangements for AFDP implementation as presented in the PDR have provided for an Environmental, Social and Climate (ESC) Specialist in the PCU who will be directly responsible for overseeing the environmental, social and climate-related aspects of the Programme interventions. It will be important for the ESC Specialist to work closely with the District Environmental Management Officer (DEMO) and/or District Natural Resources Officer (DNRO) and District Community Development Officer (DCDO), and to continuously liaise with the NEMC Regional Officer. The Programme Coordinator must ensure that the ESC Specialist is adequately facilitated to perform his/her duties as prescribed in the Terms of Reference in Annex 3. A budget has been proposed for the activities to be performed by this Specialist (see Chapter 11).

12.2 Project Categorisation

Deep sea fisheries and related processing activities may have significant adverse environmental and/or social implications that warrant further investigation. The impacts on tuna fisheries are sensitive because a number of tuna and tuna-like species are considered to be susceptible to overfishing or are currently overfished, and moreover any impact on their stocks will extend over a large area, beyond territorial waters. This is further compounded by the limited data available on fish stocks. In order to ensure sustainable tuna fisheries, it has been proposed that a Tuna Fisheries Management Plan will be developed and implemented under AFDP's Fisheries Component. Other AFDP subprojects and interventions such as crop seed development activities (involving small scale irrigation <100ha, seed testing and certification laboratories and a training centre), mariculture involving a training centre to promote technologies to improve seaweed farming, and aquaculture ponds, will have environmental, social and climate-related risks, but mitigation for these risks is easily applied/implemented at reasonable cost. SECAP requires that the overall Programme category is based on the categorisation of the highest risk activities; thus, the AFDP has been categorised as Category A.

12.3 Climate Risk Analysis

The Programme is screened as having Medium Risk, and therefore a Basic Climate Risk Analysis has been prepared for the AFDP (see Chapter 8). However, the risks of climate change on and from interventions or subprojects need to be assessed as part of the Project Briefs / ESAs that are required to be prepared, in the context of susceptibility to climatic events in their locations and resilience of the activities to those climatic events.

12.4 Physical and Economic Displacement

AFDP will not support subprojects or interventions that will cause any physical or economic displacement. Land to be acquired for demonstration plots, workshops and stores/sheds will be located on Government land, which will be selected provided no economic or physical displacement will take place. The FPIC process is therefore not required to be applied.

12.5 Indigenous Peoples

Although indigenous peoples exist in the larger Programme regions, their ancestral areas are not located near any of the Programme activities, and therefore the Programme will not affect any indigenous groups.

12.6 Community Involvement in Subproject Implementation

Community involvement will be critical throughout AFDP. In particular, AFDP should work with coastal communities to make them more resilient to the effects of climate change and environmental degradation. In this regard, it is recommended that the AFDP works closely with artisanal fishers, BMUs and Fisheries Cooperatives in Tanzania Mainland and Zanzibar in the sustainable management of the coastal ecosystems on which their livelihoods depend. Thus, they should be involved in developing the proposed Tuna Fisheries Management Plan. In addition, the AFDP should support the development of a Marine Spatial Plan, for which the involvement of coastal communities will be essential.

12.7 Capacity Building

During stakeholder consultations, it was noted that there is need for capacity building at the national and district levelsto implement environmental and social monitoring and management activities proposed in the ESMF. While the AFDP's lead agencies (PMO, MoA, MLF) have Environmental Management Units, their officers still need to be trained in IFAD's as well as national environmental and social requirements to ensure environmental and social mainstreaming is done from the very start of the Programme interventions.

It is therefore recommended that AFDP's capacity building activities include: requirements of the national environmental, social and climate policies, legislation and administrative frameworks, and IFAD's SECAP and ERNM, Climate, Land and Disclosure Policies; ESMF processes, procedures and institutional arrangements; screening of subprojects as prescribed in the ESMF; assessment of environmental, social and climate impacts; preparation, implementation and monitoring of ESMPs and IPMPs; reporting and monitoring implementation of ESIA's, ESMPs, IPMPs; HIV/AIDS and GBV/SEA sensitisation; grievance redress; and environmental and social best practices. These trainings can be included as modules within capacity building proposals for the various subcomponents so that they would not incur additional costs.

Annexes

- Annex 1: References
- Annex 2: List of Stakeholders Consulted
- Annex 3: Terms of Reference for the Environmental, Social and Climate Specialist for the PCU
- Annex 4: Screening and Categorisation of AFDP Interventions
- Annex 5: Guidelines for an Integrated Pest Management Plan
- Annex 6: Stakeholder Identification Matrix
- Annex 7: Study Team, Study Itinerary and ESMF Timelines

Annex 1: References

Documents

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Annex 2: List of Stakeholders Consulted

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Annex 3: Terms of Reference for the Environmental, Social and Climate Specialist for the PCU

Job Title: Environmental, Social and Climate Change (ESC) Specialist

Programme Name: Agriculture and Fisheries Development Programme

Duty Station: Dodoma

Reports to: Programme Coordinator

Key Duties and Responsibilities:

- Work closely with the lead agencies (MoA, MLF and MANRLF) as well as the implementing agencies (ASA, TARI, TOSCI, ADC, TAFICO, ZAFICO) to ensure the sustainable implementation of AFDP interventions.
- Work with multi-disciplinary team of Programme implementors, and other experts to support environmentally sustainable crop seed development and fisheries activities which will bring the intended benefits to small scale producers, aquafarmers, artisanal fishers, seaweed farmers and deep sea fishers.
- Establish a Programme level environmental and social management system.
- Prepare a training manual, and carry out training in environmental and social management requirements for implementing agencies.
- In collaboration with the PCU M&E Officer, participate in the socio-economic baseline to be prepared during start up, on which the MTR and Programme Completion performance will be evaluated;
- Ensure that the processes and procedures stipulated in the ESMF are followed by implementing agencies.
- Review ESIA and Project Briefs/ESMPs prepared for individual project interventions to ensure GoT/RGZ and IFAD requirements are well addressed, prior to submission to NEMC and ZEMA.
- Disclose environmental and social safeguards documents as required by SECAP and GoT/RGZ.
- Develop topic-specific management plans which can be easily adapted for each Programme intervention, as appropriate. These include for example: Integrated Pesticide Management Plan, Reservoir Safety Plan, Emergency Preparedness and Response Plan, Waste Management Plan, Chance Find Procedure, Traffic Management Plan (for construction phase);
- Ensure that AFDP activities are in compliance with GoT/RGZ environmental, social and climate-related policies, acts and regulations as well as IFAD's safeguards requirements.
- Oversee all environmental, social and climate-related management requirements in the Programme interventions;
- Oversee environmental, social, and climate resilience performance monitoring.
- Carry out Programme environmental, social and climate results monitoring.
- Supervise the annual internal review process to assess the overall performance, outcomes, and impacts of the Programme in respect of environmental, social and climate aspects.
- Monitor all grievances reported from the various Programme activities, and receive notification of, and documentation relating to the verification, investigation, resolution and communication with complainant.
- Work in close collaboration with other PCU officers and national agencies to facilitate and mainstream environmental and social management into AFDP activities;
- Support the Programme Coordinator in communications and compilation of knowledge in sustainable crop seed development and fisheries activities, facilitating workshops and

reaching out to experts and other organisations engaged in crop seed development and fisheries in Programme regions to share experiences and knowledge.

- Perform other duties assigned by the Programme Coordinator.

Qualifications, Skills and Experience:

- MSc/BSc in Environmental Sciences, Environmental Engineering, Natural resources management or related fields; with at least 8/10 years of experience;
- Thorough knowledge of GoT/REGZ and IFAD guidelines and IFC/WBEHS guidelines and procedures in environmental and social safeguards, environmental and social impact assessment and analysis, environmental monitoring and auditing;
- Experience in effective stakeholder engagement and grievance redress systems;
- Practical experience in application of environmental and social management approaches in the agricultural and fisheries sectors;
- Experience with adapting agricultural and fisheries practices to local biophysical and social conditions;
- Fluency in spoken and written English is essential;
- Excellent presentation and group moderation skills.

Annex 4: Screening and Categorisation of AFDP Interventions

The table below presents the screening, categorisation and justification for categorisation for the various interventions and activities to be undertaken under each subcomponent.

Table A4-1: Screening and Categorisation

Component/ Subcomponent Interventions	Activity categorisation		Number of studies	Unit cost	Cost in US\$	Justification	Remarks
	GOT	SECAP					
Component 1. Enhanced productivity of crop seeds and fisheries							
<i>Subcomponent 1.1 Crop seed systems development: National seed demand and supply coordination, Innovation development and Early Generation Seed production; Basic seed multiplication; Seed certification</i>							
Irrigated fields as seed farms <100ha in size including: laboratory, seed dryer, processing plants, workshops for farm equipment maintenance, water reservoirs, and seed treatment and storage facilities for produced seed, and boreholes	B1	B	2	10,000	20,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 for large scale cultivation between 50-100ha. SECAP categorisation based on irrigated fields <100ha	ASA plans to irrigate 2 of their farms. One is located at Msimba Morogoro and the other at Kilimi Nzega Tabora. Each farm will be <100Ha in size. Various facilities will be constructed at these farms including drilling of boreholes
Irrigation schemes for EGS, each approx 25ha in size including: laboratory, workshops for farm equipment maintenance, water reservoirs, seed treatment and storage facilities, and boreholes.	B2	B	2	7,000	14,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 for large scale cultivation between 50ha-10ha. SECAP categorisation based on irrigated fields <100ha	TARI irrigation facilities for EGS: 25Ha at Ilonga-Kiloso (Morogoro) and 25 ha at Selian, incl. construction of water reservoirs, pipes and fittings, drilling boreholes (150 mm steel, 150 m deep), water pumps (number to be determined), and installation of power sources

Component/ Subcomponent Interventions	Activity categorisation		Number of studies	Unit cost	Cost in US\$	Justification	Remarks
	GOT	SECAP					
Seed Testing Laboratories (infrastructure & equipment) Seed certification (field and lab control, electronic systems for seed authentication)	B1	B	3	10,000	30,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018. SECAP does not list laboratories, but impacts are generally known and site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures, so categorised as Category B.	TOSCI plans to construct 2 new labs, at Morogoro and Mwanza, and rehabilitation of existing seed laboratory at Arusha. The original plan to construct a training facility has been abandoned.
<i>Subcomponent 1.2: Fisheries and aquaculture development: Development of sustainable marine fisheries production system; Increasing aquaculture productivity and output; Increasing mariculture productivity and output</i>							
Mainland: Fishing vessels x4 (25m) for deep sea fishing, fish processing and storage >50T /day	A	A	1	40,000	40,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018. SECAP categorisation based on risks to biodiversity in sensitive natural ecosystems, and use of natural resources where little data exists on sustainability, exceeding carrying capacity and sustainable yield and risks to overfishing, capture of non-target species, habitat damage.	According to the First Schedule of the EIA Regulations, large scale fisheries fall into B1. Discussions with NEMC confirmed this activity would be Category A.
Zanzibar: Fishing vessels x4 (18m) for deep sea fishing, fish processing and storage <50T /day	A	A	1	40,000	40,000	Categorisation based on EIA Regulations of Zanzibar. SECAP categorisation based on use of natural resources where little data exists on sustainability, exceeding carrying capacity and sustainable yield and risks to overfishing, capture of non-target species, habitat damage.	
Support to artisanal fishing: provision of fishing gear to artisanal fishers (90 FADs)	B1	B	1	10,000	10,000	Not listed TZ or ZNZ Regulations. SECAP considers artisanal fisheries where information on fish stocks, fishing effort and sustainable yield as Category B. This information is available for inshore areas.	Cumulative impacts of 90 FADs. Due to numbers involved, categorisation and cost revised upwards
Aquaculture demonstration centres - at 3 ADC sites, incl borehole and one water supply system at Kingolwira	A	B	3	15,000	45,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 for large scale fisheries [small scale ≤500 m2, medium scale 500-600 m2, large scale >600 m2]. SECAP categorisation based on total area of ponds being <50ha	There are 3 ADCs centers. One at Kingowira, another at Mwamapuli Igunga and third at Rubambagwe Nzega. 10 functional and 6 nonfunctional ponds to be rehabilitated (200m2); construction

Component/ Subcomponent Interventions	Activity categorisation		Number of studies	Unit cost	Cost in US\$	Justification	Remarks
	GOT	SECAP					
							of 15 broodstock ponds,7 breeding ponds and 52 grow out ponds all 2000 m2; and 12 construction of nursery ponds (600m2)
Additional Borehole at Boma Road for Kingolwira ADC	B1	B	1	10,000	10,000	GOT categorisation as per First Schedule of the EIA and Audit (Amendment) Regulations of 2018 refers to abstraction of groundwater for bulk supply. Here borehole to be used only for irrigation, not for bulk supply. Hence categorisation considered B1. Groundwater availability considered to be adequate in this area (minimal risk of aquifer depletion). Therefore intervention falls under SECAP Category B.	The center at Boma road in Morogoro is part of Kingolwira but since it is at a separate location a borehole will be drilled thus separate EIA/Project brief
Tissue culture nursery in Unguja, incl. seaweed technologies and demonstration farm	n/a	B	1	7,000	7,000	Categorisation based on EIA Regulations of Zanzibar	1 sea weed tissue culture nursery established and operationalised in Unguja. This will be in the Indian ocean where Tissue Culture technology will be demonstrated to seaweed farmers
Mariculture training centres x 2 (Unguja and Pemba) <360 students	n/a	B	2	7,000	14,000	Categorisation based on EIA Regulations of Zanzibar	The mariculture training centres will be like schools where people will gather and receive trainings/lecture on mariculture farming then visit demonstration sites in the sea where seaweed will be grown
Component 2. Improved market access, value addition and private sector development							
<i>Subcomponent 2.1. Quality seed use and business development: Zonal multi-stakeholder innovation platforms. Promoting offer and access to improved seeds. Promoting awareness and demand for improved seeds</i>							
Distribution networks, linkages between agrodealers and farmers to facilitate access to improved seeds	n/a	C	0	0	0	Does not involve activities that require environmental/social analysis	

Component/ Subcomponent Interventions	Activity categorisation		Number of studies	Unit cost	Cost in US\$	Justification	Remarks
	GOT	SECAP					
Promotion of use of improved varieties and CSA practices (targeted support to extension)	n/a	C	0	0	0	Does not involve activities that require environmental/social analysis	
Support FO for services for member access to inputs and markets	n/a	C	0	0	0	Does not involve activities that require environmental/social analysis	
ICT platforms for dissemination of information on seed availability (improved varieties and quantities)	-	B	1	7,000	7,000	ICT and associated activities not listed in TZ or ZNZ Regulations or SECAP. Here considered to be Category B since scale and magnitude not expected to be significant.	Issues of e-waste. May require ESMP
Sub-component 2.2. Fish market development and value addition: Reducing post-harvest losses. Private-Public-Producer partnerships (4Ps) joint venture for deep sea fishing. Increasing value/income from aquaculture production							
Ice plants for smallscale fishers x 8 (cap <50T/day)	B1	B	8	7,000	56,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 - industrial fish processing and storage >10T/day and <50T/day. SECAP categorises agroprocessing facilities as Category B. In addition, impacts are generally known and site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures.	There are 4 landing sites. Two will have fish markets constructed with cold rooms and ice making plants. 1 market at Bagamoyo has EIA certificate issued. So, EIA will done for 1 market at Kipumbwi, EIA for 3 cold rooms and EIA for 8 Ice making plants. Here ice plants, electric driers and cold storage categorised as B1, but likely to be considered B2 due to scale and target beneficiaries
Cold chain: Cold storage facilities (40 t/facility) x2 Refrigerated trucks x2	B1	B	2	7,000	14,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 - industrial fish processing and storage >10T/day and <50T/day. SECAP categorises agroprocessing facilities as Category B. In addition, impacts are generally known and site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures.	

Component/ Subcomponent Interventions	Activity categorisation		Number of studies	Unit cost	Cost in US\$	Justification	Remarks
	GOT	SECAP					
Electric driers for small pelagics	B1	B	4	7,000	28,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 - industrial fish processing and storage >10T/day and <50T/day. SECAP categorises agroprocessing facilities as Category B. In addition, impacts are generally known and site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures.	
Construction of fish market at Kipumbwi, incl. storage and ice plant	B1	B	1	10,000	10,000	GOT categorisation based on First Schedule of the EIA and Audit (Amendment) Regulations of 2018 - major urban market. SECAP is not specific on categorisation of markets, but here impacts are generally known and site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures.	
Dagaa solar powered drying racks x80	n/a	B	1	10,000	10,000	Categorisation based on EIA Regulations of Zanzibar. SECAP categorises agroprocessing facilities as Category B. In addition, the interventions are small in size, impacts are generally known, are site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures.	Cost adjusted upwards to accommodate number
Solar drying tents for seaweed and machines for grinding dried seaweed x10	n/a	B	1	10,000	10,000	Categorisation based on EIA Regulations of Zanzibar. SECAP categorises agroprocessing facilities as Category B. In addition, the interventions are small in size, impacts are generally known, are site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures. 1 ESMP should suffice for all 10 dryers	

Component/ Subcomponent Interventions	Activity categorisation		Number of studies	Unit cost	Cost in US\$	Justification	Remarks
	GOT	SECAP					
Fish feed mills	n/a	B	1	7,000	7,000	Categorisation based on EIA Regulations of Zanzibar. SECAP categorises agroprocessing facilities as Category B. In addition, the interventions are small in size, impacts are generally known, are site specific, can be readily remedied by appropriate preventive actions and/or mitigation measures.	Number not known. Assume one ESMP will suffice for all.
Component 3. Programme Management and Coordination							
Subcomponent 3.1: Policy engagement and institutional strengthening							
Institutional reforms in public institutions	n/a	C	0	0	0		
Development of aquaparks (aquaculture cluster growth model)	n/a	C	0	0	0		
Subcomponent 3.2 Programme Management and Coordination							
Programme management, coordination, monitoring and evaluation (M&E), communication and knowledge management	n/a	C	0	0	0		
Subcomponent 3.3 Emergency recovery and resilience post COVID-19							
Specific interventions not identified at this time	n/a	n/a	0	0	0		
TOTAL ESTIMATED COST FOR ESIA STUDIES AND PROJECT BRIEFS, NEMC REVIEW AND AUDITS			36		372,000		

Annex 5: Guidelines for an Integrated Pest Management Plan

This guideline is adapted IFAD's Social Environmental and Climate Assessment Procedures (SECAP 2017) Guidance Statement #2 on Agrochemicals.

Introduction

The use of agrochemicals has been critical to raising crops for food. Agrochemicals include fertilizers, liming and acidifying agents, soil conditioners, pesticides, and chemicals used in animal husbandry such as antibiotics and hormones. "Pesticides" are chemicals that are used to kill or control pests. In agriculture, this includes herbicides (weeds), insecticides (insects), fungicides (fungi), nematocides (nematodes), and rodenticides (vertebrate poisons). Different categories of pesticides have different types of effects on living organisms. In agriculture, pesticides are used to kill pests that damage crops. By their nature, pesticides are potentially toxic to other organisms, including humans, and need to be used safely and disposed of properly. Absence of safety precautions can result in accidents, sometimes with serious consequences. Those at greatest risk are those who experience the greatest exposure—these typically being smallholder farmers, farm workers and their families. These groups are also often poor since bigger farms are more likely to provide training on pesticide risk avoidance to their workers. The unsafe use of agrochemicals also poses serious negative risk on the environment (soil, water, plant, wildlife, microorganisms, etc).

Where there is a significant increase in the use of agrochemicals, IFAD requires a pest management or mitigation plan to be prepared. While IFAD projects promote the use of agrochemicals directly, as a project component for increased crop productivity, or – more commonly – indirectly, by increasing the availability of short-term credit for farm inputs or water for irrigation, which encourages increased use of agrochemicals. IFAD emphasises the need for careful selection of the type of agrochemicals and management of their use (timing, dosage, mode of application, etc.) can reduce to acceptable levels the environmental risks they pose while providing the needed benefits for increased production with lower financial and health risk costs.

Policy, Legislative and Institutional Frameworks for Pest Management in Tanzania

The following description of the policy and regulatory frameworks for pest management in Tanzania is taken from the IPMP prepared for the PMO's SAGCOT Investment Project⁵⁰

National Policies and Legislation

National Environmental Management Policy (1997)

The National Environmental Management Policy (NEMP) is set to achieve the following in terms of environmental management: "Integrated multisectoral approaches necessary in addressing the totality of the environment; Fostering government-wide commitment to the integration of environmental concerns in the sectoral policies, strategies and investment decisions; Creating the context for planning and coordination at a multisectoral level, to ensure a more systematic approach, focus and consistency, for the ever-increasing variety of players and intensity of environmental activities".

⁵⁰URT (2014); Southern Agricultural Growth Corridor of Tanzania (SAGCOT) Investment Project Integrated Pest Management Plan (IPMP); PMO.

The policy has identified six key major environmental issues in the country. These are land degradation, water pollution, air pollution, loss of wildlife habitats, deterioration of aquatic systems and deforestation. Hence the policy has the following objectives with respect to environmental management in agriculture:

- Ensure sustainability, security and equitable and sustainable use of natural resources;
- Prevent and control degradation of land, water, vegetation, and air;
- Conserve biological diversity of the unique ecosystems the country; and
- Raise public awareness and understanding of the essential linkages between environment and development, and
- Promote individual and community participation in environmental action.

National Agriculture Policy 2013

The policy acknowledges that increased use of modern inputs (fertilizers, agrochemicals, seeds, farm machinery) is a pre-requisite for achieving sufficient agricultural production and growth to meet economic development, poverty reduction and food security and nutrition goals. It further notes that prevalence of crop pests and diseases is creating a great economic risk to crop development in Tanzania. Challenges that are affecting effective control of pests and diseases in the country include inadequate capacity for pest surveillance; inadequate pest risk analysis and bio-security measures; weak pest monitoring and control mechanisms; limited management options for pests and diseases; and weak sanitary and phytosanitary services. To address this, the Policy specifically states that:

- The Government shall enforce laws and legislation to safeguard farmers from the supply of substandard inputs;
- Input production, procurement and distribution shall be strengthened;
- Private sector participation in multiplication of pre-basic and basic seed shall be promoted;
- Domestic production, multiplication and distribution of agricultural inputs shall be promoted to involve both public and private sectors;
- Farmers shall be supported to access modern inputs;
- Agro-chemical and fertilizer manufacturing industry shall be developed.
- Pest and disease surveillance, system and control mechanisms shall be strengthened;
- The Government shall collaborate with neighbouring countries, international organizations and other institutions dealing with plant health services in combating pests and diseases outbreaks;
- Pest free areas shall be protected from introduction of pests of quarantine importance; and
- The Government shall strengthen sanitary and phytosanitary, quarantine and plant inspectorate services.

The Environment Management Act (2004)

This Act requires establishment of sector environmental management Units at each Ministry, with the responsibility of ensuring compliance on environmental matters. The Sector Environmental Units have, among others, the responsibilities of:

- Advising and implementing policies of the government on the protection and management of environment
- Coordinating activities related to the environment of all persons within the Ministry
- Ensure that environmental concerns are integrated into the Ministry development planning and project implementation in a way which protects the environment
- To prepare and coordinate the implementation of environmental action plans at the national and local levels as required under this Act
- To refer to the council any matter related to the enforcement of the purposes of this Act

- To ensure that sectoral environmental standards are environmentally sound.

In relation to agricultural chemicals, the Minister responsible for Environment shall have the power to make regulations pertaining to Persistent Organic Pollutants (POP) and pesticides issues, to ensure that they are in compliance with the Stockholm Convention on POP of 2001 and Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade of 1998.

Plant Protection Act No. 13 (1997)

This Act has made provisions for consolidation of plant protection to prevent introduction and spread of harmful organisms, to ensure sustainable plant and environmental protection, to control the importation and use of plant protection substances, to regulate export and imports of plant and plant products and ensure fulfilment of international commitments, and to entrust all plant protection regulatory functions to the government and for matters incidental thereto or connected therewith. The activities of Tanzania Pesticides Research Institute (TPRI) are incorporated into the Act. In relation to IPM, importation of biological control agents is not allowed unless under the prescribed permit by the Ministry responsible for Agriculture.

The Plant Protection Act 2013 (Draft)

The main objective of this Act is to prevent the introduction or spread of plant disease or pests; provide for phytosanitary control measures; facilitate trade in plants and plant products and to regulate other matters connected thereto. The Act is meant to establish a National Plant Protection Organization (NPPO). The NPPO core function will be to serve as a national contact point for the IPPC and shall develop mechanisms for consultation between responsible authorities for enforcement of the phytosanitary legislation for Tanzania and promotion of integrated pest management and control.

The Pesticide Management Act 2013 (Draft)

An Act to provide for the life-cycle management of pesticides, regulating the manufacture, formulation, importation into and exportation from the country, transport, storage, distribution, sale, use and disposal of pesticides and to regulate other matters connected thereto. This Act will establish the Tanzania Pesticides Control Authority (TPCA) responsible for monitoring the trade and use of pesticides, and collecting statistical and other information concerning the import, export, manufacture, distribution, sale and use of pesticides, about pesticide residues and safe use. The act prohibits the importation, manufacturing, formulating, transportation, distribution, exportation or sell of banned, obsolete pesticides under PIC and POPs and any other pesticide banned or severely restricted in the country of origin under any circumstances within the country or any pesticide for which is not in the category/group currently under use.

In relation to IPM the authority suggests development and availability of safer alternatives to existing pesticides as per latest global research and development without compromising the importation of biological control agents as allowed in the Biological control agents protocol developed within the Plant Protection Act of 1997.

Pesticides Control Regulations GN 193 of 1984

The objects of these Regulations are – (i) to ensure the effectiveness of pesticides used in Tanzania for the production of food and fibre and for the protection of public health and safety: (ii) to protect against possible harmful effects of pesticides including: (a) impairment of the health of persona

handling pesticides or using or consuming products or substance treated with pesticides; (b) impairment of the health of domestic animals including honey bees from direct application or pesticides or from the consumption of plant or animals treated with pesticides (c) damage to cultivated plants from direct application or pesticides or from persistent soil residues and (d) damage to the natural environment including impairment of the health of wildlife and contamination of waterway lakes and other water bodies.

Plant Health Act (2020)

A Plant Health Bill was passed in Parliament in May 2020, and is in the process of being formally enacted. It is intended to:

- Consolidate the Plant Protection Act and the Tropical Pesticides Research Institute Act and put in place a consolidated legal framework for plant health and pesticides.
- Establish the Tanzania Plant Health and Pesticides Authority which shall be the main regulatory body for pesticides and plant health.
- Introduce a legal framework to facilitate competition and efficiency in plants and plant products trade in Tanzania and internationally.
- Introduce safeguarding of human health and the environment / ecosystem by ensuring sustainable and efficient management of pesticides, plant health and phytosanitary issues with an effective monitoring and surveillance system of inspectors and reputable laboratory analysis.

Institutional Framework

Key Ministries

The Ministry of Agriculture (MoA) and Ministry of Livestock and Fisheries (MLF) in Tanzania Mainland, and the Ministry of Agriculture, Natural Resources, Livestock and Fisheries (MANRLF) in Zanzibar advocate the use and dissemination of IPM approaches through the agricultural extension services. On the aspects of migratory pests and diseases, MoA and MLF cooperate fully with the neighbouring countries (through regional initiatives on outbreak pest control) in the collective effort to control the damage of such pests. MoA also has in place supervisory and regulatory instruments to register, license, monitor and supervise manufacturers, importers, distributors and users of agricultural inputs such as pesticides, fertilizers and herbicides.

Environmental Management Unit at MoA and MLF

Environmental Management Units have been established at the MoA and MLF. The functions of the Units are: to monitor compliance with the requirements of Environmental Management Act (2004) within the Ministries; to advise on policy, legal reviews on environmental management in the agricultural sector in collaboration with Vice President's Office (Division of Environment); to monitor environmental protection compliance in the agricultural, livestock and fisheries sectors; and to oversee the implementation of agricultural, livestock and fisheries strategies in order to minimize adverse social-economic impacts due to agricultural activities.

Plant Health Services Unit of MoA

Plant Health Services (PHS) is a unit in the Ministry of Agriculture which deals with Registration of pesticides and control of Migrant pests.

Plant Protection Division, MANRLF

The MANRLF maintains the Plant Protection Division (PPD) to monitor, guide and strengthen plant health services in Zanzibar. The Division's mandate includes phytosanitary control, plant quarantine, pesticide monitoring, and the provision of training in the safe use of pesticides.

Tropical Pesticides Research Institute (TPRI)

TPRI's mandate is to undertake, promote, evaluate and disseminate findings on the management of pests, pesticides and biological diversity. TPRI is engaged in research and services on management of pests, pesticides and biodiversity to enhance food security, safeguard human health and for facilitating internal and external trade for sustainable development. The Institute is semi-autonomous operating through the MOAs.

International Conventions and Regional Agreements with implications on the Use of Agrochemicals

- Basel Convention, 2006. The Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and Their Disposal was concluded in Basel, Switzerland, on March 22, 1989, and entered into force in May 1992. Now ratified by 149 countries including 32 of the 53 African countries, the focus of this convention is to control the movement of hazardous wastes, ensure their environmentally sound management and disposal, and prevent illegal waste trafficking (UNEP, 2006).
- Rotterdam Convention, 1999, aims to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use. Governments began to address the problem of toxic pesticides and other hazardous chemicals in the 1980s by establishing a voluntary Prior Informed Consent procedure (PIC). PIC required exporters trading in a list of hazardous substances to obtain the prior informed consent of importers before proceeding with the trade.
- The FAO International Code of Conduct on the Distribution and Use of Pesticides (2002). It establishes voluntary standards for public and private institutions involved in the distribution and use of pesticides. The Code sets out a vision of shared responsibility between the public and private sectors, especially the pesticide industry and government, to ensure that pesticides are used responsibly, delivering benefits through adequate pest management without significant adverse effects on human health or the environment.
- FAO Guidelines on Good Practice for Ground Application of Pesticides, 2001. FAO produced an expanded series of pesticide application equipment related guidelines to cover the application of pesticides using any ground-based field crop sprayers, including operator carried and tree and bush crop sprayers.
- The Safety and Health in Agriculture Convention (ILO 184). This was adopted by the conference of the International Labour Organization (ILO) addresses the protection of workers in the agricultural sector. More people work in agriculture than in any other sector, more workers are injured in agriculture than in any other sector, and pesticides are a major cause of injury and death. In addition, more children work in agriculture than in any other sector and they are differently and particularly vulnerable to the toxic effects of chemicals such as pesticides. A specific section of the convention deals with the sound management of chemicals and advises governments to adopt good management practices for chemicals, to inform users adequately about the chemicals they use and to ensure that adequate mechanisms are in place to safely dispose of empty containers and waste chemicals.
- Africa Stockpiles Programme (ASP): The Africa Stockpiles Programme (ASP) focused on obsolete pesticides and their associated waste. The programme addressed the major issues

in prevention of accumulation of obsolete pesticides and its associated wastes by putting in place an empty pesticides container maintenance strategy and the ASP sustainability Roadmap. The strategy identifies the mechanism of dealing with empty pesticide containers and provides the framework of up-scaling the process through the stakeholder partnership and cost sharing initiatives. The strategy addressed the following: increased awareness amongst pesticide users on the best practice of handling pest containers; sensitization of the communities on risks of reusing empty pesticide containers for other purposes; provision of training and support of local agricultural authorities to promote safer use of pesticides; quantification of the build-up of empty pesticide containers in the government stores and the farming communities; and establishment of the recycling facilities of the pesticide packaging for which sustainable disposal/recycling options are required.

Impacts of Agrochemicals

Several potential environmental and social consequences are associated with the use of agrochemicals:

- *Air pollution*: Pesticides can contribute to air pollution as pesticide drift occurs when pesticides suspended in the air as particles are carried by wind to other areas, potentially contaminating them. Ground spraying produces less pesticide drift.
- *Water pollution* from the use of agrochemicals may affect both groundwater and surface water through leaching and run-off. High concentrations of nitrates and phosphates can lead to eutrophication in rivers, lakes and coastal waters. High levels of nitrogen and phosphorus cause the depletion of oxygen in lakes and reservoirs by excessive algal and bacterial growth (eutrophication), eventually reducing aquatic life. The problem is aggravated by organic effluents, especially human sewage, and eutrophication in drinking water reservoirs is a public health concern. In addition, the toxic compounds contained in some pesticides and herbicides may pollute groundwater and surface water, posing threats to both human and animal health, including marine and freshwater fish.
- *Hazards to humans and animals*: Improper application of pesticides, overuse and neglect of safety periods between application and harvest often result in high residues in harvested crops and processed food and unnecessary exposure of farmers and their families to toxic material. Contact can be direct (skin or eye) or through inhalation or ingestion. Agrochemical residues are also known to persist in contaminated clothing. Pesticides may move off target and poison fish, cattle, beneficial insects, pollinators, soil organisms and nearby communities. Pesticides may have acute or chronic toxic effects. While people are aware of their acute effects, which vary from mild irritation to death, their chronic toxicity results from the accumulation of small amounts of residue in consumed food – of both plant and animal origin – in the human body over a long period, leading to various toxicity symptoms and diseases.
- *Bioaccumulation* implies that toxic levels increase over time and along the food chain (e.g. in carnivorous mammals or predatory fish). The bioaccumulation of toxins resulting from agrochemical use is a very serious issue, causing biodiversity loss and disease in both animals and humans, especially in poor rural communities that rely on wild food. Bioaccumulation is also very serious for the marine and freshwater life that is critical to a large proportion of the poor.
- *Pest resurgence*: Misuse of pesticides can cause elimination or suppression of the natural enemies that keep insect pest populations under control and at economically acceptable levels. This suppression leads to outbreaks of secondary pests previously not considered important. This not only affects crops, but can also affect livestock and community health.
- *Pest resistance*: The misuse of pesticides can lead to the build-up of resistance in insect pests, pathogens and weeds. This resistance has great economic and ecological consequences because increasing amounts of more expensive and toxic pesticide formulations are required

to achieve pest control. In some areas of the world, pesticide overuse has created a population of resistant pests, which threaten subsistence and cash crops, livestock and human health.

- *Loss of bees and other beneficial insects*: Pesticides can kill bees and other beneficial insects that are essential for the pollination of indigenous plants, honey production, etc., thus causing negative impacts on the food production, livelihoods and incomes of poor rural communities.
- *Soil fertility loss* may be related to excessive or inappropriate application of chemical fertilizers, which could result in soil salinization, sodicity or acidification, depending on the inherent soil chemistry, the quality of irrigation water and other external factors (such as acid rain). Soils may also lose their fertility due to the lack of, or insufficient application of fertilizer, which causes a decline in natural nutrient availability. Degraded agricultural land that has lost its fertility may retain its capacity to recover through fallowing. However, beyond a critical point, fertility loss may become an irreversible phenomenon. While inorganic fertilizers may improve soil fertility, various forms of organic inputs such as manure, also improve the soil structure, which enhances microbial activity, air and water infiltration and retention.
- *Soil loss* is caused by wind and water erosion on lands that have been overgrazed or overutilized for crops. Marginal and poor soils are particularly vulnerable to erosion, especially if soil fertility is depleted and natural vegetation fails to regenerate adequately. Loss of topsoil and valuable organic matter is usually irreversible.
- *Greenhouse Gases*: Agrochemicals are among the most important secondary sources of greenhouse gas (GHG) emissions in the agriculture sector.
- *Climate change* is expected to affect the population and life cycles of several pests and diseases, mainly through the influence on their distribution and expansion ranges. More invasions by introduced or migrated alien species of pests and diseases are expected, with higher intensities of infection. However, the impact of climate change will be most clear through its effect on crops, as crops growing under various types of climate stress will be more susceptible and vulnerable to pests and diseases. Anticipated effects include reduced tolerance and resistance levels in crops, and losses in biodiversity, especially of wild crop species needed for resistance breeding. Because of higher pest and disease pressure, more pesticides will be applied, which might lead to increased misuse and overuse if not well managed (World Bank, 2009). Environmental instability and increased incidence of extreme weather may also reduce the effectiveness of pesticides on target pests, or result in more injury to non-target organisms. However, climate change may affect biological control negatively or positively.

Potential Mitigation Measures

The use of agrochemicals can also be reduced or eliminated by promoting indigenous farming practices, such as the cultivation of locally adapted crops and varieties, which are often resistant to local pests and diseases; the use of locally available natural biopesticides and pest-repellent crops, with adapted cultivation strategies (seeding periods and methods, etc.); the use of natural on-farm animal and green manure; and organic farming techniques. Ensuring diversity in the crops and varieties cultivated on a farm, especially indigenous crops, reduces the risk of high-level pest infestations and disease epidemics and facilitates enhanced ecosystem services, including through pollinators and active soil fauna and flora.

Some measures for management of agrochemicals are described here:

Fertilizer management:

- Ensure that dressings do not exceed recommended doses.
- Reduce leaching through appropriate choice of fertilizer to suit soil conditions, split applications and fertilizer placement.
- Reduce run-off through incorporation of fertilizer into soil, timing of applications to avoid erosive rains, and soil and water conservation measures.
- Limit nitrate use in sensitive watersheds serving urban areas.
- Select non-ammonium sources of nitrogen such as urea.
- Carry out liming (usually to pH 5.5 for tropical crops).
- Explore the potential for increasing production without the use of chemical fertilizers, especially using indigenous technologies, including organic fertilizers, and supporting integrated soil fertility systems.
- Promote community education on improving indigenous practices to maximize production, avoiding chemical fertilizers in favour of local options that are available on farm.
- Support crop management practices that increase the nutrients available to crops, including by: (i) using more organic and less inorganic fertilizer;(ii) increasing the efficiency of fertilizer use through appropriate fertilizer selection, timing and split applications; (iii) increasing nutrient recycling using crop residues and livestock grazing after crop₄ harvest (mixed farming); use of nitrogen fixing trees, where feasible (agroforestry); and (iv) improving rotations (e.g. inclusion of legumes, multicropping).
- Monitor receiving water courses and soil for fertility to avoid overapplication of agrochemicals.

Pesticide management:

- The project should be explicit about the pesticides it proposes, including those that farmers are expected to use when credit for input purchases is made available. **For projects that entail significant pesticide use or have the potential to result in increased pesticide use, a pesticide management plan is prepared, either as a stand-alone document or as part of the Environmental and Social Impact Assessment (ESIA) or ESMP.** The most important criteria for assessing the environmental impact of a pesticide **are its toxicity level and the degree of biodegradability. Consideration should also be given to residue-level guidance** for countries that intend to export crops. Unregistered, restricted-use or experimental-use pesticides should be avoided, unless their use in the project has been reviewed and approved by the Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) Joint Meeting on Pesticide Residues.
- Pesticides in WHO Class Ia and Class Ib₅ should generally be avoided.
- For general use, the formulated product should be at a low enough concentration to be in at most a WHO Class II. Low-toxicity formulations should be favoured: from least toxic to most toxic, the options are granule, dust, wettable powder, flowable, emulsifiable concentrate, ultra-low volume and fumigant.
- Low-concentration granulars, seed dressings, bait formulations and pheromone traps generally present the least hazard to users and are especially suitable for small-scale farmers unfamiliar with pesticide use; they cause minimal environmental contamination and minimal adverse effects on non-target organisms.
- Aircraft application should be avoided whenever possible, and used only when speed in covering large areas is essential, such as in the emergency control of migratory pests.
- Safe application equipment and servicing facilities should be promoted, along with correct calibration of equipment. Training should be provided for personnel and farmers applying the pesticides.
- Protective clothing, including masks, gloves and boots, should be provided or promoted, especially for pesticides that are absorbed through the skin. However, improper use of

protective clothing may be even more hazardous than doing without protection: unless it is washed, protective clothing can become saturated with pesticides – such as in the lining of boots and gloves – and can greatly increase pesticide absorption. Training should be provided.

- Training is crucial to the safety, use and cost-effectiveness of pesticides, and is recommended for inclusion in any project that increases the availability or accessibility of pesticides. A range of actors will require education: users, operators, extension officers, retailers, health workers treating cases of poisoning, and legislators in pesticides law.
- Application guidelines for pesticide use should be made clear to the borrowing country, and a legal document should be drawn up providing assurance that the guidelines will be followed.
- All the pesticides used in the project should be properly labelled, and all labels and application guidelines should be provided in the local language.
- Monitor water courses, soil and community health on a regular basis to ensure that pesticide concentrations are within legal environmental and health limits.

Integrated Pest Management Approach

An Integrated Pest Management Plan (IPMP) is a tool to prevent, evaluate and mitigate the occurrences of pesticides or pesticide breakdown products. The IPMP includes components promoting prevention and developing appropriate responses to the detection of pesticides or pesticide breakdown products, and provides responses to reduce or eliminate continued pesticide movement to groundwater and surface water. It encourages the use of a combination of pest management techniques, such as integrated pest management to suppress pest populations in an effective, economical and environmentally sound way, and minimize adverse effects on beneficial organisms, humans and the environment.

Whenever an IFAD project includes the purchase, promotion or use of agrochemicals, the following should be addressed:

- Identification of specific crops and their existing or potential pests requiring pest management:
- Investigate the options for using available safe pesticides and non-pesticide alternatives such as natural deterrents.
- Identification of nationally approved and available pesticides, and management and application techniques for their judicious and effective use to protect human and environment health.
- Assessment of local and national capacity for the safe handling, use, storage, disposal and monitoring of agrochemicals: Identify training needs for regulatory institutions, agro-dealers, extension agents and farmers, and assess the needs for building community environmental awareness.
- Development of an IPM programme for minimizing/optimizing pesticide application, including – if possible – provisions for monitoring residues on crops and in the environment. The programme should include IPM strategies for enhancing the resilience of vulnerable agroecosystems to climate variability and changes, and the adaptation of IPM practices to deal with pests in different climatic conditions (World Bank, 2009).
- Reduction of environmental impact: As fertilizers have a high carbon footprint, it is prudent to enhance the efficiency of nitrogen use (by minimizing losses caused by erosion, leaching and volatilization) and to identify alternative sources using integrated nutrient management strategies, such as biological nitrogen fixation, animal manure and the recycling of nutrients in crop residues (Lal, 2004).

Thus the key steps in developing an integrated pest management plan are:

- i. Evaluate pests' impact before control programs are implemented, to identify pests, size of problems and possible natural controls. This includes describing:
 - a. Common pest problems and estimated economic impact, current and proposed practices, including non-chemical preventative techniques, biological and chemical control. Is optimum use being made of agro-ecosystem management techniques to reduce pest pressure and of available non-chemical methods to control pests? Do farmers and extension staffs get sufficient information about IPM approaches that reduce reliance on chemical control?
 - b. Relevant IPM experience within the project area, district or country, existing IPM practices, projects/programs, research
 - c. Discrepancies where the current or proposed practices are not consistent with the principles of an IPM
 - d. approach, to be able to propose a strategy to bring pest management activities into line with IPM.
- ii. Evaluate non-pesticide management options, including a range of preventive measures and alternative pest control methods (physical, mechanical, and biochemical)
- iii. Evaluate whether synthetic pesticides are necessary or not, whether less toxic varieties are available for the purpose, and how to minimize exposure for users and the environment

Note that risk is a function of both toxicity and exposure. Reducing risk means (1) selecting less toxic pesticides and (2) selecting pesticides that will lead to the least human exposure before, during and after use.

Pesticide Management

1. Screening Pesticides

The use of any pesticide should be based on an assessment of the nature and degree of associated risks, taking into account the intended users. With respect to the classification of pesticides and their specific formulations, reference is made to the World Health Organization's *Recommended Classification of Pesticides by Hazard and Guidelines to Classification*. The following criteria apply to the selection and use of pesticides:

- a) They must have negligible adverse human health effects.
- b) They must be shown to be effective against the target species.
- c) They must have minimal effect on non-target species and the natural environment. The methods, timing, and frequency of pesticide application are aimed at minimizing damage to natural enemies. Pesticides used in public health programs must be demonstrably safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them.
- d) Their use must take into account the need to prevent the development of resistance in pests.
- e) They do not fall in WHO classes IA and IB, or formulations of products in Class II if (a) country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.

2. Reduce exposure time or the degree of exposure

Before use

Transporting

- Separate pesticides from other materials being transported
- Avoid private distribution
- Never transport leaking or badly deteriorated containers

- Do not transport food, beverages or animal feed together with pesticides.
- Load and unload pesticides very carefully to minimize the chance of dropping containers.

Packaging

- Follow international and national norms and guidelines
 - Use packaging adapted to needs eliminate re-use of packaging materials (even when cleaned, pesticide containers are too dangerous to re-use)
 - The container for the product shall be of sufficient strength and shall provide all the necessary
35. Protection against compaction, atmospheric moisture, oxidation, loss by evaporation and
36. Contamination to ensure that the product suffers no deterioration under normal conditions of transit and storage, etc.

Storing

- develop strict guidelines for farm level storage
- ensure permanent, well-marked labelling
- follow and respect national norms
- use appropriate language and approved pictograms
- use and respect appropriate toxicology colour codes
- should be located far from human dwellings, and personal use items
- should be sited far from rivers and bodies of water, to prevent chemical contamination from entering and poisoning the water
- should not be sited in an area subject to flooding, especially during seasonal rains
- be secured from public access
- have a warning sign affixed to the exterior door, entrance or gate of the storage facility
- have a floor or base that is protected from pesticide absorption

Labelling

The purpose of a labelling is to convey a message about what the product is, who makes it and how it may be used safely and effectively. Label should specifically indicate:

- Hazard symbol
- Trade and chemical name
- Ingredient statement
- Type of formulation
- Net content of the package
- Purpose for which it is to be used
- Name and address of manufacturer, distributor
- Registration or license number
- Directions for use
- Safety precautions
- Warnings and statements of good practice
- Hazards to humans and domestic animals
- Environmental hazards
- Physical and chemical hazards
- First-aid instructions and advice to health personnel
- Storage and disposal directions
- Warranty statement

During use

- Continuous training for farmers on transportation, storage, application, protective equipment and clothing, mixing of chemicals, disposal of containers, disposal of expired agrochemicals, etc

Pre-application

- Read and understand labelled instructions and any other information provided with either the agrochemical, the application equipment or the protective clothing
- Assess the risks of application to people, animals and the environment and decide what action is necessary to reduce or eliminate them
- Ensure that the user is competent and that he or she has received effective training in application techniques and the precautions to be observed
- Arrange health monitoring as may be necessary for certain hazardous agrochemicals based on their frequency of use
- Check application equipment to ensure that it operates satisfactorily without leaking or spilling and is calibrated for the necessary application rates
- Check that protective clothing and other safety equipment including breathing apparatus, 37. if required, is complete, is of the correct quality and is in good condition. Replace any items that are worn or missing. And is in good condition. Replace any items that are worn or missing
- Decide how the work is going to be done and set up an action plan to cover its implementation, together with any emergencies that may arise.
- Check that weather conditions are satisfactory, particularly to avoid excessive wind speeds and consequent spray drift
- Ensure the safe disposal of empty containers, tank washings and surplus pesticides

During application

- Do not apply agrochemicals without adequate training
- Wear appropriate protective clothing as prescribed on the label or information sheet for handling concentrated products
- Avoid blow-back from granule or powdered materials when transferring container contents into the application unit. A slow, steady release causes least disturbance of air and reduces the risk of particles becoming airborne and being inhaled
- Mix only the correct amount of agrochemical required for a particular task so as to avoid the need to dispose of any surplus.
- Handle containers carefully to prevent gurgling or spillage during pouring into an applicator.
- Pour correctly from large containers with the spout uppermost so as to allow air to flow into the container at the same rate as the contents flow out
- If two or more agrochemicals have to be mixed, ensure that they are compatible and without risk of a chemical reaction that would cause a "tank mix" operator hazard Do not eat, drink or smoke while applying agrochemicals
- Ensure that dangerous practices such as putting a blocked nozzle to the mouth to blow it clear are prohibited. Clean the nozzle with water or a soft probe, such as a grass stem
- Do not allow other workers in the field, particularly when pesticides are being applied.
- Take particular care to observe that children are neither allowed to spray nor are exposed to pesticides
- Take notice of changing weather conditions, such as an increase in wind speed. This would cause drift and could blow the spray towards sensitive areas such as a drinking water supply, resulting in health hazards. It may also blow the spray towards the operator, causing an inhalation hazard.

After use

Know, respect and enforce any exclusion period after application during which humans, livestock, etc., must be kept away from the treated area; assure proper cleaning and rinsing off; and develop a workable monitoring and evaluation system). The following precautions have to be followed after applying the pesticide:

- Thoroughly wash hands, face and neck as well as other parts of the body which may have become contaminated. If gloves have been worn, wash them before removal
- Return unused pesticide to safe storage and safely dispose of empty containers and any surplus in the application equipment
- Decontaminate application equipment by washing it thoroughly. The washings should be drained into a soak-away or similar chamber to be safely confined and without risk to the environment.
- Decontaminate protective clothing by thoroughly washing items such as apron, boots and face shield. Launder the work clothing each day after spraying. Gloves should be washed inside and out and allowed to dry. Respiratory protection equipment should be wiped clean
- Bathe or wash thoroughly again after completing the above four actions.

Disposal of unused and obsolete pesticide, and empty pesticide containers

The safe management and disposal of pesticide-related waste (*unused and obsolete pesticide, and empty pesticide container*) should be provided and coordinated by regulatory authorities, pesticide distributors and suppliers. Other organizations that support and advise pesticide users, such as extension and health promotion services, non-governmental organizations (NGOs), agricultural colleges and schools, also have important roles to play.

MAAIF is responsible for regulating the manufacture, import, distribution and use of pesticides. These responsibilities should be extended to include the management of pesticide related waste products, including empty containers, which are often overlooked.

A mechanism has to be designed to collect all empty pesticide containers from farmers and safely disposed and never reused. It is extremely dangerous to use them for anything else. Consult the pesticide label, the manufacturer, or the manufacturer's representative for specific recommendations regarding container clean-up and disposal.

The management plan has to be prepared when there is the plan to use pesticide to mitigate all the impacts associated with the pesticide using the above-mentioned measures. The implementation of the plan has to be supervised, monitored and audited, and a monitoring plan has to be prepared.

In Summary

The IPMP should include:

- i. A description of present, proposed and/or envisaged pesticide use and assess whether such use is in line with IPM principles. Provide purpose of pesticide use, type of products used, frequency of applications, and application methods. Is pesticide use part of an IPM approach and is it justified? Justification of pesticide use under the project should (a) explain the IPM approach and the reason why pesticide use is considered, (b) provide an economic assessment demonstrating that the proposed pesticide use would increase farmers' net profits, or for

- public health projects, provide evidence that the proposed pesticide use is justified from the best available (probably WHO supported evidence) public health evidence.
- ii. An indication of type and quantity of pesticides envisaged to be financed by the project (in volume and monetary value) and/or assessment of increase in pesticide use resulting from the project.
 - iii. Circumstances of pesticide use and the capability and competence of end-users to handle products within acceptable risk margins (e.g. user access to, and use of, protective gears and appropriate application equipment; users' product knowledge and understanding of hazards and risks; appropriateness of on-farm storage facilities for pesticide).
 - iv. An assessment of environmental, occupational and public health risks associated with the transport, storage, handling and use of the proposed products under local circumstances, and the disposal of empty containers.
 - v. Pre-requisites and/or measures required to reduce specific risks associated with envisaged pesticide use under the project (e.g.: protective gear, training, upgrading of storage facilities, etc.).
 - vi. A selection of pesticides authorized for use, taking into consideration: (a) criteria set at national (if there is any) or international, (b) the hazards and risks and; (c) the availability of newer or less hazardous products and techniques (e.g. bio-pesticides, traps).
 - vii. A description of activities that require local monitoring during implementation.
 - viii. A description of activities that require monitoring during supervision visits (e.g. regarding effectiveness of measures to mitigate risks; progress in strengthening regulatory framework and institutional capacity; identification of new issues or risks arising during implementation).
 - ix. Monitoring and supervision plan, implementation responsibilities, required expertise and budget.

Annex 6: Stakeholder Identification Matrix

Please note:

1. Ratings for the knowledge of issues can fall between unknown to low, medium or high
2. Ratings for the ability to influence the outcome can fall between unknown or mixed to low, medium or high
3. The communication strategy work as follows:
 - 1 indicates close contact (eg, phone calls, emails, video conferencing, regular face to face meetings);
 - 2 indicates irregular contact (briefing notes, occasional letters/notification, emails, newsletters);
 - 3 indicates informing the particular stakeholder through e.g. the media etc.
4. The list of stakeholders is not exhaustive at this point – it is an evolving document so as stakeholders are identified they are added into the document.

Definition of Stakeholder as follows:

1. Primary stakeholders who are directly involved in the development of the AFDP and its implementation;
2. Secondary stakeholders who are not directly involved in the development and/or implementation of the AFDP, but are affected it;
3. Tertiary stakeholders who may comprise key individuals, or groups, who may significantly influence the success of the Programme, but are not directly or indirectly involved in its development and implementation.

1. GOVERNMENT

Stakeholder	Who/What do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Ministries:					
Mainland:					
PMO	Programme Proponent – representing all AFDP interventions and activities	high	high	1	1
Livestock & Fisheries	Fisheries interventions	High	High	1	1
Agriculture	Crop seed development	High	High	1	1

Stakeholder	Who/What do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Vice President's Office	Policy guidance and approvals for environmental compliance	High	High	2	1
Trade and Industry	May Partner in implementation	Medium	Medium	3	2
Financial institutions	May Partner in implementation	Medium	Medium	3	2
District / Local Governments	Implementing agent in collaboration with MLF	High	High	1	1
ZANZIBAR:					
MANRF	Programme Proponent – representing all AFDP interventions and activities	High	High	1	1

2. REGULATORY BODIES

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
NEMC	Review and approval of reports for compliance	High	High	2	2
Plant Health Services (MOA-TZ)	Guidance and Approvals of IPMP	High	High	2	2
Plant Protection Division (MANRLF-ZNZ)	Guidance and Approvals of IPMP	High	High	2	2
Water Basin offices	Water use permits and monitoring	High	High	2	2
DSFA	Approval and Monitoring	High	High	2	2
TASAC	Permits and monitoring	High	High	2	2

3. COMMUNITY

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Crops farmers	Beneficiary	High	High	2	3
Agrodealers	Beneficiary	High	Medium	2	2
Processor of sunflower	Beneficiary	High	Medium	2	2
Aqua Farmers	Beneficiary	High	Medium	2	2
Seaweed farmers	Beneficiary	High	Medium	2	2
Artisanal Fishers	Beneficiary	High	Medium	2	3
Deep sea fishers and crew	Partners or Competitor	High	Low	3	3
Owners of Private Fishing Boats	Partners/Competitors	High	Low	3	3
Communities adjacent to AFDP interventions	Beneficiaries/Affected persons	Medium	Medium	3	3

4. INSTITUTIONS/RESEARCH PARTNERS

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
TARI	Implementing agency	High	High	1	1
ADC	Implementing agency	High	High	1	1
ASA	Implementing agency	High	High	1	1
TOSCI	Implementing agency	High	High	1	1
TAFIRI	May become Partner in implementation	High	Medium	3	2
Institute of Marine Sciences	May become Partner in implementation	High	Medium	3	2

5. DEVELOPMENT & INVESTMENT PARTNERS

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
AFD	May become co-financier	High	Low	3	2
JICA	May become co-financier	High	Low	3	2
TADB	May become co-financier	High	Low	3	2
World Bank	May collaborate in implementation	High	Low	3	2

6. INDUSTRY/ENTERPRISES

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
TAFICO	Implementing agency	High	High	1	1
ZAFICO	Implementing agency	High	High	1	1
Women's and Youth's cooperatives	Seaweed processing	High	High	1	2

7. MEDIA - all communication channels

Stakeholder	Who/what do they represent	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Relevant writers	Media of communicating messages to the public	Unknown	Unknown	3	3
Tanzania Standard Newspapers	Media of communicating messages to the public	Unknown	Unknown	3	3
The Guardian Ltd	Media of communicating messages to the public	Unknown	Unknown	3	3
Mwananchi Communications Ltd	Media of communicating messages to the public	Unknown	Unknown	3	3

Stakeholder	Who/what do they represent	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Radio stations	Media of communicating messages to the public	Unknown	Unknown	3	3
TV Stations	Media of communicating messages to the public	Unknown	Unknown	3	3
Independent Bloggers	Media of communicating messages to the public	Unknown	Unknown	3	3
Private Youtubers	Media of communicating messages to the public	Unknown	Unknown	3	3
Online TVs	Media of communicating messages to the public	Unknown	Unknown	3	3
				3	3

8. NGOs and CSOs

Stakeholder	Who/what do they represent	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Tanzania Nature Conservancy	May collaborate in implementation	High	Medium	3	2
WWF	May collaborate in implementation	High	Medium	3	2
IUCN	Provide data	High	Low	3	3
Beach Management Units	May collaborate in implementation	High	High	2	2

9. GOVERNANCE AND MANAGEMENT

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Programme Steering Committee	May collaborate in implementation	High	High	1	1
District Facilitation Teams	May collaborate in implementation	High	High	1	1

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3

10. OTHER STAKEHOLDERS

Stakeholder	Who/what do they represent?	Knowledge of Issues	Ability to Influence Outcome	Position on and stake in AFDP	Communication Strategy Level 1,2 or 3
Transporters	Logistics and support in the value Chain	unknown	unknown	3	3
Consumers	Target Market	unknown	unknown	3	3
Importers of similar products	Competitors	unknown	unknown	3	3

Annex 7: Study Team, Study Itinerary and ESMF Timelines

The study team is shown in the table below.

Table A7-1: ESMF Study Team

ESMF Study Team	
Ms Arundhati Inamdar Willetts <i>IFAD Consultant</i>	Team Leader, Environmental/SECAP Specialist
Mr Ojung Longdare <i>IFAD Consultant</i>	Environmental and Social Specialist

The field itinerary was as follows:

Table A7-2: ESMF Field Itinerary

Day	Activities
Monday 02/03/2020 to Friday 06/03/2020	- Preliminary meetings in Dodoma with PMO; VPO; MoA - Environment Unit; MLF – Environment Unit; NEMC; Ministry of Water and Irrigation -Director of Water Resources; MOFP - National Bureau of Statistics; FAO
Sunday, 31/05/2020	- Travelled from Dar es Salaam to Dodoma by road
Monday, 01/06/2020	- Planning meeting with GoT at PMO-Dodoma - Data and info collection
Tuesday, 02/06/2020	- Planning meeting with GoT at PMO-Dodoma - Data and info collection
Wednesday, 03/06/2020	- Met TARI Ilonga team at Msimba, Kilosa - Visited and observed existing boreholes and farms
Thursday, 04/06/2020	- Met ASA team at their field office, Morogoro Town - Met TOSCI team at their HQ/ office, Morogoro town - Met ADC Kingolwira team at their center and visited Boma road station-Morogoro Town - Held consultations with stakeholders(Aqua farmers, crop farmers, Agrodealers) at Morogoro)
Friday, 05/06/2020	- Travelled from Morogoro to Igunga, Tabora by road
Saturday, 18 July 06/06/2020	- Met ADC Mwamapuli center team - Visited water source and observed existing ponds - Held consultation with stakeholders(Aqua farmers, crop farmers, Agro dealers, Sunflower processor) at Igunga district
Sunday, 07/06/2020	- Travelled from Igunga to Chato by road
Monday, 08/06/2020	- Met ADC Rubabangwe team at Chato - Held Consultation with stakeholders(Aqua farmers and crop farmers) at Chato district-Geita - Travelled from Chato to Nzega
Tuesday, 09/06/2020	- Met Nzega District officials at their office - Held Consultation with farmers at Nzega

Day	Activities
	<ul style="list-style-type: none"> - Visited Kilimi dam and ASA farm - Travelled from Nzega to Dodoma by road
Wednesday, 10/06/2020	<ul style="list-style-type: none"> - Travelled from Dodoma to Bagamoyo
Thursday, 11/06/2020	<ul style="list-style-type: none"> - Met Bagamoyo District officials, - Held consultation with Fishers and BMU leaders - Travelled from Bagamoyo to Dar es Salaam
Friday, 12/06/2020	<ul style="list-style-type: none"> - Met TAFICO team - Held consultation with private fishing boat owners
Saturday, 13/06/2020	<ul style="list-style-type: none"> - Report writing at Dar es Salaam
Sunday, 14/06/2020	<ul style="list-style-type: none"> - Travelled to Zanzibar by boat
Monday, 15/06/2020	<ul style="list-style-type: none"> - Met Department of Fisheries officials - Held consultation with Fisher - Held Consultation with private fishing boat owners - Visited hatchery for fingerlings
Tuesday, 16/06/2020	<ul style="list-style-type: none"> - Visited ZAFICO Ice making plant - Visited ZAFICO fishing boat(long liner, 18m) docked at port
Wednesday, 17/06/2020	<ul style="list-style-type: none"> - Travelled from Zanzibar to Dar es Salaam by boat
Thursday, 18/06/2020	<ul style="list-style-type: none"> - Travelled from Dar es Salaam to Dodoma by road
Friday, 19/06/2020	<ul style="list-style-type: none"> - Report writing with GoT team at PMO-Dodoma - Zoom meeting with IFAD team
Saturday, 20/06/2020	<ul style="list-style-type: none"> - Report writing with GoT team at PMO-Dodom
Sunday, 21/06/2020	<ul style="list-style-type: none"> - Report writing with GoT team at PMO-Dodoma
Monday, 22/06/2020	<ul style="list-style-type: none"> - Report writing and discussions with GoT team at PMO-Dodoma - Met Permanent Secretary-Ministry of Livestock and Fisheries
Tuesday, 23/06/2020	<ul style="list-style-type: none"> - Report writing and discussions with GoT team at PMO-Dodoma
Wednesday, 24/06/2020	<ul style="list-style-type: none"> - Report writing and discussions on Aide memoire with GoT team at PMO-Dodoma - Zoom meetings
Thursday, 25/06/2020	<ul style="list-style-type: none"> - Report writing and discussions on Aide memoire with GoT team at PMO-Dodoma
Friday, 26/06/2020	<ul style="list-style-type: none"> - Travelled from Dodoma to Dar es Salaam by road

The ESMF study timelines were as follows:

Table A7-3: ESMF Study Timelines

Dates	ESMF Study Activity
02 – 06 March 2020	Preparation, document reviews, initial consultations
02 – 27 June 2020	Stakeholder consultations, site visits
25 July 2020	Submission of draft ESMF to IFAD for decision meeting
26 July to 31 July 2020	Review period and comments on ESMF
03 – 09 August 2020	Finalisation of ESMF
10 August 2020	Submission of Final ESMF to IFAD, MOLG and MAAIF