Investing in rural people

Eritrea

Integrated Agriculture Development Project

Project Design Report

Main report and annexes

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Map of the Project Area

IFAD

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 | 28-07-2020

Abbreviations and Acronyms

ACBF	African Capacity Building Fund
AED	Agricultural Extension Department
AfDB	African Development Bank
AFE-WG	Agriculture, Food Security, Environmental and Climate Change Working Group
AWPB	Annual Work Plan and Budget
CIF	Cost, Insurance and Freight
CLPE	Country-level policy engagement
COSOP	Country Strategic Opportunities Programme
CPIA	Country Policy and Institutional Assessment
CSN	Country Strategy Note
DAP	Draught Animal Power
EIRR	Economic Internal Rate of Return
EIU	Economist Intelligence Unit
EPHS2010	Eritrea Population and Health Survey, 2010
ESMF	Environmental and Social Management Framework
EWAA	Eritrean Women Agribusiness Association
FDP	Fisheries Development Project
FFS	Farmers' Field School
FM	Financial Management
FReMP	Fisheries Resources Management Programme
GDP	Gross Domestic Product
GHG	Green House Gas
GIS	Geographic Information System
GoSE	Government of the State of Eritrea
HDI	Human Development Index
HRD	Human Resources Department
IADP	Integrated Agriculture Development Programme
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRISAT	International Crop Research Institute for the Semi-Arid Tropics
IFMIS	Integrated Financial Management System
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
IPM	Integrated Pest Management
ITC	International Training Centre on Geo-Spatial Applications
IWRM	Integrated Water Resources Management
KM	Knowledge Management
M&E	Monitoring and Evaluation
MIHAP	Minimum Integrated Household Agricultural Package
MMR	Ministry of Marine Resources
MoA	Ministry of Agriculture

MoLWE	Ministry of Land, Water and Environment
MSY	Maximum Sustainable Yield
MT	Master Trainer
MTR	Mid-Term Review
NAP	National Agriculture Project
NAPHL	National Animal and Plant Health Laboratory
NARI	National Agriculture Research Institute
NEMP	National Environmental Management Plan
NIDP	National Indicative Development Plan
NPCO	National Project Coordination Office
NPV	Net Present Value
NSC	National Steering Committee
NSU	National Seed Unit
NUEW	National Union of Eritrean Women
NUEYS	National Union of Eritrean Youth and Students
PCR	Project Completion Review
PDO	Project Development Objective
PDR	Project Design Report
PIC	Planning and Implementation Committee
PIM	Project Implementation Manual
PP	Procurement Plan
PSD	Planning and Statistics Division
RBAs	Rome-based Agencies
RSD	Regulatory Services Department
SDG	Sustainable Development Goal
SECAP	Social, Environmental and Climate Assessment Procedures
SMCFS	Small and Medium Commercial Farmers Strategy
SME	Small and Medium Enterprise
SO	Strategic Objective
SPC	Sub-zoba Planning Committee
SPCF	Strategic Partnership Cooperation Framework
SSTC	South-South Triangular Cooperation
SWC	Soil and Water Conservation
TA	Technical Assistance
TLST	Time and Labour Saving Technologies
ToC	Theory of Change
ToF	Training of Facilitators
ToT	Training of Trainers
UNDP	United Nations Development Programme
VC	Value Chain
WHO	World Health Organization

WOP	Without Project
WP	With Project
WUA	Water Users Association
ZPCC	Zoba Project Coordination Committee
ZPCO	Zoba Project Coordination Office

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

☐ Gender transformational ☑ Youth sensitive ☑ Nutrition sensitive ☐ Climate finance

Executive Summary

COVID-19 – The Integrated Agriculture Development Programme (IADP) is designed during the global COVID-19 pandemic, which has had a significant adverse impact on global food supply chains, production and productivity, and livelihoods. Although it is still too early to tell the exact impact of COVID-19 on livelihoods in Eritrea, the country's significant reliance on external markets for goods and services puts Eritrea in a more vulnerable position. Eritrea, together with other Horn of Africa and Eastern African countries, is facing an unprecedented invasion of the Desert Locust, which may potentially devastate food and nutrition security in the country. IADP will therefore take into account the potential impacts of different emergencies that may arise during project implementation, and ensure that the investment facilitates prompt responses in situations where the livelihoods of IFAD's target group may be severely impacted and/or the viability of the project is affected.

Political and Economic Context – For several decades, Eritrea diverted from its development path due to 30-years of war until 1991, followed by the 'no-war no-peace situation' after the border war with Ethiopia between 1998 and 2000 and 10 years of international sanctions. This situation normalized when Eritrea and Ethiopia signed a peace agreement on 9th July 2018, and the United Nations Security Council lifted sanctions in November 2018. The peace dividend offers Eritrea opportunities to reallocate public resources to its economic and social development, and to enhance international cooperation. Due to water scarcity being the main impediment to agriculture development in the country, Eritrea follows a specific model premised on water-shed management as the entry point for investments in the agriculture crop and livestock sectors.

Rationale for IFAD Involvement – Since 1995, IFAD has been one of the few international development partners that remained active in financing the agriculture sector in Eritrea. IFAD has been instrumental in supporting the country's transition from reconstruction to structured development through a succession projects. Earlier interventions (such as the Gash Barka Livestock and Agricultural Development Project (GBLADP) focused on the re-establishment of livelihoods for crisis-affected rural households, while the latter projects (Post Crisis Rural Recovery Development Programme (PCRRDP), Catchment and Landscape Management Project (CLMP), Fisheries Development Project (FDP), Fisheries Resources Management Programme (FReMP), and the National Agriculture Project (NAP) intervened in agricultural, livestock and fisheries development, and natural resource management. This portfolio has been instrumental in the construction of multipurpose micro-dams for irrigation, livestock and domestic water supply; and establishment of inland fish farming, and setting up systems for project delivery at the National and Zoba levels.

However, Eritrea's crop and livestock productivity remains low compared to the respective potential yields. This is partly due to climate change impacts, to which Eritrea is particularly exposed. Domestic food production is estimated to meet only 60%-70% of the population's needs. Accordingly, the country depends on imports to satisfy a large portion of its food needs. In 2017, the value of food imports accounted for 40.3% of all Eritrea's imports.

Capturing the demographic dividend through youth engagement, for example in value addition and the rural/agro-services, is one domestic input available to be leveraged to boost agricultural productivity, job creation and transformation of the rural economy. Therefore, the Government of the State of Eritrea (GoSE) has requested IFAD to support the Integrated Agriculture Development Project (IADP), as a follow-up investment to the National Agriculture Project (NAP) to consolidate and scale up its achievements. The IADP is aligned to the draft Eritrea National Agriculture Development Strategy and Policy (2019). In addition, the concept of IADP is based on the Small and Medium Commercial Farmers Strategy (SMCFS) (May 2019).

IADP seeks to address challenges to increasing agricultural production and productivity, and enhancing rural livelihoods and food and nutrition security including: i) improving access to productive assets, appropriate technologies and support services, ii) facilitating off-farm employment; iii) improved management of natural resources; iv) strengthening rural productive infrastructure; and v) enhancing community empowerment and participatory development approaches. Considering the critical importance of water to rural livelihoods and overall food and nutrition security in Eritrea, IADP builds on IFAD's extensive experience in the country in linking watershed management and catchment development interventions with downstream groundwater recharging for irrigation for crops and livestock production. The Project will also build on the NAP achievements on the development of meteorological and hydrometric network, dissemination of climate smart approaches and climate-proofing investments.

A critical and positive development for IADP is the Government's willingness to scale up different models of the Minimum Integrated Household Agricultural Package (**MIHAP**). MIHAP is the Government's flagship programme for the distribution of agriculture inputs, which is implemented at a national scale. Under IADP, the Government will pilot three models of MIHAP, including: i) traditional MIHAP focused on farmers with capacity to increase production and proximity to water sources, ii) revised MIHAP to cater to the vulnerable households with limited capacities and access to water, and iii) mini-MIHAP for agro-pastoral households in arid and semi-arid lowlands. IADP therefore proposes a package of **differentiated and innovative interventions suited to the agro-ecological conditions and topographical uniqueness of the Eritrean rural areas**; with a focus on strengthening rural livelihoods in the different farming systems (i.e. rain-fed crop systems using traditional methods, semi-sedentary livestock-based agro-pastoralism, and irrigation-based agro-pastoralism).

IADP will also draw on an upcoming IFAD implemented project (EUR 5 million) financed through the EU grant, to pilot rural micro-credit provision through the Small and Micro-Credit Programme (SMCP) under the Ministry of National Development (MND). This project is expected to be approved in 2021, and is expected to support rural micro-enterprise development and employment for rural youths and women.

It should be highlighted that IADP design has been cognizant of IFAD's corporate mainstreaming priorities of climate change, nutrition, gender and youth mainstreaming. Specific interventions have been included in the project components to ensure compliance to this requirement. Some of the planned interventions include: a) building resilience of farmers to climate change, through climate

smart agriculture; b) empowering the youth to become service providers through the establishment of micro, small and medium enterprises; c) nutrition-sensitive agriculture practices; and d) using MIHAP to reach out to poor women and other vulnerable groups. IADP will employ socio-cultural assessments in order to better understand and apply social dynamics to women participation.

Integrated Project Risk Management Matrix Overall the main risks for IADP relate to the institutional capacity gaps mainly due to limitations in financial management, monitoring and evaluation and reporting, procurement delays and gaps in some of technical areas. The project may also be impacted by exogenous factors such as the overall macro-economic context, with limited private sector participation, which may be a disincentive for investments by smallholder producers. The overall climate factors present another major risk with frequent occurrence of droughts and scarcity of rainfall. IADP is therefore designed to respond to these risks and presents mitigation measures throughout the framework of the project.

Project Goal and Objective– IADP's overall goal is to contribute to poverty reduction and food and nutrition security of rural households. The **Project development objective** (PDO) will be to enhance smallholder agricultural production and productivity in a sustainable and climate-resilient way and improve rural livelihoods ***Geographic Area of Intervention*** – IADP will be national in scope, targeting all six Zobas (regions), with core interventions implemented in the four (4) inland Zobas[1], while the two (2) coastal Zobas[2] will mostly be supported through environment and ecosystem protection interventions. Interventions will cover approximately 40 per cent of the sub-zobas (i.e. 36 sub-zobas). In view of the varied institutional capacity across the different Zobas, the intervention area will be expanded gradually, using a ***phased approach*** to ensure effective and sustainable achievement of outcomes and impacts. Among other triggers the expansion will be determined by:

- level of readiness of the decentralized implementing entities in the Zobas to manage additional area/activities, starting from Component 1 on watershed management interventions, with gradual expansion to Component 2;
- assessment of status of watershed treatment which will determine the appropriate entry point for interventions under Components 1 and subsequently component 2;
- impact assessment studies of NAP, which will provide guidance on the Zoba/sub-Zoba capacities, experiences and gaps to mitigate potential implementation inefficiencies.

The PIM will describe how the expansion process will be sequenced over the life of IADP, and provide clear trigger-based milestones. In addition, the expansion process will be assessed at MTR to take stock of the progress made on the overall implementation of the project, and to consider adjustments and changes that would need to be introduced to the expansion process and enhance implementation efficiency.

Targeting strategy: Geographic targeting will be determined as follows:

- Watersheds and irrigation schemes: Prioritisation and selection of watersheds and irrigation development will consider: i) availability of a reliable source of water for livestock and irrigation (preferably also for human consumption); ii) the level of watershed treatment, with high priority given to watersheds with headworks (untreated) and least priority to new watersheds (untreated); iii) willingness of communities to participate in the watershed management (public good) investments.
- Sub-zobas: Priority will be given to Sub-zobas with higher food and nutrition insecurity and poverty levels.
- Intervention sites: Selection of intervention sites will be determined by: i) level of watershed treatment in the highlands of the zobas Anseba, Debub, Maekel and part of Gash-Barka; ii) potential for irrigation by smallholder farmers in the associated lowland areas (part of Gash-Barka, Northern Red Sea, and Southern Red Sea).

Target Groups – The Project interventions will directly benefit approximately 60,000 rural households or more than 300,000 household members. Priority beneficiaries will be: a) rural smallholder farmers involved in subsistence agriculture, horticulture and small livestock keeping; b) farmers and youth interested in establishing farmers' associations or cooperatives or pioneer small and medium enterprises (SMEs); c) women, especially woman-headed households, and households with young (0-5 years) children, with priority to malnourished children; and d) youth (18-35 years), including demobilized soldiers.

ZPCOs will ensure adequate monitoring systems to address potential overlap of beneficiaries with FREMP and other similar development projects in the respective target areas.

Components – IADP's development objective will be achieved through implementation of the following components: *Component 1:Integrated Watershed Management*; *Component 2:Crop and livestock productivity and rural livelihood improvement*; and *Component 3:Project Support Services*. A fourth (***Component 4***):Disaster Risk Reduction and Management with "zero budget allocation" has been included as a response window to improve project's agility to respond to crisis/emergencies declared by the Government, which have significant adverse impacts on IFAD's target group, achievement project objectives and the overall viability of project intervention. A summary of the project components is presented hereunder:

- ***Component 1: Integrated Watershed Management*** – Given the poor spatial and temporal distribution, as well as the scarcity of rainfall in Eritrea, with over 90 percent of the total area receiving less than 450 mm per annum, soil moisture deficiency is one of the important risk factors to the country's food security. To address this challenge, this Component will support water-centred interventions, thereby deploying a watershed management approach (in the context of integrated water resources management (IWRM) as the planning unit. The Component will finance activities required to plan and implement IWRM to restore the hydrologic and ecological functioning of watersheds, enhance the sustainability of existing land uses and, improve its resilience to climate shocks. It will also support the production and dissemination of energy-saving technologies, especially stoves in selected watersheds. The expected outcome would be "Strengthened environmental sustainability and climate resilience of poor rural people's economic activities".
- **Component 2: Crop and Livestock Productivity and Rural Livelihood Improvement**– Building on the outcomes of the water-centred interventions in Component 1, the aim of this Component is to sustainably invest in agriculture and livestock productivity enhancing interventions, post-harvest handling of agricultural commodities and improving resilience of farmers to climate change, through climate smart agriculture (CSA). The CSA and livestock technologies and good practices will be supported and implemented in the targeted areas as a starting point to then be scaled up, prioritizing key commodities[3]. At least 26,250 households would benefit from enhanced advisory and livestock services, improved access to production assets

and seeds, and nutrition-sensitive agriculture practices.
- This sub-component will support *piloting of agro-SMEs*, based on business plans, that are expected to create about 6 500 jobs for the young people, in line the focus of the Eritrea COSOP (2020-2025) to gradually move towards market-oriented production. The expected outcome will be "Increased diversification of livelihoods and resilience of communities".
- ***Component 3: Institutional Capacity Building & Project Support Services*** – This will be a cross-cutting component servicing the technical components and facilitating pathways for the effective implementation of planned activities, and addressing systemic institutional capacity gaps. The component aligns with SO3 of the Eritrea COSOP (2020-2025)[4] and responds to the need to strengthen capacities. Accordingly, it will aim at: a) augmenting the capacity of the institutions (public and private sector/farmer organizations) that will be responsible for overseeing and/or implementing the different IADP activities; b) facilitating the development and/or review and update of policies and strategies of selected subsectors for their effective and structured development; and c) managing IADP in an efficient and effective manner by providing overall coordination, including planning and implementation, financial management and control, procurement support, monitoring and evaluation, knowledge management, and progress reporting. It will also ensure liaison and linkage with all other relevant projects/programmes being implemented in the country that seek to address similar or related constraints.

Theory of Change – The objective of the Project is to facilitate the 'sustainable enhancement of smallholder agricultural production and productivity and improvement of rural livelihoods'. To achieve this objective, the project will address the following strategic constraints: a) low and erratic rainfall; b) land degradation and low soil fertility, c) limited access to inputs, d) inadequate outreach for extension services and technical skills; e) limited access to markets and value addition opportunities, iii) high post-harvest losses, f) limited access to productive resources and economic power for youth and women to engage in micro-enterprises and derive employment; g) lack of households knowledge on production and consumption of nutritious food; and h) gaps in institutional capacity. The combined effect of these constraints is the perpetual under-performance of the country's agricultural sector and the resultant poverty levels in the rural areas, given that the sector employs the majority of the rural population.

IADP will address these constraints through sustainable watershed management and community based integrated soil and water management conservation strategies linked with productivity and livelihood enhancing interventions and institutional capacity building. The focus is to enhance the availability of water, for agricultural and livestock production, strengthen access to improved and productive inputs and adoption of CSA and labour saving technologies. The project will pay attention to inclusive participation and empowerment of women and youth and improving food and nutrition security of project beneficiary households by increasing availability and accessibility to diversified and nutritious foods (annex 2.1 includes a TOC for nutrition sensitive interventions).

Building on the National Agriculture Project (NAP) and to complement the overall focus of IADP, institutional capacities of the key agencies in the Ministry of Agriculture will be strengthened to enhance regulatory services, agriculture research and input delivery systems to ensure that appropriate solutions, technologies and approaches are availed to beneficiaries of the project, in support of the goal and objectives of IADP.

IADP will also gradually introduce business planning and *pilot* market orientation into project interventions, with a two-step process i.e. step i) strengthen and professionalise producer organizations to be inclusive and to be able to provide services to their membership, and ii) through these organisations, pilot a few agro-SMEs to better understand the constraints to agri-business and refine models for consideration in future investments. The project may also facilitate access to credit through the *upcoming* IFAD/EU micro-credit project.

These investments will result in sustainable enhancement of smallholder agricultural production and productivity and improvement of rural livelihoods security of the IADP target beneficiaries; and in the long-term contribute to poverty reduction, and food and nutrition security of rural households in the targeted areas. The schematic view of the ToC is presented in Annex 2.

The key assumptions underlying the ToC are that: enhancement of the project implementers' capacities would not only enable public institutions to effectively deliver tailored services, according to farmers' specific needs, but also provide an improved environment for increased investments in the agriculture sector; watershed management, combined with irrigation development, offers a sustainable solution to increasing production and productivity of smallholder farmers situated in arid and semi-arid lands; strengthening national input development and delivery systems will improve access to, and intensification of, production by smallholder livestock and crop producers; structuring and strengthening producers' organisations will provide a foundation for the establishment of agribusiness and off-farm employment opportunities in the long-term.

Project Implementation Arrangements – The Ministry of Agriculture (MoA) will be the lead executing agency, responsible for overseeing the overall implementation of the Project. MoA will liaise and work with other Ministries and partners whose mandates have a direct bearing on the achievement of IADP's development objective and its goal. Collaboration with the SMCP in the Ministry of National Development is also envisaged to facilitate access to credit for the IADP beneficiaries under the upcoming IFAD/EU micro-credit project. MoA will delegate the role of the lead implementing agency to its Planning and Statistics Division. At Zoba level, the Directorate General for Agriculture, Land and Environment will be responsible for implementation of the bulk of project activities, through the Local Government structure. In particular, the branches of Soil, Water and Irrigation; Animal Resources; and Crop Development will implement project activities through the various units and sub-zoba structures. National Union of Eritrean Women (NUEW) and National Union of Eritrean Youth and Students (NUEYS) will play a critical role in addressing social inclusion and empowerment of women and young people. In addition, the Agricultural Infrastructure branch of the Directorate General for Infrastructure Development will have an implementation role in relation to dam infrastructure development. The design process established that many of these institutions have various capacity limitations and, accordingly, their capacities will be augmented, under Subcomponents 3.1 and 3.2, based on a needs assessment.

Project Costs and Financing. IADP total costs have been estimated at USD 46.6 million. The Project will be financed by an IFAD loan of USD 7.4 million (about 15.9% of total Project costs); and IFAD grant of USD 29.7 million (about 63.6% of total costs); GoSE contribution of USD 4.9 million (about 10.5% of total Project costs); and the Project beneficiaries contribution (in-kind) of USD 4.7 million (about 10.1% of total Project costs). *The project total costs include the allocations for mainstreaming themes i.e. social inclusion themes (i.e. 14% total costs dedicated to nutrition sensitive agriculture)".* IFAD climate adaptation finance amounts to

US$19.4 million, which represents 52 per cent of total IFAD financing. The summary of costs allocation by component and their respective proportion is presented in the Table below. Component 1 is allocated 41% of total costs (USD 19 million) followed by component 2 with 37.3% (USD 17.4 million) and component 3 at 22% (USD 10.2 million). Eritrea has been included as one of the countries under the Great Green Wall Initiative, which will be funded partly by the Green Climate Fund (GCF). The Eritrea funds under the GGW are earmarked for co-financing IADP. This is not included in the summary Table as the fund allocation processes are still on-going.

Eritrea
Integrated Agriculture Development Project
Components by Financiers
(USD '000)

	GoE		IFAD Grant		IFAD Loan		Beneficiary Contribution		Total		For.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.		
A. Integrated Watershed Management													
Development and Institutionalization of Participatory Integrated Watershed Management Plans	16	10.0	141	90.0	-	-	-	-	157	0.3	94	47	16
Operationalization of Watershed Management Plans	57	8.8	593	91.2	-	-	-	-	650	1.4	358	235	57
Watershed Restoration and Water Management Infrastructure	913	5.0	9,413	51.5	3,597	19.7	4,337	23.8	18,260	39.1	3,652	13,695	913
Subtotal Integrated Watershed Management	986	5.2	10,147	53.2	3,597	18.9	4,337	22.7	19,067	40.9	4,104	13,977	986
B. Crop and Livestock Productivity and Rural Livelihood Improvement													
Access to Advisory Services	249	9.1	2,480	90.9	-	-	-	-	2,728	5.8	1,031	1,448	249
Sustainable Access to Inputs and Technologies for Enhanced Production and Post-Harvest Management	890	11.7	6,690	88.3	-	-	-	-	7,580	16.3	2,311	4,379	890
Producers' Organizations (PO) and Cooperatives Support	669	9.5	6,412	90.5	-	-	-	-	7,082	15.2	2,112	4,301	669
Subtotal Crop and Livestock Productivity and Rural Livelihood Improvement	1,808	10.4	15,582	89.6	-	-	-	-	17,390	37.3	5,453	10,129	1,808
C. Capacity Building and Project Support Services													
Institutional Capacity Building and policy support	495	8.0	1,995	32.2	3,339	53.9	370	6.0	6,199	13.3	1,947	3,757	495
Project management and South-South Triangular Cooperation	1,599	40.1	1,926	48.3	463	11.6	-	-	3,989	8.6	1,247	2,511	231
Subtotal Capacity Building and Project Support Services	2,094	20.6	3,921	38.5	3,802	37.3	370	3.6	10,188	21.8	3,194	6,268	726
D. Disaster Risk Reduction and Management	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PROJECT COSTS	4,888	10.5	29,651	63.6	7,400	15.9	4,707	10.1	46,645	100.0	12,752	30,373	3,520

Project Benefits. The financial analysis was performed from the perspective of beneficiaries (60,000 HH). The economic analysis also differed from the financial analysis due to a shadow price that was assumed for the main project inputs and outputs. Seventeen financial models were developed, of which seven are for agribusiness and Small and Medium Enterprises (SMEs); as well as ten for agricultural activities. The financial analysis shows that the targeted activities are sound. The economic analysis also shows that the project is economically viable. Taking into account the current assumptions the Economic Rate of Return (EIRR) for the overall project is equal to 19.04 percent and the Net Present Value (NPV) equals to US$ 59.9 million. The project is sensitive to changes in some of the model's variables (variations on benefits and costs, various lags in the realization of benefits and adoption rates). The risks factored in the sensitivity analysis include weather variations, potential protracted procurement delays and generally weak implementation capacity.

Exit Strategy and Sustainability – The Project exit strategy is integrated in the mainstreamed implementation approach of working directly with and through decentralized administrative structures and community leaders at the Zoba, Sub-zoba and Kebabi levels. The Project will deploy a handing over strategy for major infrastructure and equipment to the community with a detailed management plan backed with comprehensive operations and management training. Stakeholders engagement has been embedded in project implementation approaches to enhance ownership and sustainability. It is expected that the institutional framework and capacity established through IADP will continue to exist after IADP completion to benefit the population and country, particularly the proposed approaches to sustainable and inclusive land use planning, a cadre of social inclusion officers, household survey methodologies to inform design, implementation and vocational skill training and facilities for young entrepreneurs. High nutrition and climate resilient crops and cropping systems will have been introduced which can be scaled up to across the country in similar agro-ecological zones, with known requirements and results generated during the Project lifetime.

Environment and Social Categorisation – The Project has been preliminary classified as Environmental and Social Category **B**. Planned project interventions include construction of soil water conservation structures, introduction of small scale irrigation; drought tolerant crops, forage and livestock breeds, tree planting along the hill slopes, agroforestry practices, range land management, establishment of enclosures that reduce GHGs emissions and provide carbon sinks. The size of the irrigation schemes will not result in loss of environmental services provided by a natural ecosystem, nor may have significant negative implications that affect a broader area. Due attention will be given to ensure the inclusion of women and youth in the project interventions.

Implementation Readiness Plans. The Project will build on NAP implementation structures, which will be further strengthened based on lessons learnt. To strengthen start-up and mitigate potential implementation delays, critical start-up activities will be advanced through NAP and **repurposed implementation support funds** to facilitate the following implementation readiness/ start-up activities:

- re-appointment of staff, after performance evaluation, in accordance with updated TORs and/or assignment of new staff;
- finalization of agreements with intra-Government and other strategic partners,
- initiation of the preparation of major procurement bidding documents and recruitment of TA to be ready at project start-up,
- purchase of equipment to strengthen project management and financial management system and other related software; and
- preparation of relevant background studies – baseline survey, feasibility studies for infrastructure, ESMF, Capacity Needs Assessment and finalisation of the first year AWPB, procurement plan and PIM.

1. Context

A. National context and rationale for IFAD involvement

a. National Context

1. **Political and economic context.** For several decades, Eritrea diverted from its development path due to 30-years of war until 1991, followed by the 'no-war no-peace situation' after the border war with Ethiopia between 1998 and 2000; and 10 years of international sanctions. This situation normalized when Eritrea and Ethiopia signed a peace agreement on 9th July 2018, and the United Nations Security Council lifted sanctions in November 2018. The peace dividend offers Eritrea opportunities to reallocate public resources to its economic and social development, and to enhance international cooperation.

2. The Gross Domestic Product (GDP) of Eritrea relies heavily on services (58.9 percent) and industry (23.5 percent). Agriculture and fisheries contribute only 17.6 percent, although the sector employs 65-70 percent of the population[5]. Real GDP growth slowed down from 11 percent in 2011[6] to 4.8 percent in 2016, and picked up slightly to 5 percent in 2019[7]; this was mainly due to public-private investments in the mining sector and in port infrastructure. Agriculture provides only a minor contribution to economic growth due to persistent low productivity, lack of investments and vulnerability to frequent droughts. The projected real DDP is expected fall to -0.7% for 2020 as a results of the impact of COVID-19 pandemic (World Bank, June 2020). In addition, the country's OCHA INFORM COVID-19 index is 5.9 depicting a high risk classification and putting Eritrea at 22nd position out of 191 countries. The agriculture sector continues to underperform, and is unable to meet national food demands. The value of imports in 2017 amounted to USD 396 million, of which 40.3 percent were food products (cereals, vegetable oils, sugar, and meat)[8].

3. The 2019 *Ease of Doing Business* score[9] ranks Eritrea only 189th out of 190 countries. Private sector participation in the economy is constrained by restrictive economic and financial policies. The fiscal deficit was 7.9 percent of GDP in 2018 with a current account deficit of 2.7 percent[10]. The exchange rate has been fixed at ERN 15.08 for one USD since 1st December 2016, after being pegged at a rate of ERN 15.37 for one USD since 2005. Over this period, the ERN has become severely overvalued because of Eritrea's double-digit inflation, combined with continuing current-account deficits and the monetisation of chronic fiscal deficits. Consequently, Eritrean agriculture has difficulties to compete in the international markets, and cross-border movements of capital, goods and services are restricted. In addition, availability of hard currencies to finance imports is a bottleneck.

4. According to the National Statistics Office, Eritrea's population was estimated at 3.65 million people[11] by June 2015 and growing at an annual rate of about 2.8 percent. No national poverty statistics have been published. Eritrea's Human Development Index (HDI)[12] remains low at 0.43 and ranks Eritrea 182th out of 189 countries. This is due to: a) the impact of the long years of war and sanctions; b) widespread rural poverty; and c) the dependence of 65-70 percent of the population on small-scale agriculture yet with limited land resources coupled with difficult agro-climatic conditions. About 82 percent of the rural population owns agricultural land[13].

5. **Smallholder agricultural and rural development context.** Eritrea is situated along the western coast of the Red Sea with a coastline of over 1,200 km and has a total land area of 124,300 km^2. Eritrea is characterised by a diverse agro-ecological environment that supports various production systems: the Highlands are sub-humid to semi-arid; the Lowlands are arid with minimum rainfall. Agriculture, one of the main economic activities in the country, has two dominant farming systems: a) agro-pastoralism and pastoralism practiced in arid and semi-arid areas, mainly the east and west lowlands; and b) sedentary mixed crop-livestock farming practiced in the highlands and midlands.

6. Rain-fed agriculture is the predominant economic activity, employing about two thirds of the population. Traditional farm holdings are typically one to two hectares with one cropping season due to water scarcity, highly variable climatic conditions and environmental degradation. Crop production includes mainly barley, wheat, taff, sorghum and millet in the highlands, and millet and sorghum in the lowlands and sesame in Western lowlands. Livestock is an important sector given that 49 percent of the total land area is suitable for grazing whereas only 17 percent is suitable for cropping. Livestock includes camels, cattle, horse, dairy cows, small ruminants, poultry and beekeeping.

7. Crop and livestock productivity is low compared to potential yields, due to: a) low and erratic rainfall and recurring drought; b) limited soil fertility and land degradation; c) weak agricultural services and limited outreach; d) poor access to modern inputs and equipment; and e) inadequate technical skills, especially among women and youth. These limitations notwithstanding, there are good opportunities for agricultural development. Lessons from previous investments in the sector have demonstrated that the existent opportunities for agricultural productivity enhancement can be exploited through: a) adoption of proven and affordable technologies; b) multiplication and distribution of improved seeds and animals breeds; c) expanded and improved irrigation; d) innovative approaches to soil and water management and promotion of sustainable natural resource management; e) integration of small ruminants; and f) better management of grazing practices.

8. To move from subsistence to market-oriented farming, the Ministry of Agriculture (MoA) prioritizes irrigated agriculture and horticulture along the rivers and downstream dams, combined with upstream watershed management and soil conservation. Access to irrigation (typically plots of 0.1 to 0.25 ha per household) allows two to three cropping seasons and producing surpluses for the market.

9. The MoA encourages an agribusiness approach based on cooperative principles to link farmers to input and output markets, while the private enterprises have a very limited role in the agribusiness sector. Often, farmers sell directly in the weekly market and merchants. Farmers' organizations and cooperatives need to upgrade and diversify their organizational and service delivery models in order to better provide services to their members and ensure their viability. Access to inputs for agriculture, livestock and fisheries relies mainly on revolving funds, managed by public services, as the private sector (commercial banks and microfinance institutions) does not often reach out to farmers. This could be partly addressed by the rural finance project that the EU and GoSE are preparing. Access to imported inputs and equipment remains difficult due to the fiscal constraints.

10. **National strategies and policies on smallholder agriculture, rural poverty reduction and enhanced food security and nutrition.** The vision of the Government of the State of Eritrea (GoSE) is operationalized in the National Indicative Development Plan (NIDP) 2014-2018, which places high priority on exploiting the country's natural resources for sustainable socio-economic

development. NIDP foresees trade prospects with Middle Eastern and Asian countries. The country's policy and strategic framework for the agriculture sector is included in the following: a) the 2019 National Agriculture Development Policy and Strategy; b) the Five-year Strategic Agricultural Development Plan 2019-2023; c) the Small and Medium Commercial Farmers Strategy (SMCFS), May 2019; this latter one aims at creating, by 2023, farm enterprises that engage in highly productive and profitable agriculture value chains linked to domestic and international markets. The.

11. Despite a very strong GoSE commitment towards the development of a productive and profitable agriculture sector, significant systemic gaps exist at the institutional and policy levels in: a) procedures and regulatory frameworks to guide the implementation of rural development projects (e.g. suspension of national procurement framework); b) managerial, technical and institutional capacities; c) coordination across sectors (agriculture, financial services, industry and trade); and d) inadequate financial and Monitoring and Evaluation (M&E) systems, which impact the ability to quantitatively demonstrate development impact.

12. Within this context and given the federal structure of the country, Government departments and decentralized agencies at the Zoba and Sub-Zoba levels are the main implementers of IFAD-supported interventions. These institutions are constrained by limited resources to effectively manage and coordinate projects. Such limitations include: a) transportation means for field visits; and b) limited access to internet and electricity, which affects the use of ICT-based management and information systems.

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

13. **Gender and Social Inclusion –** Women constitute 55 percent of Eritrea's population[14] and they head 47.2 percent of all households[15]. The ratio of girls to boys in tertiary education is 67 percent[16], while the fertility rate is 4.8. The GoSE adopted several policies supporting equal opportunities for women, men and children. They include: a) the National Education Gender Policy and Strategy (2003); b) National Policy on Gender (2015); c) National Gender Action Plan (2015-2019); and d) a gender awareness strategy of communities (year?). The National Gender Action Plan acknowledges that women play an important role in the economy, particularly in agriculture and outlines areas of focus to improve women employment and promote eradication of poverty. As an example, females constituted 45.7 percent of the labour force in 2012. However, the majority of female workers are in non-skilled and low-paying types of jobs. Improving entrepreneurship skills, strengthening education and credit schemes and taking actions to address and eradicate cultural and traditional constraints will promote the socio-economic empowerment of rural women. The National Union of Eritrean Women (NUEW) is advocating women's equal participation in political, social and economic life and influence government policy on key gender issues. The NUEW has a widespread presence at all administrative levels in the country. Given that almost a half of Eritrean households are headed by women, strengthening gender equality is key to meeting the Sustainable Development Goals (SDGs) and to strengthening household and community resilience in the context of climate change. Female-headed households tend to have fewer household assets including livestock than male-headed households.

14. **Youth** – About 70 percent of the population are under 35 years old. There is a large and growing population of Eritrean youth who require relevant job skills and training to match the labour market[17]. For example, in 2015, over 54 percent of men, particularly youth, were either unemployed or under-employed in seasonal agricultural work or as casual labourers as majority having no access to the communal land. The need to build skills for youth is a priority both for the formal and informal sectors, including entrepreneurship skills to facilitate the start-up of small businesses and support women entrepreneurs[18]. Following the peace deal with Ethiopia, demobilization of young adults will require job creation in private sector and agriculture, as well as public and private investments, financial services and technology transfers. The National Union of Eritrean Youth and Students (NUEYS) is an active stakeholder in development, supporting advocacy for youth and their empowerment.

15. **Food and Nutrition Security** – Eritrea faces severe food and nutrition security challenges due, in part, to frequent droughts and high dependence on rain-fed agriculture and structural food imports as well as poor infant and young child feeding practices, poor hygiene and caring practices. According to the World Health Organisation (WHO, 2014), malnutrition, in particular of youth and women, is one of the greatest public health problems of Eritrea[19]. The malnutrition situation among the under five-year old children portrayed a severe burden of stunting (50.3 percent), underweight (38.8 percent), and wasting (15.3 percent)[20], that are significantly greater than the developing country average[21]. Main causes are the chronic failure to receive sufficient and diversified healthy food, including micronutrient deficiency. Eritrea's adult population also face a malnutrition burden with 38% of women of reproductive age affected by anaemia, and 6% of adult men having diabetes; meanwhile, 7.6% of women and 2% of men suffer from obesity[22]. Eritrea also scored poorly (33.8) on the 2014 Global Hunger Index[23]. Access to improved water increased from 23 percent in 1995 to 57.9 percent in 2010[24].

16. **Climate and Environment –** Climate change and increased climate variability are severely affecting Eritrea, through its significant impact on crop and livestock production, upland fish farming and rural livelihoods. Unfortunately, mitigation options are limited in part, by inadequate investment in irrigation, despite the potential for irrigation development in several parts of the country. Significant reductions in already low crop yields are projected for most staples and in multiple agro-ecological zones of Eritrea (see SECAP Annex 5) due to climate change, exacerbating a historic trend of declining land productivity. Hence, every opportunity will be explored to sustainably increase productivity and, more generally, strengthen resilience of smallholder agriculture and food systems. Adaptation to climate change is essential in view of changes in rainfall patterns and increasing temperatures in Eritrea. Eritrea has ratified the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC).

c. Rationale for IFAD involvement

17. Since 1995, IFAD has been one of the few international development partners that remained active in the Eritrean agricultural sector. IFAD has been supporting the Country's transition from reconstruction to structured development through successive investment projects. Earlier interventions (such as the Gash Barka Livestock and Agricultural Development Project (GBLADP))

focused on the re-establishment of livelihoods for crisis-affected rural households. The latter projects/programmes (Post Crisis Rural Recovery Development Programme (PCRRDP), Catchment and Landscape Management Project (CLMP), Fisheries Development Project (FDP), Fisheries Resources Management Programme (FReMP), and the National Agriculture Project (NAP) intervened in agricultural, livestock and fisheries development, and natural resource management. This portfolio has been instrumental in the following: a) construction of multipurpose micro-dams for irrigation; b) livestock and domestic water supply; c) establishment of inland fish farming; and d) setting up systems for project delivery at the Zoba level. There is significant potential for IADP to leverage these investments for agricultural productivity enhancement and intensification in the rural areas of Eritrea.

18. Eritrea's crop and livestock productivity however remains low compared to the respective potential yields. Even in times of good seasons, domestic food production is estimated to meet only 60-70 percent of the population's needs. Accordingly, the country depends on imports to satisfy a large portion of its food needs. In 2017, the value of food imports accounted for 40.3 percent of all Eritrea's imports.

19. The Government has thus requested IFAD to support a new intervention in agriculture as a follow up to the NAP that became effective in 2012 and will be closed in June 2021. The IADP is aligned to the draft Eritrea National Agriculture Development Strategy and Policy (2019). The policy focuses on integrated livelihood support for farmers to engage in highly productive, profitable agriculture value chains linked to domestic and international markets. Building on the lessons learnt and Government's new priorities elaborated in the SMCFS, IFAD will work with the Government with a long-term vision to gradually steer the agriculture sector towards a more commercial orientation as elaborated in the Country Strategic Opportunities Programme (COSOP) (2020 - 2025). Given the critical importance of water to rural livelihoods and food and nutrition security in Eritrea, the project will build on IFAD's extensive experience in the country in linking watershed management and catchment development interventions with potential downstream groundwater recharging for irrigation to support crops and livestock production.

20. The rationale and justification for IADP is therefore based on: a) the need to consolidate and leverage the successful investments made under PCRRDP, CLMP and NAP to improve agricultural and livestock sector performance as a means of rural poverty reduction and import substitution; b) pursuance of the country's Five-year Strategic Agricultural Development Plan (2019-2023) which has set, as one of its operational targets, the need to earn foreign currency through exports of agricultural and agro-industrial products; and c) strengthening the integration of IFAD11 mainstreaming themes, in particular, climate change adaptation, women and youth empowerment and nutrition for enhanced resilience of livelihoods, food systems and social inclusion.

21. IADP, therefore, proposes a package of differentiated and innovative interventions suited to the agro-ecological conditions and topographical uniqueness of the Eritrean rural areas. Planned interventions will focus on strengthening rural livelihoods in the different farming systems (i.e. rain-fed crop systems using traditional methods, semi-sedentary livestock-based agro-pastoralism, and irrigation-based agro-pastoralism). This will build on the experience to date and will all be informed by a software based land use planning support which already exists in the MoA.

22. Thus, IADP seeks to address challenges limiting agricultural production and productivity enhancement and improving rural livelihoods and food and nutrition security. Activities will focus on: a) providing access to, and improved management of, natural resources b) improving the access to productive assets, appropriate technologies and support services; c) facilitating off-farm employment; and d) strengthening rural productive infrastructure. Organising and empowering farmers organisations will be at the core of IADP's sustainability plan to ensure a voice for farmers in decision-making, and the gradual development of farmer owned enterprises that are in a position to provide services to their membership. It will also seek to address the implementation capacity gaps in the agriculture development ecosystem, by strengthening capacities of Government staff at central and decentralised levels.

23. IADP will also pay special attention to more vulnerable households, namely women headed households and youth, through the Minimum Integrated Household Agricultural Package **(MIHAP**). This is a national flagship programme, introduced in 2013, and includes the distribution of an integrated production starter packs (dairy cow/shoats, chicken, beekeeping, wood and fruit trees, improved stove, etc.) to communities with technical support and capacity building on good agriculture practices to support graduation. MIHAP beneficiaries will also be serviced by village/community level irrigation infrastructure and postharvest services. A critical and positive development under IADP is the Government's willingness to pilot differentiated models of MIHAP, which take into account the different agro-ecological conditions and the socio-economic situation of the beneficiaries. As such under IADP, the Government will pilot three models of MIHAP: i) traditional MIHAP focused on farmers with capacity to increase production and proximity to water sources; ii) revised MIHAP to cater to the vulnerable households with limited capacities and access to water; and iii) mini-MIHAP for agro-pastoral households in arid and semi-arid lowlands.

B. Lessons learned

24. Past projects enabled improvements in agriculture productivity through provision of inputs, irrigation systems, and watershed management, combined with small-scale livestock. The main lessons learned from past and ongoing interventions are as follows.

25. **Access to water is critical for enhancing the resilience of farming activities** Given the unequal spatial and temporal distribution as well as total scarcity of rainfall in Eritrea, with over 90 percent of the total area receiving less than 450 mm per annum, soil moisture deficiency remains one of the important risk factors towards ensuring food and nutrition security. Watershed management combined with irrigation development to support crops and livestock production systems is key to increasing the production and productivity, and enhancing resilience of smallholder livelihood systems in semi-arid and arid lands. Under NAP, check dams built in the Tselma Plain (Zoba Debub) enabled 2 to 3 cropping seasons per year, which increased the number of benefitting households from 300 to 800 and enabled farmers to diversify their production and improve household food security. There is however need to strengthen the planning, design and supervision capacity of irrigation investments to ensure their sustainable development. Learning from the previous interventions it is evident that feasibility studies and detailed designs could have been strengthened, especially on technical review and supervision for compliance. For example, most if not all of the dams are not provided with intake towers and outlet, which impacts on the ability to discharge water for domestic, irrigation and other

purposes. To address these deficiencies, IADP will include improved quality assurance (upstream work) and management in the construction of infrastructure to ensure that they are of acceptable standards as well as enhanced quality control/supervision during construction (downstream work).

26. **Soil and water conservation measures, using a broad range of technologies, and integrating participatory approaches can improve sustainability**. Under NAP, 809 hectares of catchment area was successfully protected. Good practices for implementing soil and water conservation techniques were developed in different Zobas. There is also a good trend in relating these interventions with downstream groundwater recharging, which is ultimately used for irrigation. These interventions were mostly identified and implemented with active participation of the rural communities, which contribute to their sustainability. Under IADP, integrated watershed management will serve as an entry point to address water scarcity challenges for agricultural development, SWC solutions will be expanded and community participatory approaches be strengthened. To ensure effective planning and implementation of land and water conservation strengthening the hydro-meteorological capacity is a prerequisite. This will be pursued under sub-component 1.1.

27. **Watershed management approaches are complex processes** focused on the entire landscape and involving hydrological processes and monitoring of land use practices, requiring the active participation of communities (Swallow et al. 2001; Berg et al. 2016). According to ICRISAT[25], watershed management entails: a) characterization of natural resource base, and identification of socioeconomic constraints for sustainable production; b) application of integrated, cost-effective, soil-water-nutrient management (SWNM) practices appropriate to farmers' resources and the natural resources of the ecosystem; c) rehabilitation of degraded soils, and studies on the effects of integrated SWNM strategies on system profitability and sustainability; and d) integration and evaluation of the techno-socioeconomic feasibility of promising strategies for crop intensification and reduction of soil degradation. The watershed management interventions under IADP will start-off with watershed characterization and apply various approaches for selection of appropriate conservation practices based on agro-ecological conditions and introduce planning and monitoring tools and methods for tracking ecosystem services.

28. **The use of public sector driven revolving funds (with full cost recovery)** for distribution of inputs and equipment has resulted in mismatch between supply and demand, attributed to limited size of the revolving funds on one hand and challenges to import inputs on the other hand. At the same time, there is no linkages between the public service-based inputs revolving funds with local microfinance institutions and commercial banks. Integration of financial institutions in the inputs delivery model would not only enhance private sector participation in delivery of services, but also improve effectiveness and sustainability of the inputs revolving fund. IADP, under Component 2, will support interventions to enhance private sector participation, including piloting agro-enterprises that will deliver services to the rural farming community. IADP beneficiaries will be linked to the planned EU-IFAD supported microfinance project, whose objective is to strengthen small and medium agri-businesses through improved access to finance and business development support services.

29. **Linkage to market through Producer Organizations**. Market integration of producers is central to the SMCFS. IFAD's past projects (GBLADP, PCRRDP, FDP, and CLMP) and on-going projects (NAP and FReMP) have supported producer organizations (PO) development (mainly cooperatives), in particular dairy collection centres and cooperative purchases of inputs for marine fisheries. These organizations and other farmer/community based organizations have the potential of linking smallholders to sustainable markets and other value chain services in Eritrea. However, they often have problems to link their members with output markets due to managerial and organizational challenges, which have constrained their capacity to operate as business entities. The lack of agribusiness skills, such as preparation of business plans, market analysis, cost structure and gross margin analyses, hampers efficiency and sustainability of their operations. IADP interventions under sub-component 2.3 will strengthen the existing POs/cooperatives and establish new ones, support their transformation to market and business oriented farmers' organizations capable of supporting their members to access a wider range of services in an efficient and sustainable manner. In addition, the capacity building interventions under sub-component 3.1 will strengthen MoA's institutional capacity on agri-business dimensions in support of the gradual shift towards market development interventions. This will include careful assessment of available services from various actors, their linkages with POs and opportunities for strengthening value addition and market linkages, as well as development of Cooperative Proclamation.

30. **Women's empowerment is key to addressing household food and nutrition security** but attention needs to be paid to social and cultural conditions to quickly foster their economic participation. In the past IFAD-supported projects in Eritrea, the development of small livestock (sheep, goats, poultry) and beekeeping have been very effective in the rehabilitation of destitute, single-parent and women-headed households. Unfortunately, the absence of gender-disaggregated data limits measurement of their impacts and outreach to women. The targeting of interventions to empower women and other vulnerable groups under IADP will include gender assessments in order to understand the barriers and bottlenecks to women's participation in more productive value chains. Under component 2, IADP will use MIHAP to reach poor women and other vulnerable groups, packaged with technical support, nutrition education and participatory approaches to enhance their inclusion and economic empowerment. Furthermore, the IADP M&E system will be improved to collect sex and age disaggregated data to strengthen tracking of women outreach and changes in their social and economic empowerment as well as minimum dietary diversity (MMD-W).

31. **Gaps in institutional capacity have constrained project implementation progress,** in Eritrea, particularly in procurement, financial management and Monitoring and Evaluation:

    1. **Procurement has been a major bottleneck** to project implementation in the Eritrean portfolio of IFAD. This is causing significant implementation delays, in particular for infrastructure works and the acquisition of imported equipment and goods. The recent Procurement Risk assessment points to shortcomings in many areas, including lack of: adequate legal and regulatory structure, public bidding documents and access to public procurement information. Under IADP, technical assistance will be provided to build capacity in procurement (in particular with respect to IFAD procedures) and provide hands-on technical assistance to project implementers;
    2. **Financial management of ongoing projects is inadequate**, due to semi-manual reporting systems and weak communication infrastructure, including internet coverage. Internal and external audit systems are in place but need to be strengthened. IADP will provide the necessary support to enhance the effectiveness and efficiency of the financial

management function through the procurement of integrated financial management software and targeted capacity support.

3. **Limited availability of data presents significant challenges** in measuring outcomes, impacts, value for money and evidence-based policy engagement with GoSE. IADP will strengthen the M&E systems in GoSE to ensure that baseline surveys are timely undertaken and achievements are sufficiently documented, shared and the associated lessons compiled to support knowledge sharing and learning within the country and beyond, including for social inclusion related indicators and achievements.

32. **Implementation Readiness.** Experience with previous projects, both closed and ongoing suggests the need to focus attention on implementation readiness and start-up. The entire portfolio has experienced significant start-up delays e.g. Baseline studies, ESMPs, Gender strategies and exit strategies are often prepared well into project implementation. These delays presents operational and project management gaps which affects achievements of critical results, impact, sustainability and implementation of safeguards framework of project interventions. To strengthen start-up and mitigate potential implementation delays, critical start-up activities will be advanced through NAP repurposed resources.

2. Project Description

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

33. IADP aligns to all three objectives of the Eritrea COSOP (2020 - 2025) i.e. SO1: Increased resilience and adaptation to climate change through sustainable management and utilization of natural resources (land and water); SO2: Improved access to and use of appropriate technologies, infrastructure and services for enhanced productivity and sustainability of smallholder agricultural and fisheries systems; and SO3: Build institutional, community and individual capacities to enhance food and nutrition security and sustainable livelihoods.

34. The overall **goal** of IADP will be to contribute to poverty reduction and food and nutrition security of rural households. The **Project development objective** (PDO) will be to enhance smallholder agricultural production and productivity in a sustainable and climate-resilient way and improve rural livelihoods.

35. **Intervention area & phasing approach**. IADP will be national in scope, targeting all six Zobas (regions), with core interventions implemented in the four (4) inland Zobas[26], while the two (2) coastal Zobas[27] will mostly be supported through environment and ecosystem protection interventions. IADP will be expected to cover about 36 sub-zobas (districts), which is 40 percent of all the Sub-zobas. Although a large proportion of these sub-zobas overlaps with the target areas for the on-going IFAD project FReMP, there is no foreseen overlap of beneficiaries. The target groups supported by FReMP on fish farming interventions in the inland Zobas are mainly landless people and fisher folks in the coastal Zobas. IADP will target different beneficiaries, focusing more on agro-pastoral based livelihoods. A system for tracking beneficiaries will be deployed as part of M&E system to ensure that the potential overlaps are appropriately captured.

36. The Zoba will be the operational unit for programming, targeting, implementation and monitoring and evaluation. In view of the varied institutional capacity across the different Zobas, the intervention area will be expanded gradually, using a phased approach to ensure effective and sustainable achievement of outcomes and impacts. Among other triggers, the expansion will be determined by:

- Level of readiness of the decentralized implementing entities in the Zobas to manage additional area/activities, starting from Component 1 on watershed management interventions, with gradual expansion to Component 2;
- Assessment of status of watershed treatment which will determine the appropriate entry point for interventions under Components 1 and subsequently 2;
- Impact assessment studies of NAP, which will provide guidance on the Zoba/sub-Zoba capacities, experiences and gaps to mitigate potential implementation inefficiencies.

37. The PIM will describe how the expansion process will be sequenced over the life of IADP, and provide clear trigger-based milestones. In addition, the expansion process will be assessed at MTR to take stock of the progress made on the overall implementation of the project, and to consider adjustments and changes that would need to be introduced to the expansion process and enhance implementation efficiency.

38. As per the agro-ecological zones of the intervention area, the main farming systems are: semi-sedentary agro-pastoralism in arid and semi-arid areas and sedentary farmers mainly in highlands and midlands, who practice mixed crop-livestock agriculture with limited land availability. These farming systems and agro-ecological zones will be taken into account in determining the application of the differentiated models of the Minimum Integrated Household Agricultural Package (**MIHAP**) that will be upscaled under IADP.

39. **Target group**. Primary beneficiaries according to different social groups: a) households cultivating small areas of rain-fed crops (about 1 ha) or small areas of irrigated crops (0.1-0.25ha); (b) pastoralist households with a maximum of 5 cattle and 10 sheep/goats; (c) resettled households (IDPs, expellees, returnees and demobilized soldiers); and (d) woman-headed-households (WHHs). WHHs constitute over 40% of households in the Project area.

40. Project interventions will directly benefit approximately 60,000 rural households or about 300,000 household members, both in irrigation, rain-fed and agro-pastoral farming systems, agribusinesses and Micro, Small and Medium Enterprises (MSMEs), and other beneficiary households (e.g. those benefiting from vaccines for their animals, access to water for their animals, etc.). The estimated breakdown is as follows:

1. Approximately 7,500 households will benefit from water and soil conservation measures and irrigation schemes, coupled with extension services and access to inputs and breeding animals (MIHAP approach), as well as improved market access;
2. About 10,000 households belonging to vulnerable groups, often in rain-fed farming systems without potential to develop irrigation schemes, will receive targeted support to access production assets and inputs (seeds, poultry and small ruminants, seedlings, equipment for home gardens, energy-saving stoves, income-generating activities), as well as livestock services (vaccination campaigns);
3. Approximately 6,600 households will benefit from a variety of micro and small agro-processing enterprises; and
4. An estimated 36,000 households, also living in the targeted villages, will benefit from the overall services provided by the Project, including local availability of improved seeds, nutrition education, livestock vaccinations, water for their animals, potable water, animal health services, Farmer and agro-pastoralists Field Schools (FFS/AFS), strengthen POs to support post-harvest handling, processing and market access, local seed multipliers and community based para-vets.

41. **Targeting strategy**. In line with MoA's approaches and strategy documents, the planning and implementation of activities will be based on a strategic territorial approach, starting from the watershed. Geographic targeting/prioritisation will include three stages: a) selection of watersheds in the highlands of the Zobas Anseba, Debub, Maekel and part of Gash-Barka; and lowland areas (part of Gash-Barka, Northern Red Sea, Southern Red Sea). Based on a mapping of the watersheds in the country, criteria for prioritisation will be (in order of priority): watersheds with headworks[28] (untreated); watersheds with treated headworks but with irrigation infrastructure not developed; treated watersheds but without a headwork; malfunctioning downstream irrigation systems of treated watersheds (requiring rehabilitation); and, finally, new or untreated watersheds; b) within the selected watersheds, Sub-zobas with high food and nutrition insecurity and poverty will be prioritized. Environmental hotspots or Sub-zobas with socially excluded populations falling outside the watersheds may be selected as well; c) selection of beneficiaries including vulnerable households/villages, particularly for interventions under component 2 will be on annual basis, using pre-determined criteria. The National Project Coordination Office (NPCO) will provide guidance to the Zobas and Sub-zobas in line with the Project Implementation Manual (PIM), aligning the site selection of project activities to the needs of the different target groups.

42. Based on the NAP experience, within the selected Sub-zobas, vulnerable groups will be selected at village level by the Sub-zoba and Kebabi (cluster of villages) administration with community participation and other stakeholders, such as the local branch of the National Union of Eritrean Women (NUEW), and the specific interventions planned accordingly. Special efforts will be undertaken to reach out to youth and women through a combination of direct targeting, self-targeting, facilitation (information, group formation, etc.) and empowerment measures. The Zoba and Kebabi administration will maintain records/profiles of characteristics of their selected beneficiaries. The project will ensure 40% of the positions of leadership to women and youth in the Project committees and track this through M&E in order to monitor progress.

43. For soil and water conservation (SWC) and irrigation investments, selection criteria will be: a) availability of a reliable source of water for livestock and irrigation (preferably also for human consumption); b) willingness of communities to participate in the proposed watershed treatment investments, in terms of providing labour and construction materials. To strengthen the process of site selection, IADP will build on a nascent capacity within the MoA to undertake surveying, mapping and geographical information system (GIS) and remote sensing based planning. Additional technical assistance will be mobilized to support these activities.

44. **Women empowerment.** The focus on empowering and creating opportunities for women in agriculture, livestock and agri-business will be operationalized through: i) a gender needs assessment as part of the socio-economic survey to be carried out at Project start-up to guide the roll out of gender mainstreaming activities and to develop a draft gender action plan. The project will also build capacity for gender mainstreaming to the implementing officers and Project teams. Household methodologies (including GALS) will be explored to empower communities and address gender equality issues at household level and in the communities. The project provides quotas (at least 40%) for women participation in the farmer groups/associations and cooperatives; ii) dissemination of information on project opportunities, and ensuring that women have access to Project support; iii) establishment and strengthening of women-based groups/associations; iv) creating targeted income generating opportunities for women, according to agro-ecological zones; v) training in entrepreneurship skills and enhance women's participation in social and economic activities by applying the 40% quota; (vi) enhancing women's representation in POs and ensuring that 40% of leadership positions in POs committees are occupied by women; (vii) promoting access to Time and Labour Saving Technologies (TLST), aiming at decreasing women's workload; and (viii) monitoring the implementation of the above actions through the capturing and reporting of sex and age disaggregated data. The rural population will be sensitised on violence against women including harmful cultural practices that perpetuate gender disparities, such as unequal workloads among others. The women outreach of 40% will be assessed at MTR, with the aim to adjust the target upwards in cognizant that women constitute 55% of the Eritrea's population.

45. Village Administrators, in collaboration with the NUEW that has a well-structured presence at Zoba, Sub-zoba and Kebabi levels, will be instrumental in community awareness and information mobilization, direct or self-targeting of women and women's groups as well as in identifying economically and nutritionally vulnerable women-headed households in the intervention villages. Also, the Eritrean Women Agribusiness Association (EWAA) will be a partner to reach out to women groups and facilitate formation of associations with economic purpose. All these will be done in alignment with IFAD's Revised Operational Targeting Guidelines.

46. **Youth empowerment.** A detailed youth needs assessment will be incorporated into the initial project studies as part of the socio-economic survey to determine the youth groupings for targeted interventions, such as young people from minority groups, youth returnees and deportees. Young women and men, including those with disabilities, will be targeted by the Project to acquire entrepreneurship and technical skills, as well as training programmes in environmental protection and water conservation agriculture. They will benefit from MIHAP packages for micro, small and medium scale enterprises (bee-keeping, poultry, dairy cows, small ruminants) or other income-generating activities. IADP will liaise with ongoing projects with respect to youth skills development[29] so as to exploit any existent synergies. In addition, and in order to facilitate the achievement of the Project's target of reaching 40% youth, the following will be done: i) develop a 'Social Inclusion (Youth and Gender) Strategy and Implementation Plan' with a full budget for its operationalisation; (ii) identify eligible youths classified into two groups – 18-24 year olds and 25-35 year olds; iii) establishing associations and setting-up agricultural tools workshops and other

entrepreneurship activities, such as post-harvest services under component 2; iv) enhancing vocational skills and entrepreneurship capabilities; v) explore business opportunities to empower and motivate youth, related to the provision of services in agriculture (para-vets, lead farmers, employment in cooperatives, etc.) and environmental protection; vi) use youth lead and peer educators in project activities to empower their leadership skills; vii) ensure that the M&E system collects, analyses and disseminate youth sex disaggregated data as a means of monitoring participation and impact on demographic categories; and viii) provide targeted capacity building for youth in public services under Subcomponent 3.1. Youth participation target will be assessed at MTR and adjusted accordingly.

47. **Nutrition.** The livelihoods, food and nutrition security of the most vulnerable households and groups will be improved through provision of MIHAP for dietary diversity through production of cereals and animal protein. The decentralized services of the MoA will be responsible for implementation, including mobilization, distribution of packages and capacity building of households, using its existing MIHAP delivery framework. Adapted packages for about 5,000 households benefitting under MIHAP, as well as other 36,000 households beneficiaries of advisory and livestock services and distribution of inputs will consist of: a) poultry, rabbits, small stocks and dairy cows to ensure better availability of animal protein-food; b) seeds and planting materials to increase crop diversity, intercropping of nutrient-dense leguminous and staple crops, and off-season horticulture; c) introducing and improving beekeeping; d) promoting multi-purpose crops and trees varieties which offer high nutrients foods (fruits, vegetables and nuts), wood and fodder; e) providing inputs for the establishment of home gardens; and f) raise awareness among poor rural families on better nutrition and healthy diets, food processing and preservation, through the promotion of nutrition education programmes. To address undernutrition among adolescent girls, children and ethnic groups, the project will support capacity building and training of parents on Integrated Homestead Food Production and on nutrition and health education. More targeted interventions will be planned in regions where under-five stunting rates are higher.

48. Nutrition practices will be further improved through mass education and behaviour-change communication. This will target the community members in the project implementation sites. TV and radio will be used as a means for greater outreach. At the household level, women in particular will be trained to improve the nutritional content of household meals, complementary feeding and other practices to reduce malnutrition. Backyard/homestead vegetable and fruits gardens will be established to reduce micronutrients gaps in the households' seasonal food flows. Access to potable water will be an essential part of the nutrition improvement and reduction of workload for women.

D. Components/outcomes and activities

49. **Component 1: Integrated Watershed Management** – Given the poor spatial and temporal distribution, as well as the scarcity of rainfall in Eritrea, with over 90 percent of the total area receiving less than 450 mm per annum, soil moisture deficiency is the single most risk factor to the country's food security. To address this challenge, this Component will support water-centred activities, thereby deploying watershed approach (in the context of integrated water resources management (IWRM) as the planning unit. The component will finance activities required to plan and implement IWRM to restore the hydrologic and ecological functioning of watersheds, enhance the sustainability of existing land uses and, improve its resilience to climate shocks. A short-term technical assistance (TAs) shall be hired as needed (see subcomponent 3.1) to facilitate implementation of some activities proposed under this component through a hands-on support to staff of the implementing departments.

50. The expected outcome for this component is strengthened environmental sustainability and climate resilience of poor rural peoples' economic activities. The interventions under this component will be built on interventions supported under NAP, in following areas:

51. *Subcomponent 1.1: Development and Implementation of Participatory Integrated Watershed Management Plans*–The subcomponent will focus on identification and characterization of watersheds using GIS mapping and other techniques; intervention planning, and preparation of detailed design for selected watersheds and provision of equipment to support watershed assessment and monitoring. The main activities include i) identification of most effective soil and water conservation (SWC) measures to be supported under Subcomponent 1.2; ii) site selection for SWC activities, micro-dams and irrigation (specific selection criteria is elaborated in the PIM)[30]; iii) establishment or strengthening of watershed committees and water-users associations (WUAs) through training on participatory planning, agricultural water management, Operation and Maintenance (O&M) of infrastructure; iv) establishment and training of self-help and user groups, targeting women and youth to undertake specific watershed management activities, including income generation enterprises such as apiculture (beekeeping). The intervention plans will take into account the impact of investments and provide a basis for the determination of sustainable natural resource management strategies and production activities in Component 2.

52. *Remote sensing* based monitoring and evaluation systems will be acquired, and staff trained, to support assessments of land and soil degradation in micro-watersheds and to measure landscape management related results. This will also include assessments of watershed natural resources, such as water resources (quantity and quality), resilient biodiversity and habitats, climate change, anthropic effects. To enhance effectiveness of the remote sensing application the support will include enhancement quality of internet connectivity under component 3.1.

53. *Hydro-meteorological* capacities along selected watersheds and spate irrigation sites will also be established to improve availability of real time data to strengthen downstream planning for water development interventions. In addition to procurement and installation of hydro-met station instruments, the staff of MoA, MoLWE and Zoba Agricultural Divisions will be trained in the management of the systems as well as timely data/information communication/dissemination. The Project will also develop partnerships with regional and global metrological research stations, including IGAD, to improve capacity of analysis and prediction.

54. *Subcomponent 1.2: Implementation of Watershed Management Plans* – The activities under this subcomponent will be built on plans generated under subcomponent 1.1. The proposed interventions will include SWC and construction and upgrading of water infrastructure. The SWC interventions will be site specific and based on community and farmer interventions, and may include: hillside closure and afforestation; hillside and on-farm SWC options; tree planting supported with tree nursery establishment; and

other viable technical alternatives. The varieties of seedlings will be selected for their contribution to soil conservation and soil fertility improvements, as well as economic benefits (income generating) and household nutrition, such as apiculture (beekeeping) and multi-purpose trees.

55. The Project will also support the production and dissemination of energy-saving technologies, especially stoves in selected watersheds and promotion environmental clubs in selected schools at national level. This would be aimed at increasing awareness to students about environmental protection and conservation.

56. *Subcomponent 1.3: Watershed Restoration and Water Management Infrastructure* The proposed interventions under this subcomponent include: a) upgrading of existing micro-dams (e.g. provision of appropriate water outlet or lifting); b) construction of new micro-dams (earthen and masonry/gravity), shallow wells and small-scale surface irrigation; and c) pilot/adaptation of modern irrigation technology, such as drip and sprinkler irrigation. A total area of about 10 000 ha is targeted. To the extent possible, all dams will facilitate for integrated water supply systems for livestock, irrigation and human consumption. The identification and implementation of interventions under this subcomponents will be guided by participatory mapping, intervention planning and detailed design, informed by subcomponent 1.1, and involving communities and individual farmers. To ensure timely and quality delivery, the watershed characterization and mapping activities in sub-component 1.1 will be followed by preliminary and feasibility studies and detailed designs, with TA support as needed.

57. **Component 2: Crop and Livestock Productivity and Rural Livelihood Improvement**– Building on the outcomes of the water-centred interventions from Component 1 and NAP achievements, the aim of this Component is to sustainably invest in agriculture and livestock productivity enhancing interventions, post-harvest handling of agricultural commodities and improving resilience of farmers and food systems to climate change, through climate smart agriculture (CSA) practices. The CSA technologies and practices for crops and livestock will be supported in phased manner – to be implemented in the selected areas as a starting point to then be scaled up, prioritizing key commodities[31]. Crops and animal products that ensure availability of diversified food for healthy and sustainable diets, drought resistants' crop varieties and forages, high income generating agricultural products: poultry, dairy, oilseed crops, tree forages, leguminous crops for food and forage, beekeeping, horticulture and cereals. About 36,000 households would benefit from enhanced advisory and livestock services, improved production assets and seeds, and nutrition-sensitive agriculture practices. The differentiated **MIHAP** models (described in section c) will be integrated in this component to enhance livelihoods, food and nutrition security of the most vulnerable households, such as women headed HHs and youth. The government's framework through the decentralized services will be used for implementation and distribution of MHIHAP packages, as described in the PIM. The packages will be blended with advisory support and nutrition education to enhance their impacts and sustainability through a graduation process.

58. In addition, this component will draw on the upcoming IFAD/EU micro-credit project to facilitate access to credit for individual beneficiaries and groups to support their investment/business plans. The expected outcome would be "Increased diversification of livelihoods and resilience of communities".

59. *Subcomponent 2.1: Access to Advisory Services*–Farmers will benefit from advisory services[32] provided by the Agriculture Extension Department (AED) to enhance adoption of improved climate-smart agricultural and livestock practices, including Time and Labour Saving Technologies (TLST) and animal health services using a decentralized community-based approach. It should be noted that nutrition, gender and youth sensitive practices will be emphasised. In addition a graduation elements will be integrated into services provided under the **MIHAP** program to support households' graduation from the program. IADP will support various interventions in this sub-component, highlighted hereunder.

60. *Farmer Field Schools and Training* – The Project will support the rollout of FFS, including agro-pastoralist field schools (AFS), as currently institutionalized in the MoA. The FFS/AFS implementation capacity will be enhanced through: a) adaptation of training manuals and field materials to local agriculture and agro-pastoralism systems; b) training of extension staff from national and zobas as national Master Trainers (MT); c) training of extension agents (ToT) at Sub-zoba level; d) training of facilitators (ToF) at Kebabi and village level, including women and youths, and other frontline extension agents[33]; and e) conduct on-farm demonstrations to mainstream innovations. FFS topics will contribute to gender, nutrition, and resilience (CSA, Integrated Pest Management (IPM)), TLST, organic agriculture, rangeland management and sustainable livestock feed sources. The topics will be selected by farmers in a participatory manner in accordance with FFS standard guidelines (details are presented in PIM).

61. The Project will also train and support the local input production and services by youth and women groups/associations to enhance community-based services. In line with the aspirations of the *new COSOP (2020 - 2025)*, farmers will also receive support on basic post-harvest handling. The principal focus will be to identify opportunities to reduce food losses and waste across the different commodities and train farmers on post-harvest handling, storage and value addition.

62. *Livestock Services* – To enhance the outreach of animal health services and create youth employment, young men and women para-vets will be trained and equipped. These para-vets will be selected and employed by their communities to deliver primary veterinary services, such as basic treatment (drugs and vaccination); herd management, and where relevant, artificial insemination services to improve breeds for dairy. They will receive comprehensive trainings and supervision from the decentralized animal health clinic experts (veterinarians), starter kits, transportation and business development support. A certification scheme will be adopted to ensure quality and professionalization of their services.

63. *Subcomponent 2.2: Sustainable Access to Inputs and Technologies for Enhanced Production and Post-harvest Management* – Building on the achievements of NAP, seed availability of targeted crops and forages will be improved. Essentially, IADP will seek to enhance and professionalise the production and distribution of improved seeds of targeted crops and forages. The National Seed Unit (NSU) under AED, in collaboration with Zoba seed units, will technically backstop private-sector seed growers (individual farmers) for multiplication, processing and marketing of certified/improved seeds. Research institutes will receive support to develop CSA technologies adapted to various agro-ecological conditions and needs of women and youth. Technologies to reduce post-harvest loses, such as on-farm processing, packaging and storage and food safety/quality will be given due attention.

64. *Piloting agribusiness and development of micro-enterprises*: In line with COSOP aspirations to gradually move towards market-based development, IADP will strengthen producer organisations (sub-component 2.3) to professionalize their operations and place them in the value chains. Particular support will be provided to organised youths to serve as agricultural service providers for inputs and tools for land preparation, harvesting, threshing, organic fertilizer production, etc. Decentralized agricultural tools manufacturers (metal and wood), employing youths will be supported to supply innovative and adapted agricultural tools and improved beehives for apiculture development. They will be linked with AED and NARI for the development and trials of TLST, such as manual and draught animal power (DAP) and no-till planters. Other potential small enterprises that could be managed by the producer organisations include local processing and value addition, and innovative logistics solutions for transporting agricultural products to markets, such as improved animal driven carts and cold chain.

65. *Subcomponent 2.3: Producers' Organizations and Cooperatives Support*– This subcomponent seeks to build the capacity of producer organizations on various organisational, technical and business management aspects. The support will be aimed at ensuring that they are able to address the constraints/challenges faced by their members while, at the same time, exploit opportunities for strengthening their operations. The priority will be on existing groups that are active and keen to expand their activities and establishment of new need-based POs, with attention to women and youths based associations and groups. The exact nature of activities to be supported will be guided by a needs assessment and PO profiling to be carried out at the start of the Project. The profile of existing POs and cooperatives will i) identify potential activities that could underpin their further development ii) specific capacity building requirements of the individual organizations and iii) potential for establishment of new POs.

66. Extension agents and agribusiness coaches will assist producers' groups and cooperatives to enlarge their membership base, assess the needs of their members, prepare business plans and improve their internal governance, while gradually expanding their marketing and processing operations. The capacity of POs and Cooperatives on service provision to members, managerial and marketing and value addition skills will also be strengthened. In addition, their management boards will benefit from capacity building support through exchange visits.

67. To support access to finance, IADP will link the qualifying POs and Cooperatives, including youth and women based associations or groups to the planned EU-IFAD micro-credit project. This will enable them to access the appropriate micro-finance facilities and improve the effectiveness, efficiency and sustainability of their respective enterprises. This may involve working closely with the microfinance institutions and other FIs to develop suitable loan products for agri-business development.

68. AED will lead implementation of this subcomponent, given its mandate with respect to POs, marketing and revolving funds. Potential partners include the other relevant MoA Departments, the Eritrean Women's Agribusiness Association (EWAA), NUEW, Agricultural Colleges, private firms and farms with knowledge and experience in management, processing, marketing and input supply, financial service providers, and other relevant ongoing or planned projects supported by GoSE and its development partners.

69. **Component 3: Capacity Building & Project Support Services** – This will be a crosscutting component servicing the technical components in alignment with Strategic objective 3 of the COSOP (2020-2025). It comprises of two subcomponents.

70. *Subcomponent 3.1: Institutional Capacity Building and Policy Support*– This subcomponent has a dual focus – institutional strengthening and policy engagement support. The main objective of institutional capacity building (CB) will be to provide capacity augmentation to the implementing entities of IADP, including human resources development, and investments in facilities and equipment to support overall institutional development and effective project implementation. The primary focus will be on project implementing institutions within the MoA Departments to strengthen their technical functions and project management skills. The aim will be to ensure that these institutions have the necessary capacities to deliver project outputs and outcomes, sustain and replicate the successful IADP interventions beyond the life of the project.

71. Specific capacity building activities will be guided by a capacity needs assessment to be undertaken as part of the start-up activities to identify capacity gaps and actions needed to address them. While some of the identified capacity gaps will be addressed using Technical Assistance, others will be addressed using alternative measures, such as targeted technical implementation support and upgrading technical skills of staff through specialized training courses. Indicative areas of TAs include: i) Integrated Watershed Management, ii) Meteorological Support, iii) GIS-based land use planning, iv) climate smart agriculture v) procurement management vi) financial management, and vii) social inclusion and nutrition-sensitive agriculture, and viii) food security and nutrition assessments.

72. The target institutions include:

- AED Planned interventions will seek to strengthen its capacity to roll-out Farmer Field Schools, agri-business development, nutrition-sensitive agriculture, value addition of different commodities, cooperative development and marketing services, protection of plant and animal diseases as well as combating migratory pests.
- National Agriculture Research Institute (NARI) – NARI will be strengthened in the development of seed producing protocols and its production of foundation and breeder seeds, to increase the quantity and quality of seed in the country. It will also be supported in strategic development and planning and to perform adaptive research targeted at the following subjects: TLST, IPM, development of bio-pesticides, organic fertilizers, rangeland management, food safety and nutrition, natural resources management research including agro-forestry, as well as livestock research activities;
- National Animal and Plant Health System (NAPHL) – NAPHL will be strengthened to deliver disease diagnostic activities and to ensure availability of quality vaccines to decentralized animal health clinics. In addition, capacity building (both human and institutional) will be conducted to the decentralized regional Laboratories to ensure diagnostic tests conducted at regional level NAPHL will also receive support to enhance availability of vaccines and veterinary drugs and distribution to the decentralized animal health clinics.
- Regulatory Service Department (RSD) – The department plays a critical role in seed multiplication and inspection, and quality of plant and animal products, feed, drugs and agro-chemicals. The RSD will have increased capacity to provide effective

control and inspection services in food and feed safety, safety and quality of animal drugs and pesticides, plant and animal quarantine and seed quality. It will improve inspections services and management of natural resources and the ability to screen out environmental impacts of agricultural projects. The Department will be strengthened through purchase of equipment and infrastructures, technical knowhow at HQ and regional inspectorates at zoba level.

- Planning and Statistics Division (PSD) – PSD will play an important role in overseeing IADP implementation. Therefore, the Division's capacity will be strengthened in the area of sector planning, monitoring and evaluation, analysis and ability to generate timely and comprehensive data in the sector and to have robust agricultural statistics for improved and evidence based planning process. The relevant M&E officers in the NPCO and PSD will be trained through the second phase of IFAD's Program on Rural M&E (PRiME). PSD will also be supported in baseline data collection with the purpose of building its capacity on data collection with focus on standard nutrition indicators and surveys (i.e. Minimum Diet Diversity for Women /MMD-W, Nutrition Knowledge, Attitudes and Practices /KAP); this should contribute to fill the national gaps on reliable data to assess Eritrea progress on nutrition;
- Administration and Finance Department (AFD) – AFD will be charged with the responsibility of overseeing the financial management and procurement functions of the project. Accordingly, the department will be supported to enhance their ability to ensure that IADP's financial management and procurement functions are efficiently and effectively undertaken, and the acquisition of an integrated financial management and project management software;
- National Project Coordination Office (NPCO) and Zoba Project Coordination Office (ZPCO) – The NPCO will play an important role in overseeing IADP implementation and progress report. The NPCO and ZPCO staff will be provided with the capacity (skills and equipment) required to ensure that IADP implementation is effectively undertaken and the implementation progress captured and appropriately reported.

73. Supporting Divisions: The ministry's supporting divisions, such as the Human Resource Development Division, Strategic Information Division, Public Relations, Internal Audit and Legal Services will also be supported to perform their respective functions in alignment with Strategic Objective 3 of the COSOP. This will include strengthening of IWRM and Information systems as outlined hereunder.

74. IWRM – To ensure effective planning and implementation of IWRM interventions, the Project will support strengthening of the hydro-meteorological capacity along selected watersheds and spate irrigation sites to ensure effective planning and implementation of IWRM interventions. In addition to procurement and installation of hydro- meteorological station instruments, the staff of MoA, MoLWE and Zoba Agricultural Divisions will be trained in the management of the systems as well as timely communication and dissemination of information/data. The Project will also develop partnerships with regional and global metrological research stations, including IGAD's Climate Prediction Application Centre in Nairobi, to improve capacity of analysis and prediction;

75. Geographical Information System (GIS) & Agro-meteorology data– To enhance Early Warning Systems (EWS) capacities will be strengthened in generating and managing Agro-Meteorology data, expand application of GIS and remote sensing, improve and increase food market information systems and ICT infrastructure in general to enhance connectivity within different branch offices of MoA.

76. *Policy Engagement/Support* – The focus of this intervention will be to facilitate the development and/or review and update of basic policies and strategies of selected subsectors to support the agricultural sector and rural transformation. More specifically, policy engagement will include support to the translation of policies into regulations for the food safety and certification protocols. Other potential areas include seed sector development, cooperative proclamation, animal health legislation, enabling conditions for engagement in market-oriented production and capacity building of GoSE on policy analysis. IADP will support evidence-based dialogue[34] with GoSE concerning the graduation pathway and sustainability of the MIHAP model, and nutrition sensitive agriculture. IADP will employ a gradual approach to policy engagement, to launch methods of working that the GOSE could take up in the long run to transformation of the agricultural sector and its sustainability.

77. *Subcomponent 3.2: Project Management and the South-South Triangular Cooperation (SSTC)*– The objective of the subcomponent will be to manage the Project in an efficient and effective manner by providing overall coordination, including planning and implementation, financial management and control, procurement support, Monitoring and Evaluation, knowledge management, and progress reporting. It will also ensure liaison and linkage with all other relevant projects/programmes being implemented in the country that seek to address similar or related development agenda; this would be aimed at taking advantage of existent synergies and avoiding duplications. The project will strengthen the SSTC related learning and exchange initiatives with relevant regional and international institutions, building on the exchanges and institutional partnerships with Zambia, Ethiopia and Egypt under NAP.

78. *Project Management –* will involve coordinating and monitoring implementation of Project activities. The details of project management structure and responsibilities of various players at national and Zoba level are presented in the PIM and Section K. Capacity building will be provided to enable the project implementers to adequately undertake their responsibilities, as outlined in subcomponent 3.1. (details in section K below).

79. *SSTC* – Consistent with the COSOP, SSTC facilitated by the *Addis Ababa Hub*, will support exchange visits for innovation-discovering as well as training of different stakeholders with projects and training centres in other countries. Focus areas for SSTC include: technical assistance; staff specialized training, such as catchment protection, irrigation development and ICT (GIS, remote sensing); learning and knowledge sharing and innovations scaling up agenda. This would aim at speeding up rural transformation and agricultural development. The related process will be facilitated by IFAD through partnerships with CGIAR, and other regional and international institutions, including the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and bilateral partners.

80. **Component 4: Disaster Risk Reduction and Management**–This is a "zero budget allocation" component. It is a response window to improve the project's agility to respond to crisis/emergencies declared by the Government that have significant adverse impacts on IFAD's target group, achievement of project objectives and the overall viability of project intervention. The

objective will be to avail funds that can be quickly drawn, hence giving the project adequate preparedness and timely response when adverse conditions manifest, such as recurrent weather extremities or any other calamities, such as the recent COVID-19 pandemic.

E. Theory of Change

81. The objective of the Project is to facilitate the sustainable enhancement of smallholder agricultural production and productivity and improvement of rural livelihoods. To achieve this objective, the Project will address the strategic constraints to crop and livestock production and livelihoods, namely: a) low and erratic rainfall (drought prone area), b) land degradation and low soil fertility, c) limited access to inputs and delivery systems, d) inadequate extension services outreach and technical skills; e) limited access to markets and value addition opportunities, f) high post-harvest losses, g) limited access to productive resources and economic power by youth and women to engage in micro-enterprises and derive employment; h) lack of households knowledge on production and consumption of nutritious food; and i) gaps in institutional capacity. The combined effect of these constraints is the perpetual underperformance of the country's agricultural sector and the resultant poverty levels in the rural areas, given that the sector employs the majority of the rural population.

82. IADP will address these constraints through sustainable watershed management and community based integrated soil and water management conservation strategies linked with productivity and livelihood enhancing interventions and institutional capacity building. The focus is to enhance availability of water, for agricultural and livestock production, strengthen access to inputs and adoption of CSA and labour saving technologies. The project will pay attention to inclusive participation and empowerment of women and youth and enhancing household nutrition, mostly through the MIHAP. The project will pay attention to inclusive participation and empowerment of women and youth and improving food.

83. In order to improve the quality of diets of project's beneficiary households, IADP will increase availability and accessibility to diversified and nutritious food by following different pathway in addition to the income pathway: i) Increased knowledge on nutrition and dietary diversification through nutrition education, promotion/training on climate smart production practices, Social Behaviour Change Communication (SBCC) interventions and campaigns; ii) Increased availability of diversified and nutritious food through intercropping with pulses, beans and vegetables, iii) Enhanced livelihood and agriculture assets of HHs through provision of MIHAP package; iv) Improved caring practices through provision of time and labour saving technologies; v) Improved access to safe water and vi) Reduced food waste and loss through improved farmers' capacities (Annex 2.1 incudes a specific TOC for nutrition sensitive interventions under IADP).

84. IADP will gradually introduce business planning and market orientation into project interventions, with a two-step process i.e. step i. strengthen and professionalise producer organizations to be inclusive and to be able to provide services to their membership, ii) through these organisations, pilot a few agro-SMEs to better understand the constraints to agri-business and refine models for consideration in future investments. The project may also facilitate access to credit through the *upcoming* IFAD/EU micro-credit project.

85. Building on the National Agriculture Project (NAP) and to complement the overall impact areas of IADP, institutional capacities of the key agencies in the Ministry of Agriculture will be strengthened to enhance regulatory services, agriculture research and input delivery systems to ensure that appropriate solutions, technologies and approaches are availed to beneficiaries of the project.

86. Overall, these investments will result in sustainable enhancement of smallholder agricultural production and productivity and improvement of rural livelihoods security of the IADP target beneficiaries; and in the long-term contribute to poverty reduction, and food and nutrition security of rural households in the targeted areas. The schematic view of the ToC is presented in Annex 2.

87. The key assumptions underlying the ToC are that: enhancement of the project implementers' capacities would not only enable public institutions to effectively deliver tailored services, according to farmers' specific needs, but also provide an improved environment for increased investments in the agriculture sector; watershed management, combined with irrigation development, offers a sustainable solution to increasing production and productivity of smallholder farmers situated in arid and semi-arid lands; strengthening national input development and delivery systems will improve access to, and intensification of, production by smallholder livestock and crop producers; structuring and strengthening producers' organisations will provide a foundation for the establishment of agribusiness and off-farm employment opportunities in the long-term.

88. The summary of the intervention logic for IADP is summarized in Annex 2 which presents the graphical presentation of the ToC.

F. Alignment, ownership and partnerships

89. *Alignment with SDGs* – By virtue of IADP's goal and development objective, the Project is aligned with and will contribute to the achievement of the following SDGs: eradicating extreme poverty (1); ending hunger, guaranteeing food security, improving nutrition and promoting sustainable agriculture (2); achieving gender equality and empowering all women and girls (5); fighting climate change and its repercussions (13); and preserving and restoring terrestrial ecosystems (15).

90. *Alignment with the United Nations Strategic Cooperation Framework (SPCF); 2017-21*– IADP is aligned with different outcomes of all the four pillars of GoSE-UN SPCF as highlighted herein: a) Outcome 1 (Health and Nutrition) and Outcome 2 (Water, Sanitation, and Hygiene (WASH) of Pillar 1 (Basic Social Services); b) Outcome 4 (Environment, Resilience and Disaster Risk Management (DRM) of Pillar 2 (Environmental Sustainability, Resilience and Disaster Risk Management); c) Outcome 5 (Capacity Development) of Pillar 3 (Public Sector Capacity Development); and d) Outcome 6 (Food Security and Livelihoods) and Outcome 7 (Gender and Youth Empowerment) of Pillar 4 (Inclusive Growth, Food Security and Sustainable Livelihoods). It should be noted that the UN Country Team is in the process of elaborating a new engagement strategy in the Country (SPCF 2021-2026), given the new contextual developments. Once the new SPCF is in place, IADP implementation will explore the possibility of incorporating the relevant elements.

91. *Alignment with National Priorities*– The Project is aligned to national priorities, including: a) increasing the agricultural, horticulture and livestock output; and (b) earning foreign currency through exports of agricultural and agro-industrial products and substitute imports (Strategic Agricultural Development Plan 2019-2023); and (c) creating farm enterprises that engage in highly productive, profitable agriculture value chains linked to domestic and international markets by 2023 (SMCFS 2019 - 2023). The climate adaptation and resilience building activities also contribute to the national priorities articulated in Eritrea's NAPA and NDC communication (see SECAP for details).

92. *Alignment with IFAD Policies and Corporate Priorities*–IADP's objectives are aligned to IFAD's Strategic Framework 2016-2025, namely strengthening the productive capacity of rural populations and increasing the advantages that rural populations gain from market insertion. It is also aligned to the Country Strategic Opportunities Programme (COSOP) 2020 - 2025) and IFAD 11 mainstreaming themes, targeting strategy, Climate Policy.

93. *Country Ownership* – A number of approaches have been used to entrench IADP's ownership in the country's system. GoSE has committed to co-finance some of the project's investments/interventions; this is reflected in the Project's cost tables. IADP design was very participatory; it involved all the key stakeholders – IFAD, GoSE institutions at different levels, and beneficiaries. As part of the design process, MoA's departments prepared, and submitted to the design team, concept notes that identified existent challenges and the suggested/potential interventions. Country ownership will also be ensured through implementation modalities; see Section IV. a. (Project Management and Coordination).

94. *Harmonization and Partnerships* – The Project will coordinate and harmonize with programmes and/or projects financed by IFAD, GoSE and various development partners that support IADP-related thematic areas. The existing coordination mechanisms for development partners in the country will IFAD's main entry point towards the envisaged partnerships.

Table 1: Potential IADP Collaboration Partners

Project (existing or planned)	Donor/Development Partner	Potential Areas of Collaboration
Improving Nutrition in Eritrea: agro-diversity nourishing communities	FAO	Improving dietary diversity in women and children. The project outputs include: **i)** Food and nutrition attitudes, skills and practices improved, ii) Diversified home gardens and poultry production established and managed, iii) Model community diversity learning centers demonstrating the MHAP model established for income and v) Strengthened institutional capacity and governance for Food and Nutrition Security. IADP will also benefit from the baseline of MIHAP beneficiaries.
Improving Grain Post-harvest Handling and Storage in Eritrea project	FAO/WFP	The project trained about 40 Agricultural Extension Department (AED) staff of the Ministry of Agriculture (MoA) as Trainers at least two from each sub - zobas of four regions (zobas). These highly qualified experts were selected to transfer the new technology to 400 agronomist experts from each Administration localities of each sub zobas of the 4 Zobas. As a nation-wide project, IADP will benefit from the capacities that have been built and the findings of the Postharvest status report will inform IADP interventions under Component II.
FAO's Country Programming Framework for the State of Eritrea, 2017 to 2021	FAO	FAO is assisting the Government to conduct value chain assessments which will also contribute towards the implementation of IADP. FAO will be engaged to assist in the implementation of the Farmer Field Schools (FFS) interventions under Component 2.
Sustainable Job Creation and Growth for Increased Food Security and Resilience in Eritrea	UNDP/EU	IADP will draw synergies from this project particularly in the catchment management activities in Gash Barka.
NAP **FReMP**	IFAD-funded Projects	Front loading IADP start-up activities through NAP completion – implementation readiness activities; Synergies on watershed management interventions around reservoirs where FREMP is engaged in Inland Fisheries, including coordination in the implementation of ESMPs and Dam Management Plans. Performance of the revolving funds;

Drought Resilience and Sustainable Livelihoods Programme	African Development Bank	-The project is implemented by MOA, with scope for operational synergies on: i) Natural Resources Management, ii) Support to Livelihood Diversification, iii) Capacity Building, and iv) Project Management. -Opportunities to mobilise funds under the AFDB ENABLE youth programme will be pursued.
Great Green Wall Initiative Umbrella programme	GCF and partners	The umbrella Programme will provide a framework for GCF investments in the GGWI countries including Eritrea, facilitate learning between country programmes and bring enhanced coherence to monitoring and evaluation efforts. A proposal for GCF additional funds for IADP will also be pursued as additional financing.

G. Costs, benefits and financing

a. Project costs

95. Project costs are preliminary estimated at USD 46.6 million, which will be disbursed over 6 years. The project total costs include the costs for mainstreaming of social inclusion themes, of which14% total costs dedicated to nutrition sensitive agriculture) and about 41% will be dedicated to climate related financing, mainly in component 1.

96. Project costs are estimated at USD 46.6 million, which will be disbursed over 6 years. Project Component 1 (Integrated Watershed Management), Component 2 (Crop and Livestock Productivity and Rural Livelihood Improvement) and Component 3 (Capacity Building & Project Support Services) count in part towards IFAD climate-focused financing[1]. IFAD adaptation climate finance amounts to **USD 19.4 million** and IFAD mitigation finance to **USD 0 million**. This, represents **30 per cent** of the total IFAD financing. The tables below summarize: 1) the cost of components and subcomponents by financier; 2) the cost of categories by financier.

Table 1:Project costs by component and financier

Eritrea
Integrated Agriculture Development Project
Components by Financiers
(USD '000)

	GoE		IFAD Grant		IFAD Loan		Beneficiary Contribution		Total		For.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.		
A. Integrated Watershed Management													
Development and Institutionalization of Participatory Integrated Watershed Management Plans	16	10.0	141	90.0	-	-	-	-	157	0.3	94	47	16
Operationalization of Watershed Management Plans	57	8.8	593	91.2	-	-	-	-	650	1.4	358	235	57
Watershed Restoration and Water Management Infrastructure	913	5.0	9,413	51.5	3,597	19.7	4,337	23.8	18,260	39.1	3,652	13,695	913
Subtotal Integrated Watershed Management	986	5.2	10,147	53.2	3,597	18.9	4,337	22.7	19,067	40.9	4,104	13,977	986
B. Crop and Livestock Productivity and Rural Livelihood Improvement													
Access to Advisory Services	249	9.1	2,480	90.9	-	-	-	-	2,728	5.8	1,031	1,448	249
Sustainable Access to Inputs and Technologies for Enhanced Production and Post-Harvest Management	890	11.7	6,690	88.3	-	-	-	-	7,580	16.3	2,311	4,379	890
Producers' Organizations (PO) and Cooperatives Support	669	9.5	6,412	90.5	-	-	-	-	7,082	15.2	2,112	4,301	669
Subtotal Crop and Livestock Productivity and Rural Livelihood Improvement	1,808	10.4	15,582	89.6	-	-	-	-	17,390	37.3	5,453	10,129	1,808
C. Capacity Building and Project Support Services													
Institutional Capacity Building and policy support	495	8.0	1,995	32.2	3,339	53.9	370	6.0	6,199	13.3	1,947	3,757	495
Project management and South-South Triangular Cooperation	1,599	40.1	1,926	48.3	463	11.6	-	-	3,989	8.6	1,247	2,511	231
Subtotal Capacity Building and Project Support Services	2,094	20.6	3,921	38.5	3,802	37.3	370	3.6	10,188	21.8	3,194	6,268	726
D. Disaster Risk Reduction and Management	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PROJECT COSTS	4,888	10.5	29,651	63.6	7,400	15.9	4,707	10.1	46,645	100.0	12,752	30,373	3,520

Table 2:Project costs by category and financier

Eritrea
Integrated Agriculture Development Project
Expenditure Accounts by Financiers
(USD '000)

	GoE		IFAD Grant		IFAD Loan		Beneficiary Contribution		Total		For.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.		
I. Investment Costs													
A. Works	1 036	5.0	10 268	49.6	4 707	22.7	4 707	22.7	20 718	44.4	4 144	15 538	1 036
B. Services													
1. Trainings and workshops	261	5.0	4 962	95.0	-	-	-	-	5 223	11.2	2 089	2 873	261
2. Consultancies	275	10.0	2 475	90.0	-	-	-	-	2 750	5.9	1 650	825	275
Subtotal Services	536	6.7	7 437	93.3	-	-	-	-	7 973	17.1	3 739	3 698	536
C. Grants and subsidies	-	-	355	100.0	-	-	-	-	355	0.8	-	355	-
D. Equipment and inputs													
1. Equipment	951	12.0	5 765	72.7	1 211	15.3	-	-	7 928	17.0	2 378	4 598	951
2. Crop and Livestock inputs	939	12.0	5 825	74.5	1 060	13.5	-	-	7 823	16.8	2 347	4 538	939
Subtotal Equipment and inputs	1 890	12.0	11 590	73.6	2 271	14.4	-	-	15 751	33.8	4 725	9 136	1 890
Total Investment Costs	3 462	7.7	29 651	66.2	6 978	15.6	4 707	10.5	44 797	96.0	12 608	28 727	3 462
II. Recurrent Costs													
A. Salaries and allowances	1 368	100.0	-	-	-	-	-	-	1 368	2.9	-	1 368	-
B. Operations and Maintenance	58	12.0	-	-	422	88.0	-	-	479	1.0	144	278	58
Total Recurrent Costs	1 426	77.2	-	-	422	22.8	-	-	1 847	4.0	144	1 646	58
Total PROJECT COSTS	4 888	10.5	29 651	63.6	7 400	15.9	4 707	10.1	46 645	100.0	12 752	30 373	3 520

b. Project financing/co-financing strategy and plan

97. IFAD will provide USD 37.0 million through the IFAD11 financing cycle. As stipulated in the new Debt Sustainability Framework, Eritrea is eligible to receive 80 percent as grant, and 20 percent as an optional loan on highly concessional terms.

98. The Government will provide counterpart funding in local currency to cover taxes and duties in the form of exemptions. Government contribution is estimated at USD 4.9 million, of which 3.5 million as taxes and duties, in addition to USD 1.4 million as salaries of NPCO and ZPCO staff. Beneficiaries will contribute in kind through provision of labour and construction materials for the construction of dams, water and land conservation, etc. Their contribution is preliminary valued at least at USD 4.7 million, or 20 percent of the total value of works and SWC measures under Subcomponent 1.1.

c. Disbursement

99. IADP will be allocated IFAD funding in the amount of US$37 million, to be disbursed over six years. Disbursement performance will depend on budget execution and timeliness of procurement processes and based on the experience of ongoing projects, disbursement risk is high. Main disbursement categories will be for Works, Goods and inputs, and Training. Operational procedures for these categories of expenditure, including criteria for providing goods, inputs and equipment to beneficiaries, are foreseen to be detailed in the final PIM. AWPB submissions for training activities will be supported with detailed training plans and will draw lessons from the effectiveness or otherwise of training initiatives under ongoing and past projects. The eligibility criteria, disbursement and control mechanisms for the minor amount (US$0.3 million) that has been budgeted for 'Grants and subsidies' will be detailed in the final PIM. Recurrent costs represent 4% of the overall project and are mainly financed in-kind by Government in the form of salaries. Support services provided to ensure the project reaches its development goal have been classified as investment costs given the long-term institutional capacity building objective.

d. Summary of benefits and economic analysis

100. Based on the objective, results framework and component structure, the Project is expected to generate the following benefits: a) increased yields; b) reduced land degradation and soil rehabilitation; c) increased resilience to climate change due to water management and irrigation schemes; d) ensured food security and rural poverty reduction. The target population was estimated to be around 60,000 households (HH). The project will also aim to create about 6 600 jobs, most of which will be for the youth and women.

101. **Financial analysis**. Seventeen financial models were developed, of which seven are for POs/SMEs; as well as ten for agriculture (irrigation and rain-fed) and livestock farming systems. The financial analysis shows that the targeted activities are sound. The Project net cash flows are based on the incremental approach, which results from comparing 'With Project Situation' and 'Without Project situations'[35]. The financial models have been calculated at 10 percent discount rate.

102. **Economic analysis**. The period of analysis is 20 years to account for the phasing and gestation of the proposed interventions. Economic benefits from the farm and enterprise models have been aggregated using average incremental net benefits and beneficiaries for each agricultural and agri-business and off-farm activities under the project interventions and assuming different adoption rates, extracted from the costing exercise. Economic benefits from enterprise models have been aggregated using an expected number of small enterprises to be supported by the project and for the agricultural models for the number of hectares. Benefits are phased-in progressively for all types of interventions.

103. Overall, agricultural models represent 35% of total project benefits. One agricultural model, rainfed sorghum intercropped with mung bean, represents 14% of the total benefits (reaching 10,000 HH, 17% of total project HH), while the remaining 9 irrigated agricultural models provide 21% of total benefits (reaching 7,500 HH, 13% of total HH). Agribusiness and SMEs represent 30% of project benefits and 6,500 household beneficiaries (11% of total project HH).

104. The economic analysis also shows that the project is economically viable. Taking into account the current assumptions the Economic Rate of Return (EIRR) for the overall project is equal to 19.04 percent and the Net Present Value (NPV) equals to US$ 59.9 million. The project is sensitive to changes in some of the model's variables (variations on benefits and costs, various lags in the realization of benefits and adoption rates). The risks factored in the sensitivity analysis include weather variations, potential protracted procurement delays and generally weak implementation capacity and prolonged impact of the recent COVID-19 pandemic.

e. Exit Strategy and Sustainability

105. ***Exit Strategy*** – The Project exit strategy is embedded in the strategic approach of working directly with administrative structures and community leaders at the Zoba, Sub-zoba and Kebabi levels. The Project will hand over major infrastructure and equipment to the community with a management plan or comprehensive operations and management training. In addition, the participatory design process ensures that the Project responds directly to community concerns, private sector priorities and national development policies and strategies. The communities/ producer organizations and private sector agencies will assume full responsibility for planning and implementation of watershed interventions and operation and maintenance of production infrastructure by the fourth year of the project.

106. ***Sustainability*** – Sustainability will be promoted through: a) adoption of improved agricultural practices including technologies at household levels facilitating graduation from MIHAP; b) enhanced storage and commercial sale of excess production to facilitate maintenance of investments; and c) longer term environmental rejuvenation and returns on improved soil and sustainable access to water. Different perspectives of IADP's sustainability are outlined below.

107. *Environmental Sustainability* – The watershed management approach will lead to longer term environmental rejuvenation and returns on improved soil and sustainable access to water. In addition, IADP will promote climate smart agricultural technologies or practices and these are expected to increase productivity, enhance resilience and reduce carbon emissions.

108. *Economic*–Productivity and production enhancement is IADP's development objective. The project will support access to storage, value addition facilities and markets through farmer organizations. This will ensure that farmers can dispose their surplus production, enhance their incomes and sustain their investments in agriculture, and embark on other income generating opportunities for sustainable rural transformation.

109. *Institutional Sustainability* - The institutional framework within which the Project will be implemented and the capacity developed will continue to exist after its completion to benefit the population and country. They include approaches to sustainable and inclusive land use planning (GIS, remote sensing and metrological tools); a cadre of social inclusion officers; equipment and facilities, tools and skills for planning financial management and procurement; vocational skill training and facilities for young entrepreneurs.

110. *Food and Nutrition Security* – Ensuring food and nutrition security for the target beneficiaries is IADP's goal. Eritrea's severe food and nutrition security challenges are largely due to frequent droughts and high dependence on rain-fed agriculture. Using watershed management as the entry point to IADP interventions is a recognition of the critical importance of water to sustainable rural livelihoods and food and nutrition security in the country. Thus, the planned linkage of watershed management and catchment development interventions with downstream groundwater recharging for irrigation and livestock production is a big step to ensuring food and nutrition security for the target beneficiaries on a sustainable basis. High nutrition and climate resilient crops and cropping systems will have been introduced which can be promoted throughout similar agro-ecological zones, with known requirements and results generated during the Project lifetime.

111. *Women empowerm*ent − It has been established that women empowerment is key to addressing household food and nutrition security. Using socio-cultural assessments to understand the social dynamics to women participation is crucial. This will ensure targeted support to women and mapping of their long-term inclusion pathway. IADP will also use MIHAP to reach out to poor women and other vulnerable groups with graduation approach to ensure sustainability of the MIHAP packages. The support will be delivered together with nutrition education and participatory approaches to enhance their inclusion and economic empowerment.

3. Risks

H. Project risks and mitigation measures

112. **Integrated Project Risk Management Matrix**: Overall the main risks for IADP relate to the institutional capacity gaps and the overall operating context. The capacity gaps translate into limitations and gaps in overall implementation, financial management and reporting, and procurement delays. The project may also be impacted by exogenous factors such as the overall macro-economic context, with limited private sector participation, which may be a disincentive for investments by smallholder producers. The overall climate factors present another major risk with frequent occurrence of droughts and scarcity of rainfall. IADP is therefore designed to respond to these risks and presents mitigation measures throughout the framework of the project. On implementation capacity gaps, Component 3 aims to ensure that institutional capacities are strengthened to be able to provide appropriate services to IFAD beneficiaries. The project will also avail technical assistance from international experts with dual objectives of building capacities and expediting implementation of the project.

113. Financial management risk is assessed as inherently high in design. Projects in Eritrea are not fully able to benefit from the efficiencies offered by modern communication tools (internet, multi-site financial reporting software, ICP), which causes a prevalence of manual processes, potentially unreliable financial reporting and poor efficiency. Oversight mechanisms exist and generally meet IFAD's minimum requirements, however the potential of internal audit in particular can be better exploited. Mitigation actions foreseen in design include access to improved communication infrastructure and systems, full automation of financial reporting and technical assistance to be provided in the first two project years. Residual risk will remain substantial until mitigation actions have been fully implemented and oversight mechanisms have been strengthened as required. Agreed FM risk mitigation measures will be reflected in legal covenants of the financing agreement signed between Government of Eritrea and IFAD for IADP. The risk assessment will be updated during the first supervision and at regular intervals during implementation.

I. Environment and Social category

114. Project interventions include construction of soil and water conservation structures, small-scale irrigation; drought tolerant crops, forage and livestock breeds, tree planting along the hill slopes, rangeland management, establishment of enclosures that reduce GHGs emissions and provide carbon sinks. The Project has been preliminary classified as **Environmental and Social Category B**, since the size of the irrigation schemes will not result in loss of environmental services provided by a natural ecosystem, nor may have significant negative implications that affect a broader area.

115. Environmental and Social safeguards requirements of GoSE as well as of IFAD will be respected by the Project. In the case of the GoSE, this is reflected in the Eritrean Environmental Protection, Management and Rehabilitation Framework (2017), the National Environmental Assessment Procedures and Guidelines (1999) and the Environmental Assessment Procedures & Guidelines for Agricultural Projects (2008).

116. An Environmental and Social Management Framework (ESMF), reflecting these requirements with respect to planned project activities, incorporating the key principles of a Free Prior and Informed Consent (FPIC) Implementation Plan, has been

developed to guide the Project during implementation. The ESMF, including the application of the FPIC principles, are summarized in both the SECAP Annex and the PIM. As per IFAD norms FPIC for IADP financed investments is sought during the implementation phase when:

- The project, or some of its component, is likely to affect land access and use rights of local communities, and/or
- The project area is home to ethnic minorities (note the Government of Eritrea does not recognize the concept of 'indigenous peoples);
- Communities are not identifiable at project design stage;
- Specific investments in specific communities are not predefined during project design phase, but open to communities' demand during the project implementation period.

117. The ESMF identifies project components with potential direct and significant impact on local communities and which require FPIC of national or subnational representative institutions of local communities. As investments in specific communities and territories were not identifiable during the project design stage, FPIC will further be solicited during the implementation phase.

118. The key finding of the ESMF is that, while there are both environmental and social risks associated with the activities that will be financed via the IADP, the expected benefits of the project significantly outweigh the risks. Key recommendations of the ESMF include: the need for a substantial capacity building program on safeguards implementation of the PMU, Ministry of Agriculture and (as required) Ministry of Environment and other partners at both central and Zoba levels, including clear related roles and responsibilities institutionally and of project staff. In addition, a community driven approach is recommended to identify risks and mitigation measure and communicate these up. The national legislation is sound, but monitoring will be required to ensure that it is applied.

119. The cost for the capacity building actions in particular are found in Sections 10.2 through 10.8 of the ESMF, including for monitoring its implementation.

120. Reflecting the National Environmental Management Plan of Eritrea (1995) and the proof-of-concept analysis undertaken during the design of NAP in 2010, the Project will also enhance operational land use decision making capacity together with environmental planning and monitoring both as a participatory land and water use planning at community level, as well as in using GIS. An assessment of needs and options will be undertaken during the pre-implementation, with a detailed assessment and action plan for supporting institutional capacity in the use of GIS and satellite data systems and analysis.

J. Climate Risk classification

121. Based on the analysis documented in the SECAP, the climate risk of the Project is classified as "high". The climate risks will be mitigated by increasing the ability of the affected communities to adapt to environmental and economic variability, and long-term changes. As per IFAD requirements, a detailed desk-based Climate Risk Analysis has been undertaken during the pre-implementation, including details of principal risk mitigating actions.

122. Eritrea is an arid to semi-arid agricultural and agro-pastoralist country. Agricultural production, which comprises the majority of the national economy, is constrained mostly by the availability of water resources. From 1930 - 2019, the annual average temperature increased appreciably, together with a decrease in the annual average rainfall in Eritrea over the same period; together compounding water availability constraints for both agriculture and pastoralism as well as for domestic water. Projections of impacts on yield across a range of crops using IFADs CARD tool are presented in the SECAP annex; several staples are expected to be heavily impacted.

123. However the project design itself reflects a recognition of the high inherent climate risk due to the project locations as well as the climate vulnerability of the livelihoods of the target beneficiaries. It addresses these through water management related activities in particular but also livelihood diversification and improved income opportunities; for example, promotion of smallstock, especially for women.

4. Implementation

K. Organizational Framework

a. Project management and coordination

Project Implementation Arrangement:

124. IADP will be implemented within the Government's decentralised institutional framework, comprising the MOA technical departments at national level, and their decentralized structures, comprising of the branches and units of Zoba and Sub-zoba level, as well as at Kebabi level. The MoA will be the lead executing agency for the Project, and will delegate the role of the lead implementing agency to PSD. It will liaise with the other participating ministries/institutions and other relevant stakeholders to steer effective Project implementation.

125. AED of MoA will be a core implementing entity as it has a mandate for implementation of national resources management, catchment treatment, irrigation development, horticulture and livestock development; agricultural extension and communication; value addition, agro-input supply. AED will provide technical backstopping to the Zoba administrations, and ensure that Project implementation is aligned with GoSE policy and strategy. It will collaborate with the RSD and MoLWE in ensuring that agricultural

production activities are carried out within the environmental guidelines and policies. NSU, under AED, in collaboration with Zoba seed units, will technically backstop private-sector seed growers for multiplication, processing and marketing of certified/improved seeds, as well as be responsible for development of the national annual seed plan and development of specifications for procurement of these seeds. The Marketing and Credit Unit will be responsible for activities related to input distribution.

126. NARI will assume responsibility for adaptive research and strengthen collaboration with the AED targeted on the following subjects: TLST, IPM, bio-pesticides, organic fertilizers, rangeland management, improvement of indigenous poultry, as well as food safety and nutrition. Seed variety screening and multiplication of foundation and breeder seed, will be supported by the development and implementation of protocols and the decentralization of the seed distribution system. Implementation will happen at national level as well as through the Research Sub-Stations, as per the agro-ecological zones.

127. Other key stakeholders will include: a) RSD – will support inspection services of food, feed seed, pesticides, drugs and vaccine and some environmental assignments, through their Zoba Inspection Departments as well as providing quarantine services and seed certification schemes; b) NAPHL – will work on food quality and safety, and start-up the capacity to produce vaccines, in particular for small ruminants and poultry; c) AFD – will foresee the financial management and procurement functions of the Project; and d) Agricultural Colleges – will be a potential partner for capacity-building activities (Subcomponent 3.1).

Project Coordination Framework

128. **A National Project Coordination Office (NPCO**) will be established under MoA's Planning and Statistics Division (PSD); thus, the NPCO will be under the direct supervision of the PSD Director. The NPCO will ensure day-to-day management of the Project; it will be headed by a full-time Project Coordinator (PC), fully dedicated to IADP. The NPCO structure, as it is under NAP, will remain largely unchanged. However, the PC and all IADP-NPCO staff will largely be expected to be fulltime and fully dedicated to the Project. The IADP-NPCO will be reinforced to: a) strengthen technical coordination across project implementers; b) improve planning, fiduciary functions, and M&E, and c) ensure compliance with environmental/safeguards and adherence to targeting and social inclusion requirements. The IADP-NPCO will be organised into: a) three technical teams headed by component heads supported by sub-component technical expert[36]; b) planning and monitoring team, headed by a Senior M&E Officer, supported by planning, M&E, KM, Social Inclusion and Environmental Monitoring Officers; and c) an administration team consisting of a Senior Procurement Officer and Financial Controller supported by 3 procurement assistants, an accountant and an account assistant.

129. **Zoba Project Coordination Offices (ZPCOs)** will be established in each of the six Zobas, to coordinate implementation of the Project. They will comprise technical experts seconded from the Zoba branches. The ZPCO structure will mirror that of the NCPO at national level. The Zoba Administration will carry-out coordination and implementation responsibilities at Zoba level. At Zoba level, the Directorate General for Agriculture, Land and Environment will be responsible for implementation of the bulk of project activities, through the Local Government structure. In particular, the branches of Soil, Water and Irrigation; Animal Resources; and Crop Development will implement project activities through the various units and sub-zoba structures. In addition, the Agricultural Infrastructure branch of the Directorate General for Infrastructure Development will have an implementation role in relation to dam infrastructure development. Within each Zoba, the development process will largely be driven by the local communities through the Sub-zobas and Kebabi administrations following the GoSE decentralised participatory planning system, whereby Village Development Plans are consolidated into Kebabi plans, which are then consolidated into Sub-zoba plans, and finally then into Zoba plans. The Sub-zoba Agricultural Divisions will provide direct supervision of the Kebabi-based technical teams as well as prepare progress reports following Government guidelines.

130. **Planning and Implementation Committee (PIC)** in each Kebabi headed by the Kebabi Administrator will coordinate planning and implementation of project activities. PIC will receive technical support from the Sub-zoba line agencies.

131. **The National Project Steering Committee (NPSC)** of NAP will be re-established under IADP to ensure cross-sectoral coordination as well as strategic oversight of project implementation in accordance with the set objectives, across the six (6) Zobas. Its functions will include: a) oversight of Project implementation; b) ensuring that the Project is implemented within the national policy and strategy framework; c) approval of the AWPB; and d) providing strategic guidance and resolving critical implementation bottlenecks. The NPSC will be chaired by the Minister of Agriculture and include MoF, MoLWE and the six Zoba governors or their representatives, the Director of PSD of MoA will be the secretary.

132. **Zoba Project Coordination Committees (ZPCCs)** will provide oversight of operations at Zoba level, review and endorse the Zoba AWPB implementation progress and financial reports before forwarding to PSD and NPCO for consolidation. The ZPCOCs will meet on a quarterly basis and will be chaired by the Zoba Governors and comprising, inter alia, the Directors of Zoba Administration Departments and Heads of Agriculture Divisions. Their functions are similar to that of the NPSC at national level.

b. Financial Management, Procurement and Governance

133. The overall responsibility for financial management (FM) will lie within the Administration and Finance Department of the MoA, while the Finance units of the ZPCOs will be responsible for the accounting and financial management at Zoba level. A dedicated finance unit within the Administration and Finance Department will have the required number of adequately qualified and experienced FM staff to meet the project's functional needs at national and district levels. Overall coordination for FM at national level will be provided by a full-time finance manager, supported by two full-time accountants. Technical assistance will support the finance team for the first two years of implementation, to ensure that an appropriate control framework is adopted, and that capacity is built up to the necessary level through training at central and decentralised cost centers. IFAD funds will flow into a designated account opened with Bank of Eritrea, and operational accounts will be opened at each implementing entity level to receive advances managed by the NPCO, following payment approval and justification mechanisms which are detailed in the PIM. Contracts with service providers and MoUs with implementing entities will require IFAD's no objection and will be subject to audit. Close management of service provider contracts and monthly monitoring of zoba financial reporting by the NPCO will help

ensure timely disbursement flows. The project will submit quarterly financial reporting to the executing agency and to IFAD, covering all funding sources. In-kind counterpart and beneficiary contributions will be calculated in the project's financial reporting system following a methodology laid out in the project implementation manual (PIM), which will be re-confirmed at start-up. Internal and external audit mechanisms will be further strengthened with respect to past projects, with MoA's internal audit section covering IADP as part of it's annual work-plan.

134. The use of country systems for IADP FM will be limited, since no integrated financial management system (IFMIS) is available at Government level through which project expenditure can be reported. However, the project will be implemented by Government staff at national and decentralised levels, and national oversight mechanisms for internal and external audit will be used.

135. ***Procurement*** – A procurement risk matrix was completed and identifies weaknesses in the current legal and regulatory framework and recommends mitigating actions to address those weaknesses. Contract awards were found to have been made beyond bid validity periods, incomplete contracts were reviewed and Standard Bidding Document Templates were found to be highly cumbersome for NCB procedures (the World Bank ICB template is being used for NCB procurement activities). The full adoption of IFAD's Procurement Handbook and Standard Bidding Documents is therefore recommended in lieu of the use of national systems. In addition, limited procurement capacity, inefficient processes and inadequate procurement planning mechanisms were identified.

136. IADP structure will address and mitigate the identified limitations. The NPCO procurement team will be supported variously to ensure compliance with IFAD procurement processes and procedures and best international practices in procurement. The capacity building interventions will be guided by a capacity needs assessment.

137. Internal review mechanisms will be revisited, such as ensuring appropriate internal clearances and provision of internal GoSE clearances; these need to be provided in a systematic and consistent manner (within MoA, Internal Audit, Red Sea Corporation, etc.). Once these are efficiently and effectively done, the final package would be submitted to IFAD for review and provision of No Objection and the turnaround time would be greatly reduced; this would contribute to improved undertaking of the procurement function.

138. ***Governance*** – As stated under Section IV. a., NPSC and ZPCCs will be established at the national and Zoba levels, respectively. These organs will provide an oversight role to ensure effective IADP implementation. They will provide strategic guidance towards the achievement of Project objectives and contribute to the higher-level sector policy and strategic goals.

139. Whilst the enforcement of good governance would be the primary responsibility of the Government Eritrea, all IADP's stakeholders will be made aware of *IFAD Revised Policy on Preventing Fraud and Corruption in its Activities and Operations*that IFAD applies a zero tolerance policy towards fraudulent, corrupt, collusive or coercive actions in Programmes/Projects financed through its loans and grants. Therefore, IADP will promote good governance through the involvement of communities and beneficiaries in: a) the preparation of the annual work plans and budgets; b) the transparent and fair procurement process; and c) the monitoring and evaluation of Project activities. IADP will also apply IFADs *Framework for Operational Feedback from Stakeholders: Enhancing Transparency, Governance and Accountability*.

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

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

140. The foundation for annual planning, budgeting, and M&E will be the Project's Logical Framework. However, given its limitation with regard to the number of indicators specified, data will be collected using a broader operational framework for M&E to ensure that sufficiently detailed information is available for management decision making, and to facilitate the preparation of reports that meet the needs of government, IFAD and other key stakeholders in the sector.

141. ***Planning*** – The M&E team, in close collaboration with PSD, will have the responsibility for the coordination of programming and preparation of the Project's consolidated AWPB, based on the respective AWPBs from the Zobas, MoA Departments, MoLWE, and other partners. The AWPBs will be key instruments for implementation and operational control. AWPBs will be prepared for all programme participants, starting from the primary stakeholders at the community level.

142. To enhance the efficiency of planning and preparation of the Zoba AWPB, the NPCO will provide the ZPCOs with clear guidance regarding multi-annual output targets and budgetary planning. The Project will adopt a multi-year planning, in particular for watershed & irrigation related interventions, and secure the required budget. It will reflect each Zoba and each implementing entity and their contribution towards the PDO. This will be developed as a start-up activity, covering the period up to MTR. It will serve as an internalization process for the NPCO and ZPCOs of the Project Design Report (PDR) and supporting documents, and forming the basis for the annual work plans to be developed subsequently.

143. The AWPB will be critical for ensuring alignment between components and across Zobas for reaching project objectives. In particular, it will support strategic coordination between MoA units. The AWPB shall be consolidated and sent to IFAD for review and provision of No-Objection. The National Coordinator will coordinate the different implementing agencies and Zobas and ensuring that the AWPB is realistic, reasonable and results-oriented. The Financial Controller and Senior Procurement Officer will be part of the entire process. The Procurement Plan and Training plan will be prepared together with the AWPB and sent to IFAD for No-Objection 60 days prior to the beginning of the new fiscal year. The Project will have the possibility of revising the AWPB at any time of the year and any necessary adjustments would be subjected to the required approvals by both government and IFAD. Once the AWPB has been approved, the various implementing departments will be expected to carry out Short-term Activity Planning during which detailed activity plans to facilitate close supervision and coordination of field activities and progress review will be prepared. This would be done during regular planning meetings, undertaken on a monthly basis, where it is decided exactly what activities need to take place during the coming month, when, where and by whom. Individual work planning

shall be considered as part of this process to ensure actual individual time input to the Programme implementation.

144. To ensure smooth planning and implementation of the AWPB, the budget estimates shall be done based on market research, particularly for procurement related activities. The Procurement team shall also ensure a realistic procurement plan and prepare the procurement package (specifications, ToRs, etc.) prior to the start of the new fiscal year.

145. ***Monitoring and Evaluation*** – PSD will coordinate monitoring and evaluation processes, reporting, and knowledge management. PSD will be responsible for the preparation of consolidated 6-monthly and annual progress reports. A baseline study will be undertaken during the first year of Project implementation to provide a benchmark for assessment of outcomes and impact of the Project; the study will incorporate appropriate questionnaire to collect baseline data for tracking progress on mainstreaming themes (i.e. MDD-W) following IFAD COI standard guidelines and Appendixes. It will also conduct impact evaluation and knowledge management activities, production of annual progress reports, conducting the annual outcome surveys and implementation review workshops, carrying out special/thematic studies, Mid-term review (MTR) and Project Completion Report (PCR).

146. The Project will adopt a results-based management and check systematically the contribution of each planned activity to outcome achievement. IFAD will undertake periodic monitoring, evaluation and supervision Missions to assess the status of Project implementation and evaluate the Project's direction with respect to its objectives, outputs and outcomes. IADP's M&E strategy will be to establish an iterative process for identifying issues and problems to ensure that the Project focus is maintained and expected outcomes are achieved. This will rely on data from periodic monitoring within the context of the operational M&E framework, and on specific thematic surveys, such as adoption, household and outcome surveys. The team will document achievements through reflection meetings with NPCO team, implementing agencies and beneficiaries. The reflection meetings shall be organized on a quarterly basis for NPCO, ZPCOs and implementing agencies. PSD will also explore innovative ways to collect qualitative and quantitative data, including GIS, focus group discussions, structured interviews and longitudinal panels. This will guide the consolidation of input and output data provided by implementers and reporting on efficiency of implementation.

147. Quarterly, bi-annual and annual reports will be produced by the respective implementing agencies with formal reporting responsibilities to the NPCO; the NPCO will consolidate the different reports to produce a Project-wide report for submission to GoSE and IFAD. Reports will provide information such as: a) overview of intervention activities undertaken in the last quarter and cumulatively over the fiscal year; and b) progress and outputs in terms of the agreed M&E indicators, provide lessons learnt, and knowledge gaps identified. The reports will also seek to identify any constraints encountered so as to seek guidance (where needed) from Project management for addressing the constraints. The project will strengthen MOA's M&E capacity (tools and methods) for data collection and analysis to enhance reporting of project results.

148. The above-indicated monitoring activities will be complemented by frequent monitoring meetings between the NPCO and the Minister of Agriculture, as well as field visits by members of the NPSC. IFAD will also ensue that an M&E specialist is included in at least 1 mission per year. The NPCO will ensure adequate beneficiary monitoring at the Zoba level to address potential overlap with FREMP and other development projects in target areas.

149. ***Knowledge Management and Learning (KM&L)*** – KM&L will serve as a foundation for replication of successes, provide the analytical basis to resolve challenges, and help to adapt activities to changing social and economic circumstances in the target areas. A KM action plan will be prepared to: a) identify knowledge gaps and prioritization of knowledge products to be developed; b) systematically document methods to ease the up-scaling of best practices in Eritrea or repackaging of innovative approaches developed elsewhere; c) disseminate knowledge using various communication tools (MoA newsletter, brochures, websites, radio, FFS). Regular reflection workshops, drawing on M&E data to improve performance, will be held and information sharing mechanisms (internal and external) developed. The South-South cooperation and exchange visits will also be integrated in the KM&L strategy (see Subcomponent 3.3).

150. ***Communication*** – Communication remains a new area for the country in general where results and success stories are rarely published in the media. The Project will develop a strategic communications plan for targeted groups, general public and donors' oriented communication products. To ensure quality communication material, trainings on media-related activities and equipment will be purchased. The strategic communication together with KM&L will be used to increase the familiarity among target audiences with IFAD projects by raising awareness about the results achieved through IFAD's investment, in addition to document best practices and lessons learned. Improved communication will be beneficial to support social inclusion awareness interventions planned under the project.

b. Innovation and scaling up

151. The six priority areas for innovation will include: a) advanced irrigation technologies; b) cooperative development and market linkages; c) solar energy; d) nutrition improvement; and e) *piloting* linkage of qualifying beneficiaries to appropriate financial services. The Project will scale-up good practices, selected through knowledge management at national and regional level. The priority areas for scaling-up will be i) good practices of advanced water-use efficiency in irrigation; ii) sustainable land and water management, conservation farming, and soil fertility; and iii) targeted MIHAP approach to mainstream priorities (nutrition, gender and youth).

M. Implementation plans

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

152. The IADP design was finalised under IFAD's guidelines for design under COVID-19 and the package has been prepared based on a pre-design mission undertaken in October 2019 and follow-up virtual discussions with GoSE in May-June, 2020. The NPCO

will make use of IFAD's restructuring policy is there is any need for adjustments during implementation.

153. To the extent possible, the Project will build on the achievements of NAP, including the implementation structures; this will contribute to a seamless transition by bringing into IADP the lessons, experiences and achievements of NAP. Some of the steps taken in favour of IADP implementation readiness at start-up include: a) re-appointment of staff, after performance evaluation, in accordance with updated TORs; b) purchase of a financial management system and other related software; c) a draft AWPB, Procurement Plan and Project Implementation Manual have been prepared as part of the design; d) use the NAP resources to prepare the requisite ESMFs, feasibility studies, and the undertaking of capacity needs assessment − the need to take an in-depth institutional capacity needs assessment prior to project inception is critically important given the acknowledged weak institutional capacity of the country in general and the selected IADP implementing agencies, in particular; e) finalisation of agreements with intra-Government and other implementing partners; and f) recruitment of the key TA to be ready at project start-up. These interventions are expected to minimise the start-up delays/long gestation periods that are known hinder effective Project inception. In order to facilitate a timely and appropriate implementation of nutrition sensitive actions, a nutrition action plan will be prepared at start up with the support of a dedicated consultant who will work with IADP project team and ensure ownership by the beneficiaries.

154. *Supervision* – IADP will be jointly supervised by IFAD and GoSE. Supervision will be seen as a continuous process including joint missions with the Government, as well as continuous desk review to ensure that implementation is on track. Missions will be used as an opportunity to jointly assess achievements and lessons learned with the overall objective of ensuring effective project implementation and increase the likelihood of achieving the target objective. The composition of supervision and implementation support missions will largely be determined by the prevailing circumstances. To the extent possible, the composition of the supervision and implementation support team will be maintained to ensure continuity. Implementation support will be provided through technical assistance especially on M&E and Procurement.

155. *Mid-Term Review (MTR)* – An MTR will be undertaken midway through project implementation and will evaluate whether the project is on course to achieve the objectives. The MTR will be a key reflection moment to assess implementation performance and recommend adjustments to the project, as may be required. The recommendations will take into consideration the likelihood of achieving the project's targets during the remaining implementation period and may modify these targets, if considered necessary. The MTR will also be critical considering that this design has been finalised under COVID-19 guidelines and there may be need to revisit the assumptions of the project since a validation design mission could not take place. The MTR will also consider a potential extension to the project if required.

156. *Project Completion Plans* – At the end of the IADP implementation, GoSE will be required to undertake the Project Completion Review (PCR) exercise, in close coordination with IFAD, in order to report on the results achieved through project interventions. As part of completion activities, a Beneficiary Impact Assessment will be undertaken and findings used to inform the Project Completion Report. The main purposes of the completion review process are to promote accountability, reflect on performance and elicit lessons learned to inform future programme/project design and to define an appropriate post-project strategy. The learning dimension of the completion process will be used by both IFAD and GoSE as the foundation for improvements in future programme/project design and implementation. The completion review process will also be critical for identifying opportunities for scaling-up best practices.

Footnotes

[1] Gash Barka, Debub, Anseba & Maekal
[2] Northern Red Sea and Southern Red Sea
[3]Crops and animal products that ensure availability of diversified food for healthy and sustainable diets, drought resistants' crop varieties and forages, high income generating agricultural products: poultry, dairy, oilseed crops, tree forages, leguminous crops for food and forage, beekeeping, horticulture and cereals.
[4] SO 3. Build institutional, community and individual capacities to enhance food and nutrition security and sustainable livelihoods.
[5] Government of the State of Eritrea (GoSE)
[6] World Bank
[7] EIU. Country Report. March 2020
[8] UN COMTRADE, 2017
[9] World Bank. 2019
[10] EIU. Country Report. March 2020
[11] Some non-government estimates put the country's population at more than 6 million.
[12] UNDP. 2019 Human Development Report
[13] EPHS2010
[14] FAO. Country Programming Framework for the State of Eritrea. 2017 to 2021.
[15] EHPS2010
[16] Millennium Development Goals Report, 2015
[17] NRC 2019a.
[18] African Development Fund 2015.
[19] World Health Organization (WHO)
[20] EPHS2010
[21] Global Nutrition Report. Eritrea Country Profile. 2019
[22] See note 22
[23] International Food Policy Research Institute (IFPRI). 2014 Global Hunger Index
[24] EPHS2010
[25] Farmer-Participatory Integrated Watershed Management: Adarsha Watershed, Kothapally India An Innovative and Up-scalable

Approach (2003)
[26] Gash Barka, Debub, Anseba & Maekal
[27] Northern Red Sea and Southern Red Sea
[28] Headworks refers to any structure at the head or diversion point of a waterway, used to divert water into a canal, micro dam or similar.
[29] For example the Youth Employment Skills Development Project in the Anseba and Gash-Barka Zobas
[30] The studies and templates of detailed design will be developed at Project start up, with technical assistance.
[31] Crops and animal products that ensure availability of diversified food for healthy and sustainable diets, drought resistants' crop varieties and forages, high income generating agricultural products: poultry, dairy, oilseed crops, tree forages, leguminous crops for food and forage, beekeeping, horticulture and cereals.
[32] Institutional Support to AED under Subcomponent 3.1.
[33] …
[34] Using differentiated MIHAP models to be introduced through IADP
[35] IFAD, 2015, Economic and Financial analysis of rural investment projects, basic concepts and rationale
[36] This team will be supported by subject matter specialists from respective MoA technical departments on a part time basis, as needs arises.

Investing in rural people

Eritrea

Integrated Agriculture Development Project

Project Design Report

Annex 1: Logframe

Mission Dates:	8 to 30 June 2020
Document Date:	05/10/2020
Project No.	2000002081
Report No.	5444-ER

East and Southern Africa Division
Programme Management Department

Integrated Agriculture Development Project

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				Annual consolidated project report - beneficiary database	Baseline Midterm End-line	PSD, NPCO	The outreach of the delivery of services, inputs, tools and equipment is increased and diversified
	Household members	0	125000	300000				
	1.a Corresponding number of households reached				Annual consolidated project report - beneficiary database	Baseline Midterm End-line	PSD, NPCO	
	Households	0	25000	60000				
	1 Persons receiving services promoted or supported by the project				Annual consolidated project report - beneficiary database	Baseline Midterm End-line	PSD, NPCO	
	Females	0	50000	120000				
	Males	0	75000	180000				
	Young	0	50000	120000				
	Not Young	0	75000	180000				
	Total number of persons receiving services	0	25000	60000				

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Project Goal To contribute to poverty reduction, and food and nutrition security of rural households in the targeted areas	Food deficit at the national level reduced				MOA Annual report	Baseline, Mid-term, Endline	PSD, NPCO	The implementation of the peace deal provides a conducive environment for business and agribusiness development. COVID-19 situation recedes and project operations can proceed normally or guidelines for implementation under COVID-19 conditions implemented.
	Percentage	38	30	22				
	Households reporting an increase in household asset index				Annual outcome surveys	Baseline, Mid-term, Endline	PSD, NPCO	
	Percentage	0	15	30				
	Male							
	Female							
	Young							
	Not Young							
	Sector: Crops							
	Sector: livestock							
	Sector: fisheries							
	Sector: livestock							
Development Objective Enhancement of smallholder agricultural production and productivity and improvement of rural livelihoods, in a sustainable and climate-resilient way	Increase in national annual agricultural output in the project target areas				Outcome Survey	Baseline Midterm Endline	PSD, NPCO	The implementation of the peace deal provides a conducive environment for business and agribusiness development. Climatic conditions are conducive for production.
	Percentage	0	15	40				
	2.2.1 New jobs created				Outcome Survey	Baseline Midterm Endline	PSD, NPCO	
	Job owner - men	0	1500	3900				
	New jobs	0	2500	6500				
	Job owner - women	0	1000	2600				
	Job owner - young	0	1000	2600				
	Job owner - not young	0	1500	3900				

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outcome Outcome 1 Strengthened environmental sustainability and climate resilience of poor rural people's economic activities	1.2.3 Households reporting reduced water shortage vis-à-vis production needs				Survey	Annual outcome surveys Baseline Midterm End-line	NPCO	Timely completion of procurement processes and construction of water-related infrastructure. Communities adopting climate-resilient soil and water management practices. Investments informed by watershed management plans
	Households	0	30	70				
	Males							
	Females							
	Young							
	Not Young							
	3.2.2 Households reporting adoption of environmentally sustainable and climate-resilient technologies and practices				Survey	Annual outcome surveys Baseline Midterm End-line	NPCO	
	Households	5	15	40				
	Males							
	Females							
	Young							
	Not Young							
Output Output 1.1 climate resilient and sustainable management	3.1.4 Land brought under climate-resilient practices				Project M&E reports	Annual outcome surveys Baseline Midterm End-line	NPCO ZPCO, Project implementing agencies	Gov. will assign staff & O&M recurrent budget.
	Hectares of land	0	4000	10000				
Output Output 1.2: Irrigation production is promoted	1.1.2 Farmland under water-related infrastructure constructed/rehabilitated				Project M&E reports	Annual outcome surveys Baseline Midterm End-line	NPCO, ZPCO, Project implementing agencies	Gov. will assign staff & O&M recurrent budget.
	Hectares of land	0	645	1915				

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outcome Outcome 2: Increased diversification of livelihoods and resilience of communities	1.2.8 Women reporting minimum dietary diversity (MDDW)				Survey	Annual outcome surveys Baseline Midterm End-line	NPCO	Inputs and technologies are effectively disseminated to farmers in a timely manner. Nutrition education is effectively delivered to households. Beneficiaries successfully organized into groups and producers organizations providing services to their membership.
	Women (%)	0	30	80				
	Women (number)							
	Households (%)							
	Households (number)							
	Household members							
	1.2.2 Households reporting adoption of new/improved inputs, technologies or practices				Survey	Annual outcome surveys Baseline Midterm End-line	NPCO	
	Households	0	20	40				
	Total number of household members							
	Males							
	Females							
	Young							
	Not Young							
	Households							
	Persons engaging in new livelihood opportunities derived from the project				Survey	Annual outcome surveys Baseline Midterm End-line	NPCO	
	Percentage	0	30	80				
	Males							
	Females							
	Young							
	Not Young							

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
	Sector: crops							
	Sector: livestock							
	Sector: Fisheries							
	Sector: Forestry							
Output Output 2.1: Improved access to advisory services, inputs and livelihood support	1.1.4 Persons trained in production practices and/or technologies				Project M&E reports	Annually Baseline Midterm End-line	NPCO	Agricultural and nutrition extension is effectively delivered to households. Timely completion of procurement processes
	Total number of persons trained by the project	0	10000	22000				
	Men trained in crop							
	Women trained in crop							
	Young people trained in crop							
	Not young people trained in crop							
	Men trained in livestock							
	Women trained in livestock							
	Young people trained in livestock							
	Not young people trained in livestock							
	Total persons trained in crop							
	Total persons trained in livestock							

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Output Output 2.2: knowledge on nutrition enhanced	Persons trained in off-farm livelihood opportunities				Project M&E reports	Annually Baseline Midterm End-line	NPCO	Agricultural and nutrition extension is effectively delivered to households. Timely completion of procurement processes
	Number		3000	6000				
	Males							
	Females							
	Young							
	Not Young							
	Sector: crops							
	Sector: livestock							
	Sector: fisheries							
	Sector: forestry							
	1.1.8 Households provided with targeted support to improve their nutrition				Project M&E reports	Annually Baseline Midterm End-line	NPCO	
	Total persons participating	0	2000	5000				
	Males							
	Females							
	Young							
	Not Young							
Output Output 2.3: Strengthened POs skills for collective services and market linkages	2.1.3 Rural producers' organizations supported				Project M&E reports	Annually Baseline Midterm End-line	NPCO	Agricultural and nutrition extension is effectively delivered to households. Timely completion of procurement processes
	Rural POs supported	0	50	120				
	Males							
	Females							
	Young							

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
	Not Young							
Outcome Outcome 3: Institutional capacity and performance to sustainably deliver services to the targeted beneficiaries enhanced	Cumulative project disbursement targets met				Assessment	Baseline midterm endline Annual outcome surveys	NPCO, ZPCO, Project implementing agencies	Realistic planning processes by the Government and timely execution of procurement activities. Grievance redress and consultation platform set-up. Feedback culture adopted by the beneficiaries and communities
	Percentage	0	60	100				
	Government staff reporting enhanced skills from the project interventions				Assessment	Baseline midterm endline Annual outcome surveys	NPCO, ZPCO, Project implementing agencies	
	Percentage	0	30	70				
	Males							
	Females							
	Young							
	Not Young							
	SF.2.2 Households reporting they can influence decision-making of local authorities and project-supported service providers				Assessment	Baseline Midterm End-line Annual outcome surveys	NPCO, ZPCO, Project implementing agencies	
	Non-women-headed households							
	Women-headed households							
	Households (%)	0	30	60				
	Households (number)							
	SF.2.1 Households satisfied with project-supported services				Assessment	Baseline Midterm End-line Annual outcome surveys	NPCO, ZPCO, Project implementing agencies	
	Non-women-headed households							
	Women-headed households							

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
	Households (%)	0	30	60				
	Households (number)							
Output Output 3.1: Staff trained on project management	Capacity needs assessment undertaken and implementation plans developed				Annual project reports	Annually Baseline Midterm End-line	NPCO, ZPCO, Project implementing agencies	Government leadership. Consultation platform set-up
	Number	0	2	4				
	NPCO and ZPCO staff supported with training and capacity development initiatives				Annual project reports	Annually Baseline Midterm End-line	NPCO, ZPCO, Project implementing agencies	
	Percentage	0	70	90				
	Males							
	Females							
	Young							
	Not Young							
Output Output 3.2: Knowledge management, learning and policy engagement promoted	Policy 1 Policy-relevant knowledge products completed				Annual project reports	Annually Baseline Midterm End-line	NPCO, ZPCO, Project implementing agencies	Government leadership. Consultation platform set-up
	Number							

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Project Design Report

Annex 2: Theory of change

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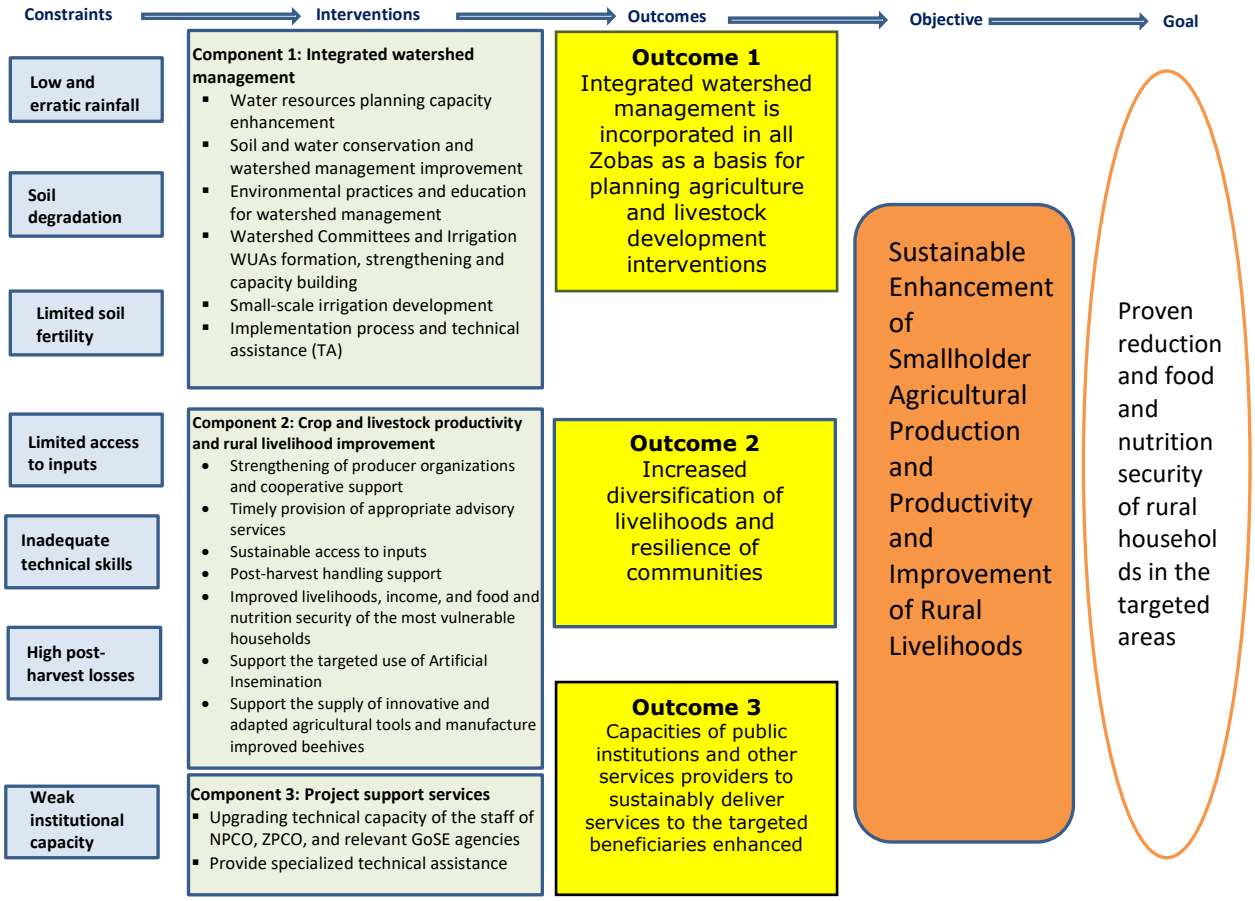
Annex 2: Theory of Change



Annex 2.1: Theory of Change for Nutrition Sensitive Interventions supported by IADP

Problem assumption	Frequent droughts, high dependence on rain-fed agriculture and structural food imports, together with poor child feeding practices, poor hygiene and caring practices are threatening the food and nutrition situation in Eritrea, which experiences malnutrition rates that are significantly greater than the developing country average. Nutrition is included in health sector policies, strategies and plans1, but there are no other national nutrition policy documents and a significant gap in reliable data to assess Eritrea progress on nutrition.			
Aim	To improve the food and nutrition security of project's beneficiary households by increasing availability and accessibility to diversified and nutritious foods			
Outreach	Direct beneficiaries of nutrition sensitive interventions: 5,000 HHs benefiting from MIHAP package; 36 000 HHs benefiting from enhanced advisory and livestock services, improved access to production assets and seeds, and nutrition-sensitive agriculture practices; etc...			
Outcomes	Increased availability of diversified and nutritious food	Increased knowledge on nutrition and dietary diversification	Enhanced livelihood and agriculture assets of HHs	Improved caring practices and women's empowerment
Activities	- Establish home gardens and homestead food production; - Intercropping with beans and pulses, vegetables; - Promote home-food storage, food processing and conservation practices; - Improve households' income (to purchase nutritious food); - Reduce food waste and loss through improved farmers' capacities	- Promote nutrition education and dietary diversification among farmers - Strengthened POs skills on nutrition for collective services and market linkages - Integrate basics on nutrition, enriched and diversified diets, food safety practices sanitation and hygiene practices (WASH) in the provision of capacity building for targeted groups (- Awareness campaigns	- Increase income - Training in the IADP promoted climate smart production practices (crops and livestock) and/or technologies - Post-harvest handling support	- Introduce labour- and time-saving technologies - Increase women's access to and control over assets – inputs, technologies and finance – and new income opportunities for women
	Contribute to fill the data gap on progress on nutrition			
M&E	Outcome Indicator (C.I.): % of women reporting improved quality of their diets-1.2.8) (Disaggregate by youth) Output Indicator (C.I.): HHs provided with targeted support to improve their nutrition"			

Annex 4: Economic and Financial Analysis

A. Introduction

There is a general absence of reliance data in the country, mostly due to limited capacities. In this regard, M&E has been a significant challenge in the implementation of the IFAD-supported programmes in the country including National Agricultural Programme (NAP). This EFA has therefore built on the available data and corroborated by secondary sources. It is also noted that the IADP design has been finalised remotely due to the COVID 19 pandemic, and is predicated on a pre-design mission that took place in October 2019. Plans to undertake a validation mission in 2020 did not materialise. It is therefore acknowledged that a few of the EFA assumptions could be revisited during the Mid-Term Review (MTR), if deemed necessary.

1- This annex presents the draft Economic and Financial Analysis (EFA) of the Integrated Agriculture Development Programme (IADP). The methodological approach of the EFA follows that of Gittinger (1982)[1], Belli et al. (2001)[2] and is in line with recent guidelines published by IFAD on economic and financial analysis[3]. The financial analysis was performed from the perspective of beneficiaries. The economic analysis also differed from the financial analysis due to a shadow price that was assumed for the main project inputs and outputs.

2- Seventeen financial models were developed, of which seven are for agribusiness and Small and Medium Enterprises (SMEs); as well as ten for agricultural activities. The financial analysis shows that the targeted activities are sound. The economic analysis also shows that the project is economically viable. Taking into account the current assumptions the Economic Rate of Return (EIRR) for the overall project is equal to 19.04 percent and the Net Present Value (NPV) equals to US$ 59.9 million. The project is sensitive to changes in some of the model's variables (variations on benefits and costs, various lags in the realization of benefits and adoption rates). The risks factored in the sensitivity analysis include weather variations, potential protracted procurement delays and generally weak implementation capacity.

B. Benefits and beneficiaries

3- Based on the objective, results framework and component structure, the Project is expected to generate benefits of different nature. Such benefits include: (i) increased yields; (ii) reduced land degradation and soil rehabilitation; (iii) increased resilience to climate change due to water management and irrigation schemes; (iv) ensured food security and rural poverty reduction.

4- Primary project beneficiaries are: (i) rural smallholder farmers involved in subsistence agriculture, horticulture and small livestock keeping; (ii) farmers and youth interested in establishing farmers' associations or cooperatives or pioneer Small and Medium Enterprises (SMEs); (iii) women, especially woman-headed households, and households with young (0-5 years) children, with priority to malnourished children; and (iv) youth (18-35 years), in particular demobilized soldiers.

5- The target population was estimated to be around 60,000 households (HH). In order to avoid overlaps and double counting, this number has been disaggregated as

[1] Gittinger, P., 1982, Economic analysis of agricultural projects
[2] Belli, P., J.R. Anderson, H.N. Barnum, J.A. Dixon, and J-P. Tan (2001), Economic Analysis of Investment Operations: Analytical Tools and Practical Applications. WBI Development Studies, World Bank Institute, World Bank, Washington, D.C.
[3] IFAD, 2015, Economic and Financial analysis of rural investment projects, basic concepts and rationale.

follows for use in the Economic and Financial Analysis: (i) 17,500 households from Component A "Integrated Watershed Management"; (ii) 42,500 households from Component B "Crop and Livestock Productivity and Rural Livelihood Improvement", including households benefit from trainings, better availability of vaccines, access to water for their animals, access to cooperative services, etc.. The table below provides an overview of the aggregation of project beneficiaries from different interventions during the project

Table 1: Phasing and number of beneficiaries for each model:

Modesl		y1	y2	y3	y4	y5	y6	Total
Agricultural models								
1. Sorghum intercrop with Mung Bean - rainfed	ha	-	2,000	6,000	2,000	-	-	10,000
2. Sorghum intercrop with Mung Bean - irrigated	ha	-	-	100	200	200	-	500
3. Finger Millet intercrop with chickpeas - irrigation	ha	-	-	100	200	200	-	500
4. Irrigated sesame	ha	-	-	50	100	100	-	250
5. Finger Millet intercrop with chickpeas - irrigation	ha	-	32	128	160	80	-	400
6. Sesame with irrigated horticulture production	ha	-	8	32	40	20	-	100
7. Irrigated Horticulture production with Elephant Grass	ha	-	6	12	21	9	-	48
8. Wheat production with irrigated horticulture production	ha	-	6	12	21	9	-	48
9. Sorghum intercrop with Desmodium and Elephant Grass -Push-pull system	ha	-	8	16	28	12	-	64
10. Irrigated Horticulture production under drip irrigation (pilot)	ha	-	-	5	-	-	-	5
Total of hectares								11,915
Agri-business and small-medium enterprises (SME) models								
1. Berbere Processing Unit	processing unit	-	10	10	10	10	-	40
2. Sedentary Beekeeping	beekeepers	50	150	300	300	200	-	1,000
3. Migratory Beekeeping	beekeepers	50	150	300	300	200	-	1,000
4. Small Tool Manufacturer	workshop	-	-	4	4	4	-	12
5. Service Provider	SME	-	-	20	20	20	-	60
6. Sesame Oil Processing Unit	oil processor	-	-	-	2	-	-	2
7.Dairy Processing Unit	dairy processor	-	-	-	2	-	-	2
Agricultural models								
Number of HH per agricultural models	ha/HH							
1. Sorghum intercrop with Mung Bean - rainfed	1.00	-	2,000	6,000	2,000	-	-	10,000
2. Sorghum intercrop with Mung Bean - irrigated	0.50	-	-	200	400	400	-	1,000
3. Finger Millet intercrop with chickpeas - irrigation	0.50	-	-	200	400	400	-	1,000
4. Irrigated sesame	0.50	-	-	100	200	200	-	500
5. Finger Millet intercrop with chickpeas - irrigation	0.10	-	320	1,280	1,600	800	-	4,000
6. Sesame with irrigated horticulture production	0.10	-	80	320	400	200	-	1,000
7. Irrigated Horticulture production with Elephant Grass	0.13	-	46	92	162	69	-	369
8. Wheat production with irrigated horticulture production	0.13	-	46	92	162	69	-	369
9. Sorghum intercrop with Desmodium and Elephant Grass -Push-pull system	0.13	-	62	123	215	92	-	492
10. Irrigated Horticulture production under drip irrigation (pilot)	0.00	-	-	-	-	-	-	-
Subtotal of HH			2,554	8,408	5,538	2,231	-	18,731
With the exception of 160 ha of irrigation (double counting)		-	154	308	538	231	-	1,231
Subtotal number of HH benefited from agricultural activities		-	2,400	8,100	5,000	2,000	-	*17,500*
Number of HH per agri-business and SMEs models	# employees by business							
1. Berbere Processing Unit	14.00	-	140	140	140	140	-	560
2. Sedentary Beekeeping	2.00	100	300	600	600	500	-	2,100
3. Migratory Beekeeping	3.00	150	450	900	900	600	-	3,000
4. Small Tool Manufacturer	10.00	-	-	40	40	40	-	120
5. Service Provider	10.00	-	-	200	200	200	-	600
6. Sesame Oil Processing Unit	30.00	-	-	-	60	-	-	60
7.Dairy Processing Unit	30.00	-	-	-	60	-	-	60
Subtotal of HH benefited by agribusiness and SME		*250*	*890*	*1,880*	*2,000*	*1,480*	-	*6,500*
Other beneficiary households (vaccines, access to water for animals, etc..)		-	6,000	8,000	10,000	7,000	5,000	*36,000*
Total number of HH								***60,000***

C. Financial analysis

Assumptions for models development

6- **Labour.** In all the models, family labour is costed at the same cost of non-family labour. The price of labour is based on interviews during the field visits, 50 Nfa per day. However, non-family labour normally is not considered a cost for rural households, they use labour from other relatives or neighbors when they need more people to work in the fields during high demanded periods of labour such as harvesting. For the agribusiness models, the salary per employee range from 8,000 Nfa per month for the managers of medium processing units, to 1,800/ 2,250 Nfa per month for operators and supervisors/managers for the small-scale business. The agricultural models assume 15% of total activities are covered by the non-family labour while for the agribusiness models the hired labour represents 100%.

7- **Agro ecological zones**. In consultation with the agronomist of the design team and the Department of extension of the Ministry of Agriculture (MoA), one model was selected and prepared for each type of agricultural intervention and each specific agro-ecological zone. Specifically, there are five different agro ecological zones, namely: (i) zone 1: Arid and semiarid Lowland; zone 2: Moist -Lowlands (part of Gash-Barka); zone 3: moist- Lowlands (part of Gash-Barka) perennial river and shallow water availability; zone 4: Highlands; and finally zone 5: Midlands.

8- For the first agro ecological zone, there is one model for sorghum intercrop with mug bean. The second agro ecological zones has three different interventions: (i) sorghum intercrop with mug bean irrigated with spate irrigation; (ii) finger millet with intercrop with pulses (chickpeas) with spate irrigation, and finally (iii) sesame under irrigation. The third agro ecological zone has two types of interventions: (i) finger millet with intercrop with pulses (chickpeas) under irrigation, and (ii) irrigated sesame with irrigated horticulture production. The forth agro ecological zone is represented by two interventions: (i) irrigated horticulture production with surrounding by elephant grass in the perimeter, and (ii) wheat production with irrigated horticulture production. The last agro ecological zone has two model: (i) sorghum intercropped with desmonium and elephant grass (push-pull system), and one piloting intervention (ii) irrigated horticulture production with drip irrigation. The selected crops and type of technology and models for each agro ecological zones can be seen in the following table 2.

9- **Self-consumption**. Traditional agriculture in Eritrea is mainly for subsistence and home-consumption. It is a very marginal economic activity, unless farmers have access to water. Self-consumption is included in all the agricultural financial models, which also calculate commercial sales when production increases. For all the cereals models (sorghum, finger millet) during the WOP situation, the self-consumption represents about 100% and 90%, about 300/400 kg of cereal per HH where all cereals produced are used for feeding the household. During the WP situation, the self-consumption decreases to 75% and 50% due to increases in productivity. For the other crops such as sesame, horticulture, the self-consumption is less representative because these models have a more commercial focus, for the WOP situation is about 10%, reaching 6% with the project.

10- **Yields** currently remain at very low levels due to difficulties in accessing quality seeds, poor soil quality and limited use of manure. The project will encourage the use of improved seeds, bio pesticides and compost in addition to encouraging intercropping farming to improve

soil fertility, with the introduction of better agronomic practices, water and soil management would increase yields dramatically and reduce post-harvest losses. A detail description of the main agricultural parameter are under each agricultural model summary below.

Table 2: Yields /agricultural assumptions:

	Yields (Kg/ha)		%	Post-harvest losses		%
Agroecological zones / models	**WITHOUT PROJECT**	**WITH PROJECT (after Y5)**	**Increase WOP /WP Y5**	**WITHOUT PROJECT**	**WITH PROJECT (after Y5)**	**Decrease WOP /WP Y5**
Zone 1: Arid and semiarid Lowland						
Model 1: Sorghum Intercrop with Mug Bean (1 ha)						
Sorghum	519	1,090	110%	30%	8%	23%
Mung bean	-	602			10%	
Zone 2: Moist -Lowlands (part of Gash-Barka) Spate Irrigation						
Model 2: Sorghum Intercrop with Mug Bean irrigated with spate irrigation						
Sorghum	519	1,298	150%	30%	8%	23%
Mung bean	-	-			10%	
Model 3: Finger millet with intercrop with pulses (chickpeas) irrigated with spate irrigation						
Sorghum	333	966	190%	30%	8%	23%
Chickpeas	-	629			15%	
Model 4: Sesame with irrigation (1 ha)						
Sesame	200	660	230%	15%	7%	8%
Zone 3: Moist- Lowlands (part of Gash-Barka) perennial river and shallow water availability (wells and irrigation)						
Model 5: Finger millet with intercrop with pulses (chickpeas) under irrigation						
Finger milelt	333	966	190%	30%	8%	23%
Chickpeas	-	629			10%	
Model 6: Irrigated Sesame with Irrigated Horticulture Production						
Sesame	200	660	230%	15%	7%	
Tomatoes		16,250			15%	
Pepper		5,000			15%	
Onions		15,625			15%	
Potatoes		11,250			15%	
Cabbage		18,750			15%	
Zone 4: Highlands						
Model 7: Irrigated Horticulture production with surrounding by elephant grass (perimeter) (1 ha)						
Elephant grass		10,350			5%	
Tomatoes	4,333	16,250	275%	35%	15%	20%
Pepper	1,333	5,000	275%	35%	15%	20%
Onions	4,167	15,625	275%	35%	15%	20%
Potatoes	3,000	11,250	275%	35%	15%	20%
Cabbage	5,000	18,750	275%	35%	15%	20%
Model 8: Wheat production with irrigated horticulture production (1 ha)						
Wheat	1,000	1,600	60%	12%	5%	7%
Tomatoes	-	16,250			15%	
Pepper	-	5,000			15%	
Onions	-	15,625			15%	
Potatoes	-	11,250			15%	
Cabbage	-	18,750			15%	
Zone 5: Midlands						
Model 9:Sorghum intercropped with desmonium and elephant grass - PUSH PULL SYSTEM (1 ha)						
Sorghum	519	1,246	140%	30%	8%	23%
Desmodium	-	8,050			10%	
Elephant grass	-	10,200			10%	
Model 10: Irrigated Horticulture production with drip irrigation - Piloting activity just 5 ha						
Tomatoes	4,333	16,250	275%	35%	15%	20%
Pepper	1,333	5,000	275%	35%	15%	20%
Onions	4,167	15,625	275%	35%	15%	20%
Potatoes	3,000	11,250	275%	35%	15%	20%
Cabbage	5,000	18,750	275%	35%	15%	20%

Agricultural models

One of the objectives of the project is to promote diversification both livelihood portfolios and food consumption. As such, the project will promote a shift from sole cropping to mixed cropping whereby crops will be grown in the same season but will receive different allocations of the agricultural land. The reduction in the land allocations to the crop that was originally grown on the land (e,g sorghum) will result in a fall in its production. In the following years, production will increase and keep rising up to year three where it will have reached maximum. Thereafter, the level of output will remain unchanged. However, the new levels of production will remain lower than the before project scenario. Nevertheless, the fall in the output of this crop will be more than compensated by the rise (from zero) in the production of the other crop (e.g mung beans). Hence, mixed cropping will involve a trade-off between the two crops.

This trade-off is necessary because it will contribute towards promoting dietary diversity in the targeted areas as well as diversification of agricultural portfolios.

Agro ecological zone 1: Arid and semiarid Lowland

11- The first agricultural model displays **one hectare of sorghum cultivation intercropped with mug bean** (65 per cent sorghum /35 per cent mung bean) **under rainfed**. The initial investment costs for the watershed treatment works per hectare is US$ 200. The sorghum productivity will increase from 519 kg/year WOP situation to 1.09 tons/ha in year five; for mung bean from 430 kg/year in year one to 602 kg/year in year five. The inputs such as seeds, compost and tools represent only 62% of the total operational costs and the other 21% represents labour costs such as land preparation, harvesting, etc. the remaining 17% is investment costs. The benefit/cost ratio is larger than one, exactly 1.11. This model shows an internal rate of returns of 105 % and a NPV of US$ 1,920.

Agro ecological zone 2: Moist -Lowlands (part of Gash-Barka)

12- The project will support spate irrigation with an initial investment cost of US$ 2,000 per hectare. The second agricultural model shows **one hectare of sorghum cultivation intercropped with mug bean** (60 per cent sorghum /40 per cent mung bean) **under spate irrigation**. The sorghum productivity will increase from 519 kg/year WOP situation to 1.3 tons/ha in year five; for mung bean from 430 kg/year in year one to 602 kg/year in year five. The inputs such as seeds, compost and other agricultural tools represent 75% of the total operational costs and the remaining 25% represents labor costs such as land preparation, manure application, harvesting, etc. The benefit/cost ratio is slightly below of one, exactly 0.90. This model shows an internal rate of returns of 17% and a NPV of US$ 677.

13- The following model shows **one hectare of finger millet production intercropped with pulses (chickpeas)** (two thirds of finger millet /one third of chickpeas) **under spate irrigation**. The investment cost for the spate irrigation construction is US$ 2,000 per hectare. The average finger miller yield will be 333 kg/ha in WOP situation to 966 kg/ha for the fifth year, remaining stable for the rest of project life; for chickpeas from 449 kg/year in year one to 629 kg/year in year five. The inputs such as seeds, compost, bio-pesticides and other agricultural tools represent only 75% of the total operational costs and the other 25% represents labor costs such as land preparation, manure application, harvesting, etc. The benefit/cost ratio for this model is slightly larger than one. This model displays an internal rate of returns of 28% and a NPV of US$ 1,751.

14- The fourth model presents **one hectare of sesame cultivation under spate irrigation**. The initial investment cost for the spate irrigation construction is US$ 2,000 per hectare. The sesame yield will increase from 200 kg/ha in WOP situation to 660 kg/ha. The inputs such as seeds and bags represent only 74 per cent of the total operational costs and the other 26 per cent represents labor costs such as land preparation, harvesting, etc. The benefit/cost ratio is larger than one, exactly 1.07. The model shows an internal rate of returns of 23% and a NPV of US$ 1,268.

Agro ecological zone 3: moist- Lowlands (part of Gash-Barka) perennial river and shallow water availability

15- The fifth model shows **one hectare of finger millet with intercrop with pulses (chickpeas) under wells irrigation**. The initial investment costs for wells construction is about US$ 5,000 per hectare. The model represents (50 per cent finger millet /50 per cent chickpeas) and the average finger miller yield will be 333 kg/ha in WOP situation to 966 kg/ha

for the fifth year, remaining stable for the rest of project life; for chickpeas from 449 kg/year in year one to 629 kg/year in year five. The inputs such as seeds, compost, bio-pesticides and other agricultural tools represent only 75 per cent of the total operational costs and the other 25 per cent represents labor costs such as land preparation, manure application, harvesting, etc. The benefit/cost ratio for this model is slightly minor than one. This model displays an internal rate of returns of 10% and a NPV of US$ 20.

16- The sixth presents **one hectare of sesame cultivation with horticulture production during dry season under wells irrigation**. The investment costs per hectare for constructing the shallow /wells is US$ 5,000. The sesame yield will increase from 200 kg/ha in WOP situation to 660 kg/ha. Horticulture will be a new cultivation in WP situation. The yields for horticulture will reach at year five 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds compost, sacks, etc. represent 87 per cent of the total operational costs and the other 13 per cent represents labor. The benefit/cost ratio is larger than one, exactly 1.59. The model shows an internal rate of returns of 74% and a NPV of US$ 13,518.

Agro ecological zone 4: Highlands

17- The project will support as well the construction of small-scale surface irrigation; the initial investment cost per hectare is US$ 7,000.The seventh model displays **one hectare of irrigated horticulture production surrounded by elephant grass**. The yield will increase from 1 cycle to 3 cycle in horticulture, reaching at year five 10 tons/ha for elephant grass; 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds, compost represent only 87 per cent of the total operational costs and the other 13 per cent represents labor costs. The benefit/cost ratio is larger than one, exactly 1.16. The model shows an internal rate of returns of 25% and a NPV of US$ 4,414.

18- The eighth model displays **one hectare of wheat cultivation during rainy season and irrigated horticulture production during dry season under small-scale irrigation**. The productivity for wheat will increase from 1 ton/ha in WOP situation to 1.6 tons/ha in year five. The horticulture will be a new cultivation in WP situation. The yields for horticulture will reach at year five 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds, compost represent only 87 per cent of the total operational costs and the other 13 per cent represents labor costs. The investment cost per one hectare is US$ 7,000. The benefit/cost ratio is larger than one, exactly 1.45. The model shows an internal rate of returns of 51% and a NPV of US$ 11,561.

Agro ecological zone 5: Midlands

19- The ninth model represents **one hectare of sorghum intercropped with desmodium and elephant grass (push-pull system) under small-scale irrigation**. The push-pull system consists of one line of sorghum intercropped with other line of desmodium surrounded by elephant grass. This system increases productivities, improves soil conservation by reducing erosion and evapotranspiration plus fixing nitrogen and pest control (armyworm and reducing striga presence). This model represents (70 per cent sorghum /20 per cent desmodium / 10 elephant grass) and the average sorghum productivity will be 519 kg/ha in WOP situation to 1.24 tons/ha for the fifth year, remaining stable for the rest of project life. The yield for desmodium will reach 8 tons/ha and for elephant grass 10 tons/ha.

The inputs such as seeds, compost, bio-pesticides and other agricultural tools represent 75 per cent of the total operational costs and the other 25 per cent represents labor costs such as land preparation, manure application, harvesting, etc. The investment cost per one hectare is US$ 7,000. The benefit/cost ratio is greater than one, exactly 1.30. The model shows an internal rate of returns of 31% and a NPV of US$ 4,810.

20- The tenth model displays **one hectare of irrigated horticulture production under drip irrigation**. The horticulture will be a piloting activity with an initial investment cost per hectare of US$ 10,000 to build the infrastructure for drip irrigation. The yields for horticulture will reach at year five 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds, compost represent only 87 per cent of the total operational costs and the other 13 per cent represents labor costs. The benefit/cost ratio is equal to one. The model shows an internal rate of returns of 12% and a NPV of US$ 714.

Agri-business and Small and Medium Enterprises (SMEs) models

21- This **first model**[4] presents a *berbere* processing unit run by women. *Berbere* is a chili pepper and a spice mixture used to season many Eritrean dishes. Women usually process *berbere* without any protection for their health, part of the initial investment covers gloves and masks to prevent the harmful vapor coming from processing chili. The chili smell that is released while women are processing it can cause cough and irritation while breathing. All the machine and equipment needed is estimated at US$ 3,800. The full capacity of the unit is equal to 500 kg per month, reaching the full capacity at year five. The losses decrease from 20 percent to 10 per cent during year five. The only source of income is the sales of *berbere*. About 65 per cent of the total operational costs represents the purchase of chili peppers, paprika, salt, onion powder, cardamom, coriander, nutmeg, garlic powder, clover and cinnamon, all the ingredients needed to process the *berbere*. The number of personnel involved in this processing unit is one manager/accountant, one supervisor, five operators, and one cleaner. The benefit/cost ratio is slightly greater than one. The model displays an internal rate of return of 42.5% and a NPV of US$ 20,800.

22- The **second model** represents a sedentary **beekeeper** passing from two traditional beehives to five modern beehives (Langstroth) producing 30 kg of honey per year. In the without project (WOP) situation, the traditional beehives have a lower cost and productivity (15 kg per hive). Beekeeping is a substantial agricultural activity in Eritrea and can offer income and food to poor households, particularly to those with limited access to land. The limited use of fertilizers and low pollution represents an appropriate environment for developing this activity. However, due to diversity in climate conditions along the country, apiculture cannot be a profitable activity in many areas of the national territory. In this model, losses decreases from 12 per cent for WOP to 10 per cent in year one reaching 3 per cent in year five With Project (WP). About 65 per cent of the total operational costs represents feed for dry season and maintenance and the remaining 35% is labor cost. The initial investment and equipment needed are estimated at US$ 2,000. The benefit/cost ratio is equal 1.49. The model shows an internal rate of return of 72.1% and a NPV of about US$ 3,441.

23- The **third model** shows a migratory **beekeeper** with ten modern beehives (Langstroth) producing annually 30 kg of honey. Migratory beekeeping consists in moving the modern beehives twice a year, having one season in the highlands (April-October) and

[4] *Berbere* recipe has been extracted from field visits and costs have been shared by Eritrea FAO Office

another season in the north-east lowlands (December-April), searching for enough water and flowers for the colonies. Youth can be easily engaged in this activity, mainly commercial due to its high transportation costs, about 22 per cent of the total operational costs, and 48 per cent represents feed and maintenance and the remaining 30 per cent is labor cost. In this model, losses decreases from 10 per cent in year one reaching 3 per cent in year five. The initial investment and equipment needed are estimated at US$ 3,550. The benefit/cost ratio is equal 1.30. The model shows an internal rate of return of 33.9% and a NPV of about US$ 5,019.

24- The **next model** illustrates an off-farm activity, a **small tool manufacturer workshop**. The workshop will increase the quality of local construction of innovate tools and it represents an attractive income generating activity for creating employment among the youth. The model needs an initial investment of around US$ 57,332 to equip the workshop and purchase machines. During the first year of the business it is supposed to be run at half capacity, reaching full capacity in the fifth year. The workshop manufactures different products made of wood and metal. 60 per cent of the production are agricultural products like wheelbarrows, hoes, plough, and non-till planter, representing 60 per cent of the total production. The remaining 40 per cent is for non-agricultural products such as windows and desks. The personnel employed in this workshop is one manager/supervisor and four operator. The benefit/cost ratio is 1.5. The model records an internal rate of return of 80.4% and a NPV of US$ 264,014.

25- The **fifth model** illustrates a **group of young people providing agricultural service to smallholder farmers**. Eritrean agriculture is labor intensive, principally during weeding, threshing and harvesting. The introduction of agricultural small tools can reduce time, losses and increase quality. These small tools cannot be affordable for most of the smallholder famers hence this is an opportunity for youth to become agricultural service providers. This agricultural service provider is operational for 6 months a year with the exception of transportation, which runs in average of 25 working days per month annually. This model includes one manager/supervisor and four operators. The investment of US$ 3,105 to purchase mini thresher, wheat cutter, manual ripper, donkey cart and donkeys. The group of youth provides different services such as weeding, threshing, harvesting and transporting. The annual agricultural services are estimated at 15 ha for weeding, 25 ha for threshing and 15 ha for weeding. The benefit/cost ratio is slightly larger than one. The model records an internal rate of return of 37.9% and a NPV of US$ 2,844.

26- The **sixth model** represents a **small-scale sesame oil processor**[5], with capacity from 49,000 liters to 70,000 liter/day at full development, reaching its full development in year fifth at 63,000 liter per day. Demand of sesame oil is rising rapidly in Eritrea but due to a scarcity of processing at national level, the consumption is mainly relying on imported sesame oil. The plant is processing and commercializing sesame oil and sesame cake. The sesame cake contains high level of proteins very valuable for feeding animals and sesame oil represents a much healthier option than imported palm oil at the household consumption. The proposed initial investment is about US$ 105,000 to equip the plant with a sesame-cleaning machine, sesame oil press, truck, other equipment, generator and the building. The personnel hired for running this business is one manager/accountant, one supervisor, eleven operators, one cleaner and one security guard. The model is very sensitive to fluctuations in raw sesame seeds price, purchase of raw sesame seeds represents about the 77 per cent of

[5] Source: Ethiopia: "Sesame sector investment opportunity brief - sesame oil", plus field visits.

the operational costs. The benefit/cost ratio is slightly larger than one. The model presents an internal rate of return of 33.0% and a NPV of US$ 130,625 million.

27- The **seventh model** depicts a medium scale **Milk Processing Plant**[6], with capacity from 1,000 liters to 3,000 liter/day at full development, reaching its full development in year four at 2,500 liter per day. The plant is processing milk, selling pasteurized milk. The proposed initial investment is about US$ 156,100 where pasteurizer, homogenizer, equipment for cooling and generator will be adopted in order to overcome the lack of access to electricity and frequent power cuts. The building cost is estimated at 4.2 million of Nafka (equivalent to US$ 278,515). The personnel hired in this milk processing plant is one manager/accountant, one supervisor, one driver, ten operators, one cleaner and one security guard. The model is very sensitive to fluctuations in raw milk price, purchase of raw milk represents about 70% of the operational costs. The benefit/cost ratio is equal to 1.26. The model presents an internal rate of return of 78.1% and a NPV of US$ 2.28 million.

28- **Financial models.** The project net cash flows are based on the incremental approach, which results from comparing the With Project Situation and Without Project situations[7]. The financial models have been calculated at 10% discount rate. The below table summarizes the models as well as their financial performance.

Table 2: Summary of the financial models

	unit	FIRR	NPV (10%, US$ '000)	B/C ratio
Agricultural models				
1. Sorghum intercrop with Mung Bean - rainfed	ha	105%	1,920	1.11
2. Sorghum intercrop with Mung Bean - irrigated	ha	17%	677	0.90
3. Finger Millet intercrop with chickpeas - irrigation	ha	28%	1,751	1.04
4. Irrigated sesame	ha	23%	1,268	1.07
5. Finger Millet intercrop with chickpeas - irrigation	ha	10%	20	0.84
6. Sesame with irrigated horticulture production	ha	74%	13,518	1.59
7. Irrigated Horticulture production with Elephant Grass	ha	25%	4,414	1.16
8. Wheat production with irrigated horticulture production	ha	51%	11,561	1.45
9. Sorghum intercrop with Desmonium and Elephant Grass -Push-pull system	ha	31%	4,810	1.30
10. Irrigated Horticulture production under drip irrigation (pilot)	ha	12%	714	1.00
Agri-business and small-medium enterprises (SME) models				
1. Berbere Processing Unit	processor	43%	20,800	1.05
2. Sedentary Beekeeping	beekeepers	72%	3,441	1.49
3. Migratory Beekeeping	beekeepers	34%	5,019	1.30
4. Small Tool Manufacturer	workshop	80%	264,014	1.50
5. Service Provider	SME	38%	2,844	1.03
6. Sesame Oil Processing Unit	processor	33%	130,625	1.05
7.Dairy Processing Unit	processor	78%	2,286,694	1.26

[6] Field Visits during Pre-appraisal mission, November 2019.

[7] IFAD, 2015, Economic and Financial analysis of rural investment projects, basic concepts and rationale

D. Economic analysis

Assumptions

29- **Economic prices.** In line with estimates from The Economist Intelligence Unit (EIU), the official exchange rate has been pegged to the dollar at Nakfa (Nfa) 15.08 since December 2016. It is unlikely that the currency peg would be replaced by a free-floating exchange rate. Financial prices have been converted to economic by applying the following Conversion Factors (CF). For non-tradable goods, a CF of one was used since they are generally purchased at local level, without significant tax distortions. For labor, the opportunity cost conversion factor is 0.93[8]. For the tradeable goods, the Standard Conversion Factor (SCF) has been applied (0.97).

Table 3: Summary of conversion factors

Item	Discount factor
Labour	0.93
Tradeable goods and equipment	0.97
Non-tradeable goods	1.00

30- The analysis also estimated the Shadow Exchange Rate (SER) of 15.08 Nfa per US$ 1 and a Standard Conversion Factor of 0.97, based on World Bank (WDI) data on imports and exports and import and export duties and taxes, using the following formula:

$$SER = OER \cdot \frac{[(M + Tm) + (X - Tx)]}{(M + X)}$$

Where SER is the reference exchange rate,

OER the official exchange rate,

M the volume of imports,

Tm the rate of customs duties on imports,

X the volume of exports,

Tx the rate of taxes on exports.

31- All models are expressed in 2019 constant prices. The analysis builds on primary data collected by the pre-design team during the mission in November 2019, with the support of the Ministry of Agriculture and Ministry of Finance of Eritrea. In addition, data was collected also from other on-going projects from IFAD and FAO. Conservative assumptions and parameters have been applied, in order to avoid over-estimation of benefits and provide realistic results.

32- **Social discount rate.** In conformity with the World Bank Technical Note on Discounting Cost and Benefits in Economic Analysis, a 6% discount rate have been used to

[8] Source: Trading Economics (January 2020), rural unemployment rate is equal to 6.7% in 2016

reflect the social opportunity cost of capital in Eritrea[9]. This discount rate has been applied in order to calculate the economic NPV and future net incremental benefits.

Results

33- The period of analysis is 20 years to account for the phasing and gestation of the proposed interventions. Economic benefits from the farm and enterprise models have been aggregated using average incremental net benefits and beneficiaries for each agricultural and agri-business and off-farm activities under the project interventions and assuming different adoption rates, extracted from the costing exercise. Economic benefits from enterprise models have been aggregated using an expected number of small enterprises to be supported by the project and for the agricultural models for the number of hectares. Benefits are phased-in progressively for all types of interventions.

34- Economic costs associated with improving productivity and agri-business and small and medium enterprises were estimated at US$ 64.36 million and calculated by the removal of all project contributions included in the models (agricultural works investment, initial support kits, processing unit packages for initial investments, etc.). The economic costs have then been deducted from the overall economic benefit stream to obtain the project's net incremental benefit stream. The economic analysis shows satisfactory results, with a Net Present Value at US$ 46.12 million and a 19.08% Economic Internal Rate of Return (EIRR), suggesting that the overall project is economically profitable. These preliminary results will be fine-tuned at the design mission.

Table 3: Results of the economic analysis

Base scenario	EIRR	NPV @6%,20 years (million US$)
Base case	19.08 %	46.12

35- **Sensitivity analysis**. Results were tested for sensitivity to variations in benefits and costs and for various lags in the realization of benefits. A delay of 2 years in the generation of benefits or a decline of 30% relative to the base scenario would reduce the EIRR to 13.7% and 13.2% respectively, substantially above the discount rate. Cost overruns would have very moderate impact, with EIRR falling to 14.8% with a 30% increase. An adoption rate of 70% would decrease the EIRR to 13.2%. All scenarios show robust results under all hypothetical scenarios.

[9] Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects (WB, 2016)

Table 4: Results of the sensitivity analysis

Modelling scenario	EIRR	NPV (million US$)
Base scenario		
Base case	19.1%	46.12
Delay of benefits…		
By 1 year	16.2%	36.94
By 2 years	13.7%	28.30
Decrease of benefits		
By 10 %	17.4%	37.51
By 20 %	15.4%	28.89
By 30 %	13.2%	20.28
Increase of benefits		
By 10 %	20.6%	54.73
By 20 %	22.0%	63.35
Increase of costs		
By 10 %	17.5%	42.12
By 20 %	16.1%	38.12
By 30 %	14.8%	34.12
Adoption rate		
90%	17.4%	28.30
80%	15.4%	28.89
70%	13.2%	20.28

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Integrated Agriculture Development Project

Project Design Report

Annex 3: Project cost and financing: Detailed costs tables

Mission Dates:	8 to 30 June 2020
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East and Southern Africa Division
Programme Management Department

Annex 3: Project Costs and Financing

A. Introduction

1. This annex focuses on estimating the costs of the project. It provides the main underpinning assumptions as well as the summary and detailed cost tables. The costing exercise has been carried out using the Costab software[1] and is based on costs as at November 2019 during the pre-design mission.

2. Project costs are preliminary estimated at USD 46.6 million, which will be disbursed over 6 years. IFAD will provide USD 37 million through the IFAD11 financing cycle. The Government will provide a counterpart funding in local currency, and cover taxes and duties. Government contribution is estimated at USD 4.9 million. Beneficiaries will provide labour and construction materials for the construction of dams, water and land conservation, etc. Their contribution is preliminarily valued at USD 4.7 million.

B. Methods and assumptions

3. The Project costs task into account include investment costs and incremental operating costs within the three project components.

4. Costs have been calculated on the following basis:

- The presentation of the project to the IFAD's Board is scheduled for December 2020, through Lapse of Time (LOT) procedures. It is estimated that IADP could start its operations by March 2021, for a duration of six years.
- All base costs are derived from data provided by the Eritrean National Project Preparation Team on the basis of experience acquired during the (NAP), other projects and field work.
- The project is to some extent flexible, as based on the participatory approach and the principle of intervention at request. The estimated costs should thus be considered as indicative and mostly presented in terms of financial allocations by component, subcomponent or activity. Even when quantities and unit costs are indicated in the detailed tables, it is above all the overall allocation that should be considered. The detailed planning of activities and their implementation will be in response to requests from target groups and/or after needs assessment.
- Prices are inclusive of all taxes, i.e. incorporating custom duties, Value Added Tax (VAT) and other sales taxes. The tax rates retained are taken from the Ministry of Finance, as shown in the table below.
- Base costs for goods and services purchased locally are derived from local sales prices (market prices), including all taxes as they are real costs for the Project. All prices of locally purchased goods and services, as well as salaries and allowances, are expressed in foreign currency, albeit payable in Eritrean Nakfa (ERN). In light of the current and forecasted local inflation, a rate of 12 percent has been used to deal with the rise in prices at local level. Indeed, the annual local inflation rate has been set at 12 percent during the implementation period according to The Economist Intelligence Unit (EIU).[2] Foreign inflation was set at 3 percent per year.
- Base costs for imported goods include cost, insurance and freight (CIF)[3] prices, duties, sales taxes and domestic value added, i.e. the costs of local handling, transportation, financial intermediation, margins of various actors in the supply chain, up to the delivery

[1] COSTAB is a software originally designed by the World Bank and FAO and used by a number of International Financing Institutions in preparing, organizing and analyzing project costs.
[2] The inflation rate used is a projection for the project period based on the current rate, *EIU*, *October 2019.*
[3] CIF (foreign costs, insurance and freight) - includes the foreign purchase price plus transportation costs to the port in the country of manufacture, insurance during shipment and the freight costs for transporting the goods to the port of entry).

location. Price contingencies are intended for facing up to the effects of inflation and devaluation of the exchange rate between ERN and USD. They are computed by Costab on the basis of the rates set forth for the inflation at national and international levels.

- Physical contingencies are intended to shield impacts of changes in quantities and/or methods of implementation of the project. They are expressed as a percentage of base costs and are applied on civil works, services and equipment, vehicles and inputs. On the basis of the experience of the NAP, physical contingencies are set to 15 percent for civil works and two percent of the rest.
- The official exchange rate has been pegged to the dollar at ERN 15.08 since December 2016. It is unlikely that the currency peg would be replaced by a free-floating exchange rate.
- Foreign exchange represents the direct and indirect imported inputs embodied in the cost. The expenditure accounts and the percentages of foreign exchange used are based on the NAP, as shown in the table below.

5. Assumptions for physical contingencies, foreign exchange and taxes' proportions in total costs, by category of expenditures, are summarized in the Table below.

Expenditure category	Physical Cont.	Tax (% of total)	For. ex.
Investment Costs			
Works	15%	5%	20%
Services			
Goods, services and inputs	2%	12%	30%
Trainings & Workshops	2%	5%	40%
Consultancies	2%	10%	60%
Equipment, vehicles and inputs			
Equipment and materials	2%	12%	30%
Vehicles	2%	25%	90%
Grant and subsidies	0%	0%	0%
Recurrent Costs			
Salaries and Allowances	0%	0%	0%
Operations & Maintenance	0%	12%	30%

C. Project Costs

6. Total project costs, including physical and price contingencies, are estimated at USD 46.6 million, of which USD40.0 million represent the base cost and USD6.6 million the contingency allowances. Taxes and foreign exchange represent respectively 8 percent and 27 percent of total project cost. The largest part is for Component 2 "Crop and Livestock Productivity and Rural Livelihood Improvement" (USD15.63 million, base costs), followed by Component 1 "Integrated Watershed Management" (USD15.3 million, base costs) and finally Component 3 "Project Support Services" (USD9.11 million, base costs). The project total costs include the costs for mainstreaming of social inclusion themes (i.e. 14% total costs dedicated to nutrition sensitive agriculture)".

7. The summary table below provides the costs by component and subcomponent and by year.

Eritrea
Integrated Agriculture Development Project
Components Project Cost Summary

	(ERN '000)			(USD '000)			% Foreign Exchange	% Total Base Costs
	Local	**Foreign**	**Total**	**Local**	**Foreign**	**Total**		
A. Integrated Watershed Management								
Development and Institutionalization of Participatory Integrated Watershed Management Plans	911	1,367	2,279	60	91	151	60	-
Operationalization of Watershed Management Plans	4,072	5,007	9,078	270	332	602	55	2
Watershed Restoration and Water Management Infrastructure	175,290	43,822	219,112	11,624	2,906	14,530	20	36
Subtotal Integrated Watershed Management	180,273	50,196	230,469	11,954	3,329	15,283	22	38
B. Crop and Livestock Productivity and Rural Livelihood Improvement								
Access to Advisory Services	23,657	14,422	38,079	1,569	956	2,525	38	6
Sustainable Access to Inputs and Technologies for Enhanced Production and Post-Harvest Management	71,879	31,513	103,392	4,767	2,090	6,856	30	17
Producers' Organizations (PO) and Cooperatives Support	66,008	28,220	94,228	4,377	1,871	6,249	30	16
Subtotal Crop and Livestock Productivity and Rural Livelihood Improvement	161,545	74,155	235,699	10,713	4,917	15,630	31	39
C. Capacity Building and Project Support Services								
Institutional Capacity Building and policy support	56,300	26,234	82,535	3,733	1,740	5,473	32	14
Project management and South-South Triangular Cooperation	37,793	17,081	54,874	2,506	1,133	3,639	31	9
Subtotal Capacity Building and Project Support Services	94,093	43,315	137,409	6,240	2,872	9,112	32	23
D. Disaster Risk Reduction and Management	-	-	-	-	-	-	-	-
Total BASELINE COSTS	435,911	167,666	603,577	28,907	11,118	40,025	28	100
Physical Contingencies	34,003	9,777	43,780	2,255	648	2,903	22	7
Price Contingencies	183,317	66,138	249,455	2,731	985	3,717	27	9
Total PROJECT COSTS	653,231	243,581	896,812	33,893	12,752	46,645	27	117

D. Project Financing

8. The project would be financed by IFAD through two types of financing: IFAD Grant of USD29.6 million and IFAD Loan of USD7.4 million during a period of six years. The Government contribution is estimated to be about USD 4.9 million. The contribution of the beneficiaries is estimated at the equivalent of USD 4.7 million.

9. The proposed financing plan is presented in detail in the summary tables below. The grant will mainly be used to finance Subcomponent 1.2, the innovative Component 2, and the required technical assistance.

Eritrea
Integrated Agriculture Development Project
Components by Financiers
(USD '000)

	GoE		IFAD Grant		IFAD Loan		Beneficiary Contribution		Total		For.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.		
A. Integrated Watershed Management													
Development and Institutionalization of Participatory Integrated Watershed Management Plans	16	10.0	141	90.0	-	-	-	-	157	0.3	94	47	16
Operationalization of Watershed Management Plans	57	8.8	593	91.2	-	-	-	-	650	1.4	358	235	57
Watershed Restoration and Water Management Infrastructure	913	5.0	9,413	51.5	3,597	19.7	4,337	23.8	18,260	39.1	3,652	13,695	913
Subtotal Integrated Watershed Management	986	5.2	10,147	53.2	3,597	18.9	4,337	22.7	19,067	40.9	4,104	13,977	986
B. Crop and Livestock Productivity and Rural Livelihood Improvement													
Access to Advisory Services	249	9.1	2,480	90.9	-	-	-	-	2,728	5.8	1,031	1,448	249
Sustainable Access to Inputs and Technologies for Enhanced Production and Post-Harvest Management	890	11.7	6,690	88.3	-	-	-	-	7,580	16.3	2,311	4,379	890
Producers' Organizations (PO) and Cooperatives Support	669	9.5	6,412	90.5	-	-	-	-	7,082	15.2	2,112	4,301	669
Subtotal Crop and Livestock Productivity and Rural Livelihood Improvement	1,808	10.4	15,582	89.6	-	-	-	-	17,390	37.3	5,453	10,129	1,808
C. Capacity Building and Project Support Services													
Institutional Capacity Building and policy support	495	8.0	1,995	32.2	3,339	53.9	370	6.0	6,199	13.3	1,947	3,757	495
Project management and South-South Triangular Cooperation	1,599	40.1	1,926	48.3	463	11.6	-	-	3,989	8.6	1,247	2,511	231
Subtotal Capacity Building and Project Support Services	2,094	20.6	3,921	38.5	3,802	37.3	370	3.6	10,188	21.8	3,194	6,268	726
D. Disaster Risk Reduction and Management	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PROJECT COSTS	4,888	10.5	29,651	63.6	7,400	15.9	4,707	10.1	46,645	100.0	12,752	30,373	3,520

10. Summary by Expenditure Category – The table below provides a summary of the estimated IADP costs by categories of expenditure and by financier.

Eritrea
Integrated Agriculture Development Project
Expenditure Accounts by Financiers
(USD '000)

	GoE		IFAD Grant		IFAD Loan		Beneficiary Contribution		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
I. Investment Costs													
A. Works	1,036	5.0	10,268	49.6	4,707	22.7	4,707	22.7	20,718	44.4	4,144	15,538	1,036
B. Services													
1. Trainings and workshops	261	5.0	4,962	95.0	-	-	-	-	5,223	11.2	2,089	2,873	261
2. Consultancies	275	10.0	2,475	90.0	-	-	-	-	2,750	5.9	1,650	825	275
Subtotal Services	536	6.7	7,437	93.3	-	-	-	-	7,973	17.1	3,739	3,698	536
C. Grants and subsidies	-	-	355	100.0	-	-	-	-	355	0.8	-	355	-
D. Equipment and inputs													
1. Equipment	951	12.0	5,765	72.7	1,211	15.3	-	-	7,928	17.0	2,378	4,598	951
2. Crop and Livestock inputs	939	12.0	5,825	74.5	1,060	13.5	-	-	7,823	16.8	2,347	4,538	939
Subtotal Equipment and inputs	1,890	12.0	11,590	73.6	2,271	14.4	-	-	15,751	33.8	4,725	9,136	1,890
Total Investment Costs	3,462	7.7	29,651	66.2	6,978	15.6	4,707	10.5	44,797	96.0	12,608	28,727	3,462
II. Recurrent Costs													
A. Salaries and allowances	1,368	100.0	-	-	-	-	-	-	1,368	2.9	-	1,368	-
B. Operations and Maintenance	58	12.0	-	-	422	88.0	-	-	479	1.0	144	278	58
Total Recurrent Costs	1,426	77.2	-	-	422	22.8	-	-	1,847	4.0	144	1,646	58
Total PROJECT COSTS	4,888	10.5	29,651	63.6	7,400	15.9	4,707	10.1	46,645	100.0	12,752	30,373	3,520

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Project Design Report

Annex 4: Economic and Financial Analysis

Mission Dates:	8 to 30 June 2020
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East and Southern Africa Division
Programme Management Department

Annex 4: Economic and Financial Analysis

A. Introduction

There is a general absence of reliance data in the country, mostly due to limited capacities. M&E has been a significant challenge in the implementation of the IFAD-supported programmes in the country including National Agricultural Programme (NAP). This EFA has therefore built on the available data and corroborated by secondary sources. It is also noted that the IADP design has been finalised remotely due to the COVID 19 pandemic, and is predicated on a pre-design mission that took place in October 2019. Plans to undertake a validation mission in 2020 did not materialise. It is therefore acknowledged that a few of the EFA assumptions could be revisited during the Mid-Term Review (MTR), if deemed necessary.

1- This annex presents the draft Economic and Financial Analysis (EFA) of the Integrated Agriculture Development Programme (IADP). The methodological approach of the EFA follows that of Gittinger (1982)[1], Belli et al. (2001)[2] and is in line with recent guidelines published by IFAD on economic and financial analysis[3]. The financial analysis was performed from the perspective of beneficiaries. The economic analysis also differed from the financial analysis due to a shadow price that was assumed for the main project inputs and outputs.

2- Agricultural models represent 35% of total project benefits. One agricultural model, rainfed sorghum intercropped with mung bean, represents 14% of the total benefits (reaching 10,000 HH, 17% of total project HH), while the remaining 9 irrigated agricultural models provide 21% of total benefits (reaching 7,500 HH, 13% of total HH).

3- Agribusiness and SMEs represent 30% of project benefits and 6,500 household beneficiaries (11% of total project HH). There are 8 models presented for SMEs as follows:

SME and Agri-business

Number of HH per agri-business and SMEs models	# employees by business	y1	y2	y3	y4	y5	y6	Total
		Beneficiaries						
1. Berbere Processing Unit	14	-	140	140	140	140	-	560
3. Sedentary Beekeeping	2	100.00	300	600	600	500	-	2,100
4. Migratory Beekeeping	3	150.00	450	900	900	600	-	3,000
5. Small Tool Manufacturer	10	-	-	40	40	40	-	120
6. Service Provider	10	-	-	200	200	200	-	600
7. Sesame Oil Processing Unit	30	-	-	-	60	-	-	60
8.Dairy Processing Unit	30	-	-	-	60	-	-	60
Subtotal of HH benefited by agribusiness and SME		*250*	*890*	*1,880*	*2,000*	*1,480*	-	*6,500*

4- Other beneficiary households (from Poultry, ruminants, Efficient cook stoves, Catchment treatment/ afforestration, Vaccination campaigns/ Animal health).

[1] Gittinger, P., 1982, Economic analysis of agricultural projects

[2] Belli, P., J.R. Anderson, H.N. Barnum, J.A. Dixon, and J-P. Tan (2001), Economic Analysis of Investment Operations: Analytical Tools and Practical Applications. WBI Development Studies, World Bank Institute, World Bank, Washington, D.C.

[3] IFAD, 2015, Economic and Financial analysis of rural investment projects, basic concepts and rationale.

Breakdown of other beneficiaries (36,000)

	Y1	Y2	Y3	Y4	Y5	Y6	
	Beneficiaries						
A: Poultry							
Beneficiaries per year (hh)	100	400	600	600	300	-	2,000
B: Small livestock (Ruminants)							
Beneficiaries per year (hh)	90	330	540	540	300	-	1,800
C: Efficient Cook Stoves							
Beneficiaries per year (hh)	300	1,600	1,800	1,800	500	-	6,000
D: Catchment Treatment/ watershed etc (Afforestation)							
Beneficiaries per year (hh)	250	3,350	7,500	3,500	400	-	15,000
E: Vaccination campaigns/ Animal health	2,000	3,000	6,200				11,200
TOTAL							36,000

5- The project investments that relate to the above benefits (36,000 beneficiaries) are follows:

Details of Investments towards other beneficiaries (36,000)

Eritrea										
Integrated Agriculture Development Project										
Details of investments towards the other Beneficiaries										
					Quantities				Unit Cost	
	Unit	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**Total**	**(USD)**	**Total (USD)**
1. Improved soil and water conservation and watershed management										
Hillside closure and afforestation	ha	-	2,000	6,000	2,000	-	-	10,000	100	1,238,552
Hillside physical SWC (micro-terraces, detention ponds, bunds, etc.)	ha	-	2,000	6,000	2,000	-	-	10,000	200	2,477,104
Gully remediation check dams (gabion)	m3	-	1,000	1,500	1,500	-	-	4,000	200	994,600
Groundwater recharge check dams (masonry)	m3	-	1,500	3,000	2,500	-	-	7,000	300	2,612,137
2. MIHAP										
a. MIHAP : Moist low-lands- part of Gash-Barka) perennial river and shallow water availability (wells and irrigation) AND mid-land /d										
Cow - mix breed (1*hh) /e	head	25	125	150	150	50	-	500	1.151	635,222
Small ruminants (5*hh) /f	head	150	750	900	900	300	-	3,000	150	496,698
Seeds - sorghum/millet , horticulture, forage, sesame	kg	2,000	10,000	10,000	10,000	5,000	-	37,000	10	408,569
Fruit trees/ wood trees (seedlings)	seed	1,000	5,000	6,000	6,000	2,000	-	20,000	15	331,132
Chicken (25 * hh)	unit	1,250	6,250	7,500	7,500	2,500	-	25,000	1	27,594
Energy-saving cooking stove- full installation cost, including training (1*hh)	inst package	50	250	300	300	100	-	1,000	135	149,009
b. Adapted MIHAP (mid-land and highland) - (1000hh out of the 4500 hh tagreted by FFSs)										
Small ruminants (5*hh)	head	300	900	1,800	1,800	1,200	-	6,000	150	1,002,296
Chicken (25 * hh)	chick	1,250	3,750	7,500	7,500	5,000	-	25,000	1	27,842
Wood trees - seedlings (20*hh)	seedlings	1,000	3,000	6,000	6,000	4,000	-	20,000	15	334,099
Seeds - Sorghum/millet, horticulture, forage- (30kg*hh)	kg	1,500	4,500	9,000	9,000	6,000	-	30,000	10	334,099
Beehives (2*hh) - 50 % hh traditional	beehive	50	150	300	300	200	-	1,000	233	259,483
Beehives (2*hh) - 50 % hh modern (for commercial purposes)	beehive	50	150	300	300	200	-	1,000	347	386,441
Energy-saving cooking stove- full installation cost, including training (1*hh)	unit	50	150	300	300	200	-	1,000	135	150,344
c. Mini-MIHAP - support to agropastoralists (arid and semi-arid lowlands, also part of Gash-Barka) (4000 hh out 2067 targted by FFSs)										
Inputs, tools and equipment for home gardens	kit	200	1,200	1,200	1,200	200	-	4,000	50	219,766
Energy-saving cooking stove- full installation cost, including training (1*hh)	unit	200	1,200	1,200	1,200	200	-	4,000	135	593,368
Sesame-sorghum/leguminous seeds (25kg/hh)	kg	5,000	30,000	30,000	30,000	5,000	-	100,000	5	549,415
Forage/ wood trees seedlings (20*hh)	seedling	4,000	24,000	24,000	24,000	4,000	-	80,000	15	1,318,596
										14,546,363

6- **Without Project Situation:** For the models under livestock various proxies have been used. Specifically for Poultry the WOP can go as low as 7 eggs/hen/month while in the with the project situation this can increase to 12-15 eggs/ hen/ month.

Increase in the Productivity of livestock products[4]		
	Without Project	**With Project**
Goat milk	0.5 litres (L)/day/per goat	1.5 L/day/goat
Cow milk	1 L – 3 L/day/cow	6 L – 8 L day/cow
Eggs	7 eggs/hen/month	12-15 eggs/hen/month

7- The financial analysis shows that the targeted activities are sound. The economic analysis also shows that the project is economically viable. Taking into account the current assumptions the Economic Rate of Return (EIRR) for the overall project is equal to 19 percent and the Net Present Value (NPV) equals to US$ 58.54 million. The project is sensitive to changes in some of the model's variables (variations on benefits and costs,

[4] Records of Ministry of Agriculture, Zoba Debub and Zoba Gash Barka under PCRRDP PCR.

various lags in the realization of benefits and adoption rates). The risks factored in the sensitivity analysis include weather variations, potential protracted procurement delays and generally weak implementation capacity.

B. Benefits and beneficiaries

8- Based on the objective, results framework and component structure, the Project is expected to generate benefits of different nature. Such benefits include: (i) increased yields; (ii) reduced land degradation and soil rehabilitation; (iii) increased resilience to climate change due to water management and irrigation schemes; (iv) ensured food security and rural poverty reduction.

9- Primary project beneficiaries are: (i) rural smallholder farmers involved in subsistence agriculture, horticulture and small livestock keeping; (ii) farmers and youth interested in establishing farmers' associations or cooperatives or pioneer Small and Medium Enterprises (SMEs); (iii) women, especially woman-headed households, and households with young (0-5 years) children, with priority to malnourished children; and (iv) youth (18-35 years), in particular demobilized soldiers.

10- The target population was estimated to be around 60,103 households (HH). In order to avoid overlaps and double counting, this number has been disaggregated as follows for use in the Economic and Financial Analysis: (i) 17,500 households from Component A "Integrated Watershed Management"; (ii) 42,500 households from Component B "Crop and Livestock Productivity and Rural Livelihood Improvement", including households benefit from trainings, better availability of vaccines, access to water for their animals, access to cooperative services, etc.. The table below provides an overview of the aggregation of project beneficiaries from different interventions during the project

Table 1: Phasing and number of beneficiaries for each model:

Modesl		y1	y2	y3	y4	y5	y6	Total
Agricultural models								
1. Sorghum intercrop with Mung Bean - rainfed	ha	-	2,000	6,000	2,000	-	-	10,000
2. Sorghum intercrop with Mung Bean - irrigated	ha	-	-	100	200	200	-	500
3. Finger Millet intercrop with chickpeas - irrigation	ha	-	-	100	200	200	-	500
4. Irrigated sesame	ha	-	-	50	100	100	-	250
5. Finger Millet intercrop with chickpeas - irrigation	ha	-	32	128	160	80	-	400
6. Sesame with irrigated horticulture production	ha	-	8	32	40	20	-	100
7. Irrigated Horticulture production with Elephant Grass	ha	-	6	12	21	9	-	48
8. Wheat production with irrigated horticulture production	ha	-	6	12	21	9	-	48
9. Sorghum intercrop with Desmodium and Elephant Grass -Push-pull system	ha	-	8	16	28	12	-	64
10. Irrigated Horticulture production under drip irrigation (pilot)	ha	-	-	5	-	-	-	5
Total of hectares								11,915
Agri-business and small-medium enterprises (SME) models								
1. Berbere Processing Unit	processing unit	-	10	10	10	10	-	40
2. Sedentary Beekeeping	beekeepers	50	150	300	300	200	-	1,000
3. Migratory Beekeeping	beekeepers	50	150	300	300	200	-	1,000
4. Small Tool Manufacturer	workshop	-	-	4	4	4	-	12
5. Service Provider	SME	-	-	20	20	20	-	60
6. Sesame Oil Processing Unit	oil processor	-	-	-	2	-	-	2
7.Dairy Processing Unit	dairy processor	-	-	-	2	-	-	2
Agricultural models								
Number of HH per agricultural models	ha/HH							
1. Sorghum intercrop with Mung Bean - rainfed	1.00	-	2,000	6,000	2,000	-	-	10,000
2. Sorghum intercrop with Mung Bean - irrigated	0.50	-	-	200	400	400	-	1,000
3. Finger Millet intercrop with chickpeas - irrigation	0.50	-	-	200	400	400	-	1,000
4. Irrigated sesame	0.50	-	-	100	200	200	-	500
5. Finger Millet intercrop with chickpeas - irrigation	0.10	-	320	1,280	1,600	800	-	4,000
6. Sesame with irrigated horticulture production	0.10	-	80	320	400	200	-	1,000
7. Irrigated Horticulture production with Elephant Grass	0.13	-	46	92	162	69	-	369
8. Wheat production with irrigated horticulture production	0.13	-	46	92	162	69	-	369
9. Sorghum intercrop with Desmodium and Elephant Grass -Push-pull system	0.13	-	62	123	215	92	-	492
10. Irrigated Horticulture production under drip irrigation (pilot)	0.00	-	-	-	-	-	-	-
Subtotal of HH			2,554	8,408	5,538	2,231	-	18,731
With the exception of 160 ha of irrigation (double counting)		-	154	308	538	231	-	1,231
Subtotal number of HH benefited from agricultural activities		-	2,400	8,100	5,000	2,000	-	*17,500*
Number of HH per agri-business and SMEs models	# employees by business							
1. Berbere Processing Unit	14.00	-	140	140	140	140	-	560
2. Sedentary Beekeeping	2.00	100	300	600	600	500	-	2,100
3. Migratory Beekeeping	3.00	150	450	900	900	600	-	3,000
4. Small Tool Manufacturer	10.00	-	-	40	40	40	-	120
5. Service Provider	10.00	-	-	200	200	200	-	600
6. Sesame Oil Processing Unit	30.00	-	-	-	60	-	-	60
7.Dairy Processing Unit	30.00	-	-	-	60	-	-	60
Subtotal of HH benefited by agribusiness and SME		*250*	*890*	*1,880*	*2,000*	*1,480*	-	*6,500*
Other beneficiary households (vaccines, access to water for animals, etc..)		-	6,000	8,000	10,000	7,000	5,000	*36,000*
Total number of HH								***60,000***

C. Financial analysis

Assumptions for models development

11- **Labour.** In all the models, family labour is costed at the same cost of non-family labour. The price of labour is based on interviews during the field visits, 50 Nfa per day. However, non-family labour normally is not considered a cost for rural households, they use labour from other relatives or neighbors when they need more people to work in the fields during high demanded periods of labour such as harvesting. For the agribusiness models, the salary per employee range from 8,000 Nfa per month for the managers of medium processing units, to 1,800/ 2,250 Nfa per month for operators and supervisors/managers for the small-scale business. The agricultural models assume 15% of total activities are covered by the non-family labour while for the agribusiness models the hired labour represents 100%.

12- **Agro ecological zones**. In consultation with the agronomist of the design team and the Department of extension of the Ministry of Agriculture (MoA), one model was selected and prepared for each type of agricultural intervention and each specific agro-ecological zone. Specifically, there are five different agro ecological zones, namely: (i) zone 1: Arid and semiarid Lowland; zone 2: Moist -Lowlands (part of Gash-Barka); zone 3: moist- Lowlands (part of Gash-Barka) perennial river and shallow water availability; zone 4: Highlands; and finally zone 5: Midlands.

13- For the first agro ecological zone, there is one model for sorghum intercrop with mug bean. The second agro ecological zones has three different interventions: (i) sorghum intercrop with mug bean irrigated with spate irrigation; (ii) finger millet with intercrop with pulses (chickpeas) with spate irrigation, and finally (iii) sesame under irrigation. The third agro ecological zone has two types of interventions: (i) finger millet with intercrop with pulses (chickpeas) under irrigation, and (ii) irrigated sesame with irrigated horticulture production. The forth agro ecological zone is represented by two interventions: (i) irrigated horticulture production with surrounding by elephant grass in the perimeter, and (ii) wheat production with irrigated horticulture production. The last agro ecological zone has two model: (i) sorghum intercropped with desmonium and elephant grass (push-pull system), and one piloting intervention (ii) irrigated horticulture production with drip irrigation. The selected crops and type of technology and models for each agro ecological zones can be seen in the following table 2.

14- **Self-consumption**. Traditional agriculture in Eritrea is mainly for subsistence and home-consumption. It is a very marginal economic activity, unless farmers have access to water. Self-consumption is included in all the agricultural financial models, which also calculate commercial sales when production increases. For all the cereals models (sorghum, finger millet) during the WOP situation, the self-consumption represents about 100% and 90%, about 300/400 kg of cereal per HH where all cereals produced are used for feeding the household. During the WP situation, the self-consumption decreases to 75% and 50% due to increases in productivity. For the other crops such as sesame, horticulture, the self-consumption is less representative because these models have a more commercial focus, for the WOP situation is about 10%, reaching 6% with the project.

15- **Yields** currently remain at very low levels due to difficulties in accessing quality seeds, poor soil quality and limited use of manure. The project will encourage the use of improved seeds, bio pesticides and compost in addition to encouraging intercropping farming to improve

soil fertility, with the introduction of better agronomic practices, water and soil management would increase yields dramatically and reduce post-harvest losses. A detail description of the main agricultural parameter are under each agricultural model summary below.

Table 2: Yields /agricultural assumptions:

	Yields (Kg/ha)		%	Post-harvest losses		%
Agroecological zones / models	**WITHOUT PROJECT**	**WITH PROJECT (after Y5)**	**Increase WOP /WP Y5**	**WITHOUT PROJECT**	**WITH PROJECT (after Y5)**	**Decrease WOP /WP Y5**
Zone 1: Arid and semiarid Lowland						
Model 1: Sorghum Intercrop with Mug Bean (1 ha)						
Sorghum	519	1,090	110%	30%	8%	23%
Mung bean	-	602			10%	
Zone 2: Moist -Lowlands (part of Gash-Barka) Spate Irrigation						
Model 2: Sorghum Intercrop with Mug Bean irrigated with spate irrigation						
Sorghum	519	1,298	150%	30%	8%	23%
Mung bean	-	-			10%	
Model 3: Finger millet with intercrop with pulses (chickpeas) irrigated with spate irrigation						
Sorghum	333	966	190%	30%	8%	23%
Chickpeas	-	629			15%	
Model 4: Sesame with irrigation (1 ha)						
Sesame	200	660	230%	15%	7%	8%
Zone 3: Moist- Lowlands (part of Gash-Barka) perennial river and shallow water availability (wells and irrigation)						
Model 5: Finger millet with intercrop with pulses (chickpeas) under irrigation						
Finger milelt	333	966	190%	30%	8%	23%
Chickpeas	-	629			10%	
Model 6: Irrigated Sesame with Irrigated Horticulture Production						
Sesame	200	660	230%	15%	7%	
Tomatoes		16,250			15%	
Pepper		5,000			15%	
Onions		15,625			15%	
Potatoes		11,250			15%	
Cabbage		18,750			15%	
Zone 4: Highlands						
Model 7: Irrigated Horticulture production with surrounding by elephant grass (perimeter) (1 ha)						
Elephant grass		10,350			5%	
Tomatoes	4,333	16,250	275%	35%	15%	20%
Pepper	1,333	5,000	275%	35%	15%	20%
Onions	4,167	15,625	275%	35%	15%	20%
Potatoes	3,000	11,250	275%	35%	15%	20%
Cabbage	5,000	18,750	275%	35%	15%	20%
Model 8: Wheat production with irrigated horticulture production (1 ha)						
Wheat	1,000	1,600	60%	12%	5%	7%
Tomatoes	-	16,250			15%	
Pepper	-	5,000			15%	
Onions	-	15,625			15%	
Potatoes	-	11,250			15%	
Cabbage	-	18,750			15%	
Zone 5: Midlands						
Model 9:Sorghum intercropped with desmonium and elephant grass - PUSH PULL SYSTEM (1 ha)						
Sorghum	519	1,246	140%	30%	8%	23%
Desmodium	-	8,050			10%	
Elephant grass	-	10,200			10%	
Model 10: Irrigated Horticulture production with drip irrigation - Piloting activity just 5 ha						
Tomatoes	4,333	16,250	275%	35%	15%	20%
Pepper	1,333	5,000	275%	35%	15%	20%
Onions	4,167	15,625	275%	35%	15%	20%
Potatoes	3,000	11,250	275%	35%	15%	20%
Cabbage	5,000	18,750	275%	35%	15%	20%

16- The PCRRDP PCR documented some yields in Gash Barka and Debub that justify the without project situation used in the EFA analysis. These extracts from the PCRRDP are as follows:

Yield increases after PCRRDP Programme Intervention that provide a good proxy for the IADP WOP

Debub

Enterprise	Unit	Pre- project yield	Actual yield achieved	Technology introduced	Farm-gate prices	
					Unit	ERN
Livestock						
Dairy development (Milk production)	Lit/cow/day	3	6	Introduction of improved breed & Green feed Improvement of health through Access to veterinary drugs Awareness raising	lit	27
Forage development (Green feed production)	Ton/year	3,000	24,000	Introduction of Green feed (alfalfa & maize) Awareness raising Good access to green feed production land	ton	3000
Bee keeping development (Honey production)	Ton/year	112	186	Distribution of modern beehives with its accessories Capacity building Enhancement	kg	550

Gash Barka

Enterprise	Pre- project yield (qt/ha)	Actual yields achieved (qt/ha)	Technology introduced	Farm gate prices	
				Unit	Nakfa
Sorghum	5	10 (rain-fed); 18 (spate irrigation)	• Provision of improved seeds, commercial fertilizers and pesticides; • Capacity enhancement of farmers; • Application of good agricultural practices; • Provision of spate irrigation facilities.	Kg	18
Pearl Millet	2.5	8 (rain-fed); 15 (spate)	• Provision of improved seeds, commercial fertilizers and pesticides; • Capacity enhancement of farmers; • Application of good agricultural practices; • Provision of spate irrigation facilities.	Kg	20
Tomatoes	150	200	• Provision of improved seeds, commercial fertilizers and pesticides; • Capacity enhancement of farmers; • Application of good agricultural practices.	Kg	20
Onions	350	450	• Provision of improved seeds, commercial fertilizers and pesticides; • Capacity enhancement of farmers; • Application of good agricultural practices.	Kg	25
Pepper	100	150	• Provision of improved seeds, commercial fertilizers and pesticides; • Capacity enhancement of farmers; • Application of good agricultural practices.	Kg	60
Cow Milk	3 Litres/cow/day	8 Litres/cow/day	• Improved breeds of dairy cows; • Animal health services; • Increased availability animal feed.	Litre	30
Eggs	7 eggs/hen/month	15 eggs/hen/month	• Improved breeds of chicks; • Animal health services.	egg	6 to 7

Agricultural models

17- One of the objectives of the project is to promote diversification both livelihood portfolios and food consumption. As such, the project will promote a shift from sole cropping to mixed cropping whereby crops will be grown in the same season but will receive different allocations of the agricultural land. The reduction in the land allocations to the crop that was

originally grown on the land (e,g sorghum) will result in a fall in its production. In the following years, production will increase and keep rising up to year three where it will have reached maximum. Thereafter, the level of output will remain unchanged. However, the new levels of production will remain lower than the before project scenario. Nevertheless, the fall in the output of this crop will be more than compensated by the rise (from zero) in the production of the other crop (e.g mung beans). Hence, mixed cropping will involve a trade-off between the two crops. This trade-off is necessary because it will contribute towards promoting dietary diversity in the targeted areas as well as diversification of agricultural portfolios.

Agro ecological zone 1: Arid and semiarid Lowland

18- The first agricultural model displays **one hectare of sorghum cultivation intercropped with mug bean** (65 per cent sorghum /35 per cent mung bean) **under rainfed**. The initial investment costs for the watershed treatment works per hectare is US$ 200. The sorghum productivity will increase from 519 kg/year WOP situation to 1.09 tons/ha in year five; for mung bean from 430 kg/year in year one to 602 kg/year in year five. The inputs such as seeds, compost and tools represent only 62% of the total operational costs and the other 21% represents labour costs such as land preparation, harvesting, etc. the remaining 17% is investment costs. The benefit/cost ratio is larger than one, exactly 1.11. This model shows an internal rate of returns of 105 % and a NPV of US$ 1,920.

Agro ecological zone 2: Moist -Lowlands (part of Gash-Barka)

19- The project will support spate irrigation with an initial investment cost of US$ 2,000 per hectare. The second agricultural model shows **one hectare of sorghum cultivation intercropped with mug bean** (60 per cent sorghum /40 per cent mung bean) **under spate irrigation**. The sorghum productivity will increase from 519 kg/year WOP situation to 1.3 tons/ha in year five; for mung bean from 430 kg/year in year one to 602 kg/year in year five. The inputs such as seeds, compost and other agricultural tools represent 75% of the total operational costs and the remaining 25% represents labor costs such as land preparation, manure application, harvesting, etc. The benefit/cost ratio is slightly below of one, exactly 0.90. This model shows an internal rate of returns of 17% and a NPV of US$ 677.

20- The following model shows **one hectare of finger millet production intercropped with pulses (chickpeas)** (two thirds of finger millet /one third of chickpeas) **under spate irrigation**. The investment cost for the spate irrigation construction is US$ 2,000 per hectare. The average finger miller yield will be 333 kg/ha in WOP situation to 966 kg/ha for the fifth year, remaining stable for the rest of project life; for chickpeas from 449 kg/year in year one to 629 kg/year in year five. The inputs such as seeds, compost, bio-pesticides and other agricultural tools represent only 75% of the total operational costs and the other 25% represents labor costs such as land preparation, manure application, harvesting, etc. The benefit/cost ratio for this model is slightly larger than one. This model displays an internal rate of returns of 28% and a NPV of US$ 1,751.

21- The fourth model presents **one hectare of sesame cultivation under spate irrigation**. The initial investment cost for the spate irrigation construction is US$ 2,000 per hectare. The sesame yield will increase from 200 kg/ha in WOP situation to 660 kg/ha. The inputs such as seeds and bags represent only 74 per cent of the total operational costs and the other 26 per cent represents labor costs such as land preparation, harvesting, etc. The benefit/cost ratio is larger than one, exactly 1.07. The model shows an internal rate of returns of 23% and a NPV of US$ 1,268.

Agro ecological zone 3: moist- Lowlands (part of Gash-Barka) perennial river and shallow water availability

22- The fifth model shows **one hectare of finger millet with intercrop with pulses (chickpeas) under wells irrigation**. The initial investment costs for wells construction is about US$ 5,000 per hectare. The model represents (50 per cent finger millet /50 per cent chickpeas) and the average finger miller yield will be 333 kg/ha in WOP situation to 966 kg/ha for the fifth year, remaining stable for the rest of project life; for chickpeas from 449 kg/year in year one to 629 kg/year in year five. The inputs such as seeds, compost, bio-pesticides and other agricultural tools represent only 75 per cent of the total operational costs and the other 25 per cent represents labor costs such as land preparation, manure application, harvesting, etc. The benefit/cost ratio for this model is slightly minor than one. This model displays an internal rate of returns of 10% and a NPV of US$ 20.

23- The sixth presents **one hectare of sesame cultivation with horticulture production during dry season under wells irrigation**. The investment costs per hectare for constructing the shallow /wells is US$ 5,000. The sesame yield will increase from 200 kg/ha in WOP situation to 660 kg/ha. Horticulture will be a new cultivation in WP situation. The yields for horticulture will reach at year five 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds compost, sacks, etc. represent 87 per cent of the total operational costs and the other 13 per cent represents labor. The benefit/cost ratio is larger than one, exactly 1.59. The model shows an internal rate of returns of 74% and a NPV of US$ 13,518.

Agro ecological zone 4: Highlands

24- The project will support as well the construction of small-scale surface irrigation; the initial investment cost per hectare is US$ 7,000.The seventh model displays **one hectare of irrigated horticulture production surrounded by elephant grass**. The yield will increase from 1 cycle to 3 cycle in horticulture, reaching at year five 10 tons/ha for elephant grass; 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds, compost represent only 87 per cent of the total operational costs and the other 13 per cent represents labor costs. The benefit/cost ratio is larger than one, exactly 1.16. The model shows an internal rate of returns of 25% and a NPV of US$ 4,414.

25- The eighth model displays **one hectare of wheat cultivation during rainy season and irrigated horticulture production during dry season under small-scale irrigation**. The productivity for wheat will increase from 1 ton/ha in WOP situation to 1.6 tons/ha in year five. The horticulture will be a new cultivation in WP situation. The yields for horticulture will reach at year five 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds, compost represent only 87 per cent of the total operational costs and the other 13 per cent represents labor costs. The investment cost per one hectare is US$ 7,000. The benefit/cost ratio is larger than one, exactly 1.45. The model shows an internal rate of returns of 51% and a NPV of US$ 11,561.

Agro ecological zone 5: Midlands

26- The ninth model represents **one hectare of sorghum intercropped with desmodium and elephant grass (push-pull system) under small-scale irrigation**. The push-pull system consists of one line of sorghum intercropped with other line of desmodium surrounded by elephant grass. This system increases productivities, improves soil conservation by reducing erosion and evapotranspiration plus fixing nitrogen and pest control (armyworm and reducing striga presence). This model represents (70 per cent sorghum /20 per cent desmodium / 10 elephant grass) and the average sorghum productivity will be 519 kg/ha in WOP situation to 1.24 tons/ha for the fifth year, remaining stable for the rest of project life. The yield for desmodium will reach 8 tons/ha and for elephant grass 10 tons/ha. The inputs such as seeds, compost, bio-pesticides and other agricultural tools represent 75 per cent of the total operational costs and the other 25 per cent represents labor costs such as land preparation, manure application, harvesting, etc. The investment cost per one hectare is US$ 7,000. The benefit/cost ratio is greater than one, exactly 1.30. The model shows an internal rate of returns of 31% and a NPV of US$ 4,810.

27- The tenth model displays **one hectare of irrigated horticulture production under drip irrigation**. The horticulture will be a piloting activity with an initial investment cost per hectare of US$ 10,000 to build the infrastructure for drip irrigation. The yields for horticulture will reach at year five 16 tons/ha for tomato; 5 tons/ha for pepper; 15 tons/ha for potato; 11 tons/ha for onion; and 18 tons/ha for cabbage. The inputs such as seeds, compost represent only 87 per cent of the total operational costs and the other 13 per cent represents labor costs. The benefit/cost ratio is equal to one. The model shows an internal rate of returns of 12% and a NPV of US$ 714.

Agri-business and Small and Medium Enterprises (SMEs) models

28- This **first model**[5] presents a *berbere* processing unit run by women. *Berbere* is a chili pepper and a spice mixture used to season many Eritrean dishes. Women usually process *berbere* without any protection for their health, part of the initial investment covers gloves and masks to prevent the harmful vapor coming from processing chili. The chili smell that is released while women are processing it can cause cough and irritation while breathing. All the machine and equipment needed is estimated at US$ 3,800. The full capacity of the unit is equal to 500 kg per month, reaching the full capacity at year five. The losses decrease from 20 percent to 10 per cent during year five. The only source of income is the sales of *berbere*. About 65 per cent of the total operational costs represents the purchase of chili peppers, paprika, salt, onion powder, cardamom, coriander, nutmeg, garlic powder, clover and cinnamon, all the ingredients needed to process the *berbere*. The number of personnel involved in this processing unit is one manager/accountant, one supervisor, five operators, and one cleaner. The benefit/cost ratio is slightly greater than one. The model displays an internal rate of return of 42.5% and a NPV of US$ 20,800.

29- The **second model** represents a sedentary **beekeeper** passing from two traditional beehives to five modern beehives (Langstroth) producing 30 kg of honey per year. In the without project (WOP) situation, the traditional beehives have a lower cost and productivity (15 kg per hive). Beekeeping is a substantial agricultural activity in Eritrea and can offer income and food to poor households, particularly to those with limited access to land. The limited use of fertilizers and low pollution represents an appropriate environment for

[5] *Berbere* recipe has been extracted from field visits and costs have been shared by Eritrea FAO Office

developing this activity. However, due to diversity in climate conditions along the country, apiculture cannot be a profitable activity in many areas of the national territory. In this model, losses decreases from 12 per cent for WOP to 10 per cent in year one reaching 3 per cent in year five With Project (WP). About 65 per cent of the total operational costs represents feed for dry season and maintenance and the remaining 35% is labor cost. The initial investment and equipment needed are estimated at US$ 2,000. The benefit/cost ratio is equal 1.49. The model shows an internal rate of return of 72.1% and a NPV of about US$ 3,441.

30- The **third model** shows a migratory **beekeeper** with ten modern beehives (Langstroth) producing annually 30 kg of honey. Migratory beekeeping consists in moving the modern beehives twice a year, having one season in the highlands (April-October) and another season in the north-east lowlands (December-April), searching for enough water and flowers for the colonies. Youth can be easily engaged in this activity, mainly commercial due to its high transportation costs, about 22 per cent of the total operational costs, and 48 per cent represents feed and maintenance and the remaining 30 per cent is labor cost. In this model, losses decreases from 10 per cent in year one reaching 3 per cent in year five. The initial investment and equipment needed are estimated at US$ 3,550. The benefit/cost ratio is equal 1.30. The model shows an internal rate of return of 33.9% and a NPV of about US$ 5,019.

31- The **next model** illustrates an off-farm activity, a **small tool manufacturer workshop**. The workshop will increase the quality of local construction of innovate tools and it represents an attractive income generating activity for creating employment among the youth. The model needs an initial investment of around US$ 57,332 to equip the workshop and purchase machines. During the first year of the business it is supposed to be run at half capacity, reaching full capacity in the fifth year. The workshop manufactures different products made of wood and metal. 60 per cent of the production are agricultural products like wheelbarrows, hoes, plough, and non-till planter, representing 60 per cent of the total production. The remaining 40 per cent is for non-agricultural products such as windows and desks. The personnel employed in this workshop is one manager/supervisor and four operator. The benefit/cost ratio is 1.5. The model records an internal rate of return of 80.4% and a NPV of US$ 264,014.

32- The **fifth model** illustrates a **group of young people providing agricultural service to smallholder farmers**. Eritrean agriculture is labor intensive, principally during weeding, threshing and harvesting. The introduction of agricultural small tools can reduce time, losses and increase quality. These small tools cannot be affordable for most of the smallholder famers hence this is an opportunity for youth to become agricultural service providers. This agricultural service provider is operational for 6 months a year with the exception of transportation, which runs in average of 25 working days per month annually. This model includes one manager/supervisor and four operators. The investment of US$ 3,105 to purchase mini thresher, wheat cutter, manual ripper, donkey cart and donkeys. The group of youth provides different services such as weeding, threshing, harvesting and transporting. The annual agricultural services are estimated at 15 ha for weeding, 25 ha for threshing and 15 ha for weeding. The benefit/cost ratio is slightly larger than one. The model records an internal rate of return of 37.9% and a NPV of US$ 2,844.

33- The **sixth model** represents a **small-scale sesame oil processor**[6], with capacity from 49,000 liters to 70,000 liter/day at full development, reaching its full development in year fifth at 63,000 liter per day. Demand of sesame oil is rising rapidly in Eritrea but due to a scarcity of processing at national level, the consumption is mainly relying on imported sesame oil. The plant is processing and commercializing sesame oil and sesame cake. The sesame cake contains high level of proteins very valuable for feeding animals and sesame oil represents a much healthier option than imported palm oil at the household consumption. The proposed initial investment is about US$ 105,000 to equip the plant with a sesame-cleaning machine, sesame oil press, truck, other equipment, generator and the building. The personnel hired for running this business is one manager/accountant, one supervisor, eleven operators, one cleaner and one security guard. The model is very sensitive to fluctuations in raw sesame seeds price, purchase of raw sesame seeds represents about the 77 per cent of the operational costs. The benefit/cost ratio is slightly larger than one. The model presents an internal rate of return of 33.0% and a NPV of US$ 130,625 million.

34- The **seventh model** depicts a medium scale **Milk Processing Plant**[7], with capacity from 1,000 liters to 3,000 liter/day at full development, reaching its full development in year four at 2,500 liter per day. The plant is processing milk, selling pasteurized milk. The proposed initial investment is about US$ 156,100 where pasteurizer, homogenizer, equipment for cooling and generator will be adopted in order to overcome the lack of access to electricity and frequent power cuts. The building cost is estimated at 4.2 million of Nafka (equivalent to US$ 278,515). The personnel hired in this milk processing plant is one manager/accountant, one supervisor, one driver, ten operators, one cleaner and one security guard. The model is very sensitive to fluctuations in raw milk price, purchase of raw milk represents about 70% of the operational costs. The benefit/cost ratio is equal to 1.26. The model presents an internal rate of return of 78.1% and a NPV of US$ 2.28 million.

35- **Financial models.** The project net cash flows are based on the incremental approach, which results from comparing the With Project Situation and Without Project situations[8]. The financial models have been calculated at 10% discount rate. The below table summarizes the models as well as their financial performance.

[6] Source: Ethiopia: "Sesame sector investment opportunity brief - sesame oil", plus field visits.

[7] Field Visits during Pre-appraisal mission, November 2019.

[8] IFAD, 2015, Economic and Financial analysis of rural investment projects, basic concepts and rationale

Table 2: Summary of the financial models

	unit	FIRR	NPV (10%, Nakfa)	NPV (10%, US$ '000)	B/C ratio
Agricultural models / indicative cropping patterns					
1. Sorghum (0.65 ha) and Mung Bean (0.35) - rainfed	ha	22%	5,298	351	1.11
2. Sorghum (0.6) and Mung Bean (0.4) on the other - irrigated	ha	-8%	-22,975	-1,524	0.90
3. Finger Millet (0.7) with chickpeas (0.3) - irrigation (Agro-ecological zone 2)	ha	77%	110,183	7,307	2.23
4. Irrigated sesame	ha	44%	54,765	3,632	1.61
5. Finger Millet intercrop with chickpeas - irrigation (Agro-ecological zone 3)	ha	27%	57,775	3,831	1.43
6. Sesame with irrigated horticulture production	ha	148%	377,142	25,009	2.28
7. Irrigated Horticulture production with Elephant Grass	ha	16%	26,228	1,739	1.16
8. Wheat production with irrigated horticulture production	ha	54%	192,116	12,740	1.60
9. Sorghum intercrop with Desmodium and Elephant Grass -Push-pull system	ha	24%	46,352	3,074	1.32
10. Irrigated Horticulture production under drip irrigation (pilot)	ha	5%	-30,306	-2,010	1.00
Agri-business and small-medium enterprises (SME) models					
1. Berbere Processing Unit	processor	43%	313,662	20,800	1.05
3. Sedentary Beekeeping	beekeepers	72%	51,886	3,441	1.49
4. Migratory Beekeeping	beekeepers	34%	75,692	5,019	1.30
5. Small Tool Manufacturer	workshop	80%	3,981,331	264,014	1.50
6. Service Provider	SME	38%	42,893	2,844	1.03
7. Sesame Oil Processing Unit	processor	33%	1,969,828	130,625	1.05
8.Dairy Processing Unit	processor	78%	34,483,351	2,286,694	1.26
Other beneficiary households (from Poultry, ruminants, Efficient cook stoves, Catchment treatment/ afforestration, Vaccination campaigns/ Animal health					

36- **Household capacity to finance Incremental Production Costs**: The financial sector in Eritrea is not well developed in terms of outreach to provide opportunities for the beneficiaries to access micro-loans to finance crop and livestock inputs. On a positive note the Ministry of Agriculture (MoA) has successfully, over the years, implemented an "in-kind" revolving scheme to support first cycle beneficiary farmers. Under this scheme, first cycle beneficiary farmers usually receive inputs on a revolving. For Livestock there is a successful pass-on scheme that is implemented. The scheme is devolved up to sub-zoba level. Under this scheme, first cycle beneficiary farmers are charged a reasonable ratio of their harvest. The scheme has been successful and has even remitted excess funds into the consolidated fund.

37- The revolving fund schemes in the Ministry of Agriculture and the Credit Support Unit in the Ministry of Marine Resources have been quite instrumental in providing the small-scale target beneficiaries with access to inputs as and when needed.

D. Economic analysis

Assumptions

38- **Economic prices.** In line with estimates from The Economist Intelligence Unit (EIU), the official exchange rate has been pegged to the dollar at Nakfa (Nfa) 15.08 since December 2016. It is unlikely that the currency peg would be replaced by a free-floating exchange rate. Financial prices have been converted to economic by applying the following Conversion Factors (CF). For non-tradable goods, a CF of one was used since they are generally purchased at local level, without significant tax distortions. For labor, the opportunity cost conversion factor is 0.93[9]. For the tradeable goods, the Standard Conversion Factor (SCF) has been applied (0.97).

[9] Source: Trading Economics (January 2020), rural unemployment rate is equal to 6.7% in 2016

Table 3: Summary of conversion factors

Item	Discount factor
Labour	0.93
Tradeable goods and equipment	0.97
Non-tradeable goods	1.00

39- The analysis also estimated the Shadow Exchange Rate (SER) of 15.08 Nfa per US$ 1 and a Standard Conversion Factor of 0.97, based on World Bank (WDI) data on imports and exports and import and export duties and taxes, using the following formula:

$$SER = OER \cdot \frac{[(M + Tm) + (X - Tx)]}{(M + X)}$$

Where SER is the reference exchange rate,

OER the official exchange rate,

M the volume of imports,

Tm the rate of customs duties on imports,

X the volume of exports,

Tx the rate of taxes on exports.

40- All models are expressed in 2019 constant prices. The analysis builds on primary data collected by the pre-design team during the mission in November 2019, with the support of the Ministry of Agriculture and Ministry of Finance of Eritrea. In addition, data was collected also from other on-going projects from IFAD and FAO. Conservative assumptions and parameters have been applied, in order to avoid over-estimation of benefits and provide realistic results.

41- **Social discount rate.** In conformity with the World Bank Technical Note on Discounting Cost and Benefits in Economic Analysis, a 6% discount rate have been used to reflect the social opportunity cost of capital in Eritrea10. This discount rate has been applied in order to calculate the economic NPV and future net incremental benefits.

Results

42- The period of analysis is 20 years to account for the phasing and gestation of the proposed interventions. Economic benefits from the farm and enterprise models have been aggregated using average incremental net benefits and beneficiaries for each agricultural and agri-business and off-farm activities under the project interventions and assuming different adoption rates, extracted from the costing exercise. Economic benefits from enterprise models have been aggregated using an expected number of small enterprises to be supported by the project and for the agricultural models for the number of hectares. Benefits are phased-in progressively for all types of interventions.

[10] Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects (WB, 2016)

43- Economic costs associated with improving productivity and agri-business and small and medium enterprises were estimated at US$ 64.36 million and calculated by the removal of all project contributions included in the models (agricultural works investment, initial support kits, processing unit packages for initial investments, etc.). The economic costs have then been deducted from the overall economic benefit stream to obtain the project's net incremental benefit stream. The economic analysis shows satisfactory results, with a Net Present Value at US$ 46.12 million and a 19.08% Economic Internal Rate of Return (EIRR), suggesting that the overall project is economically profitable. These preliminary results will be fine-tuned at the design mission.

Table 3: Results of the economic analysis

Base scenario	EIRR	NPV%,20 years (million US$)
Base case	19 %	58.54

44- **Sensitivity analysis**. Results were tested for sensitivity to variations in benefits and costs and for various lags in the realization of benefits. A delay of 2 years in the generation of benefits or a decline of 30% relative to the base scenario would reduce the EIRR to 13.7% and 13.2% respectively, substantially above the discount rate. Cost overruns would have very moderate impact, with EIRR falling to 14.8% with a 30% increase. An adoption rate of 70% would decrease the EIRR to 13.2%. All scenarios show robust results under all hypothetical scenarios.

Table 4: Results of the sensitivity analysis

Modelling scenario	EIRR	NPV (million US$)
Base scenario		
Base case	18.6%	58.54
By 1 year (E.g due to weather related risks or pandemics like Covid 19)		
By 2 years (E.g due to weather related risks or pandemics like Covid 19)	16.6%	50.49
By 2 years	14.8%	41.73
Decrease of benefits		
By 10 % (E.g due to weather related risks or pandemics like Covid 19)	17.4%	50.00
By 20 % (E.g due to weather related risks or pandemics like Covid 19)	16.1%	41.46
By 30 % (E.g due to weather related risks or pandemics like Covid 19)	14.6%	32.92
Increase of benefits		
By 10 %	19.6%	67.07
By 20 %	20.6%	75.61
Increase of costs		
By 10 %	17.5%	55.85
By 20 %	16.5%	53.17
By 30 %	15.6%	50.48
Adoption rate		
90%	17.4%	41.73
80%	16.1%	41.46
70%	14.6%	32.92

Details of the investments under IADP

Eritrea										
Integrated Agriculture Development Project										
Total Investments										
					Quantities				Unit Cost	
	Unit	2021	2022	2023	2024	2025	2026	Total	(USD)	Total
1. Improved soil and water conservation and watershed management										
Carrying out inventory to select intervention watersheds or spates /a	lumpsum	10	-	-	-	-	-	10	13,500	139,766
Mapping, intervention planning and detailed design for 161 sites /b	lumpsum	40	71	50	-	-	-	161	100,00	17,204
2. Watershed Committees and irrigation WUAs formation/strengthening and capacity building										
Training of trainers (ToTs) /a	lumpsum	12	-	-	-	-	-	12	300	3,727
Training on participatory planning for 10 new watersheds	participant	100	-	-	-	-	-	100	200	20,706
Training in ag. water management and infrastructure O&M /b	participant	-	50	100	72	-	-	222	200	48,921
Exchange visits for irrigators /c	participant	-	-	52	-	-	-	52	1.500	85,671
3. Implementation process and technical assitance (TA)										
Consultancies for an International Senior Irrigation and Rural Infrastructure Engineer /d	Person/month	12	12	6	6	2	-	38	12.000	491,139
4. Improved soil and water conservation and watershed management										
Hillside closure and afforestation /a	ha	-	2,000	6,000	2,000	-	-	10,000	100	1,238,552
Hillside physical SWC (micro-terraces, detention ponds, bunds, etc.) /b	ha	-	2,000	6,000	2,000	-	-	10,000	200	2,477,104
Gully remediation check dams (gabion) /c	m3	-	1,000	1,500	1,500	-	-	4,000	200	994,600
Groundwater recharge check dams (masonry) /d	m3	-	1,500	3,000	2,500	-	-	7,000	300	2,612,137
5. Small-scale irrigation development										
Upgrading existing micro-dams /e	dam	-	2	4	4	-	-	10	50.000	622,991
Construction of new micro-dams /f	dams	-	1	2	2	1	-	6	300.000	2,263,098
Shallow (tube) wells /g	ha	-	40	160	200	100	-	500	5.000	3,163,483
Small-scale surface irrigation /h	ha	-	20	40	70	30	-	160	7.000	1,415,927
Pilot/adaptation of 5ha drip irrigation	ha	-	-	5	-	-	-	5	10.000	61,917
Upgrading of existing spate irrigation /i	ha	-	-	250	500	500	-	1,250	2.000	3,208,404
Water supply /j	dam	-	2	5	6	3	-	16	10.000	201,904
6. Advisory services support										
1. Farmers Field School Programme Support										
a. Master Trainers Course										
MT from East Africa /a	month	30	-	2	-	-	-	32	10.000	332,557
Extensionist MoA- Zobas, allowance /b	month	240	-	50	-	-	-	290	100	30,339
Development of curricula, translation of adapted training material and printing /c	lumpsum	1	-	-	-	-	-	1	6.000	6,212
Study field- FFS for MT training /d	FFS	10	-	-	-	-	-	10	500	5,177
Bicycle per MT	unit	30	-	-	-	-	-	30	450	13,977
Exchanges visits/ FFS participation workshops	Lumpsum	-	-	-	0.5	0.25	0.25	1	50.000	57,850
b. Training of Facilitators										
Printing training material /e	printing material	112	168	112	168	112	18	690	20	15,206
Study field /f	FFS/AFS	112	-	-	-	-	-	112	500	57,977
Bicycle per facilitator	unit	-	75	200	200	120	-	595	450	299,581
c. FFS Implementation										
Preparatory phase meetings /g	unit	-	168	112	168	112	18	578	100	64,433
FFS and AFS /h	FFS	-	168	112	168	112	18	578	700	451,033
In-kind farmers' contribution /i	ha	-	-	-	-	-	-	-		-
7. Animal health services										
1. Para-vet service development										
Organization and developing training modules	Lumpsum	1	-	-	-	-	-	1	8.000	8,282
Starting kit	kit	100	250	250	100	-	-	700	300	227,351
Para-vet intense trainings and refresh trainings /j	unit	100	250	250	450	-	-	1,050	333	384,213
Bicycles	unit	640	960	-	-	-	-	1,600	450	758,833
Mastitis kit	kit	100	250	250	100	-	-	700	20	15,157

Investing in rural people

Eritrea

Integrated Agriculture Development Project

Project Design Report

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

Mission Dates:	8 to 30 June 2020
Document Date:	05/10/2020
Project No.	2000002081
Report No.	5444-ER

East and Southern Africa Division
Programme Management Department

PDR Annex III Social Environment and Climate Assessment

SECAP Review Note outline

1. **Introduction**
2. **Situational analysis and potential project impacts**
   - 2.1 Socio-economic assessment
     - a. Overall poverty situation
     - b. Gender
     - c. Youth
     - d. Indigenous peoples
     - e. People living with disabilities
     - f. Nutrition
   - 2.2 Environment and climate context, trends and implications
     - a. Environmental assessment
     - b. Climate trends and impacts
     - c. Climate change mitigation
   - 2.3 Target group profiles
3. **Institutional analysis**
4. **Environmental and social category, FPIC, Stakeholder Engagement and Grievance Redress Mechanism**
5. **Climate risk category**
6. **Recommendations for project design and implementation**
7. **Further studies needed**
8. **Monitoring and evaluation**)
9. **References**

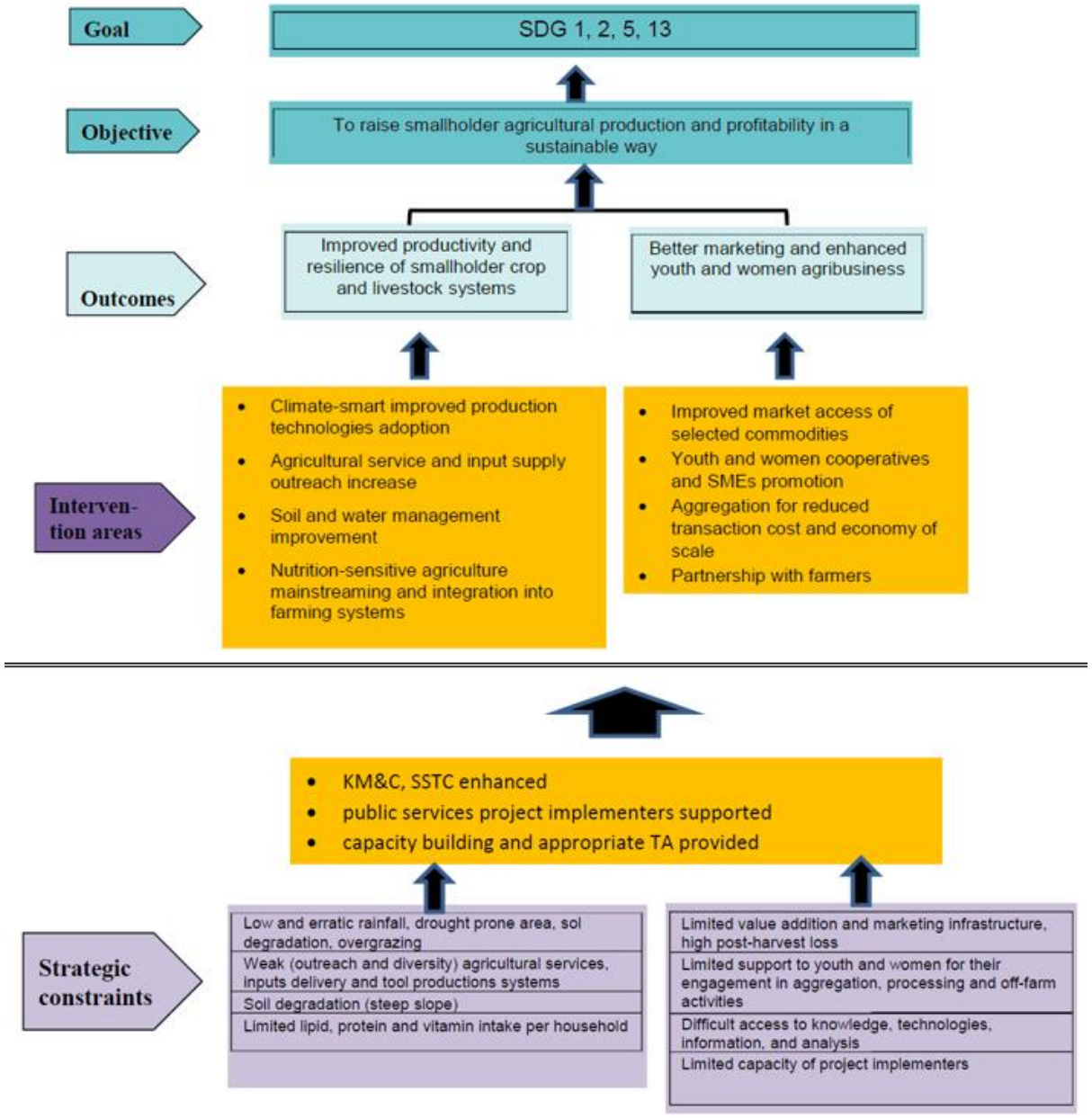
1. Introduction

1. This annex is the SECAP Review note that will be completed and fine-tuned over the project design finalization process. It is focussed on the characterization of the social and environmental and climate contexts in so far as they affect project choices, in particular geographical and social targeting, mainstreaming opportunities and to a lesser extent safeguards risks. Safeguards risks and the projects plan to address these risks are detailed in the draft ESMF. This Review Note was prepared on the basis of the earlier SECAP annex for the COSOP, findings of a mission to Eritrea, inputs from a review by social inclusion team colleagues, a climate analysis undertaken via the IFAD-WFP Climate Analysis Partnership (see separated Detailed Climate Analysis, under preparation), taking into account also QAG comments / OSC guidance. It has also benefited from the preparation by ECG of a country mainstreaming profile for Eritrea. A crop impact projection based on downscaled climate models of climate change related changes in the water balance in the highland and lowland agro-ecological zones is also featured here using the IFAD developed CARD tool, which should be taken into account in final selection of crops and water management systems.

2. Data availability is definitely a constraint in Eritrea in terms of completeness, currency and detail. Hence this Review Note provides a useful summary of the available data sources. It is complemented, in response to OSC guidance, by a Youth Engagement/Employment Strategy paper for the country, currently under preparation by ECG. In light of the parallel set of documents under preparation, this Note can and should be updated and should also be considered a living document of use to the Country Team and Project Management Unit. The SECAP Review Note has value both as a stand alone document with a focus on the assessment of targeting and mainstreaming

opportunities as well as being part of a the package of documents collectively comprising the design. In this regard it should be read in particular in conjunction with the ESMF, the Youth Strategy for Eritrea and parts of the PIM, in particular on the proposed Environmental Information System for land use planning and M&E.

3. The project theory of change is represented graphically below as Figure 1:



2. Situational analysis and potential project impacts

4. **Programming context**: For several decades, Eritrea diverted from its development path due to 20-years of war followed by the 'no-war no-peace situation' and 10 years of international sanctions. This situation normalized when Eritrea and Ethiopia signed a peace agreement on the 9th of July 2018, and the United Nations Security Council lifted sanctions in November 2018. The peace dividend offers Eritrea

opportunities to reallocate public resources to its economic and social development, to create jobs for youth and demobilized soldiers and to enhance international cooperation.

5. **Development Challenges**: Rain-fed agriculture is the predominant economic activity employing about two thirds of the population, with scarce yearly rainfall. Traditional farm holdings are typically one to two hectares with one cropping season, affected by highly variable climatic conditions and environmental degradation. Cereals include barley, wheat, teff, sorghum and millet in the highlands, and millet and sorghum in the lowlands. Livestock is an important sector given the fact that 49 per cent of the total land area is suitable for grazing whereas only 17 per cent is suitable for cropping. Llivestock includes cattle, dairy cows, small ruminants, poultry, rabbits, and beekeeping.

6. Crop and livestock productivity is below the potential yields, because of low and erratic rainfall and recurrent droughts; limited soil fertility and land degradation; weak agricultural services and limited outreach; poor access to modern inputs; inadequate technical skills. Notwithstanding these limitations, there are opportunities for agricultural development based on adoption of proven and affordable technologies, production and distribution of improved seeds, expanded and improved irrigation, innovative approaches to soil and water management and promotion of sustainable natural resource management.

7. **Dimensions of vulnerability** include climate change and environmental degradation, which are further detailed at various points in this SECAP, as well as social discrimination which could be a result of cultural factors, meaning that women and youth may have less access to land, finances, inputs and opportunities. Access to land and animal draught power may also be strongly influenced by cultural norms and practices. This is particularly important given the low level of mechanization. The time burden for women in particular to collect water should not be overlooked, as well as fuelwood. There is good reason to believe that in rural Eritrea there is an environment (water, fuel) – women – nutrition nexus, all exacerbated by climate change.

8. **Government policy response to the development challenges**: To move from subsistence to market-oriented farming, the Ministry of Agriculture (MoA) prioritizes irrigated agriculture and horticulture along rivers and downstream of dams, combined with watershed management and conservation. Access to irrigation (typically 0.1 – 0.25 ha per household) allows having two or three cropping seasons and producing surpluses for the market. The MoA also promotes cooperatives for marketing of produce and input supply, although a few private intermediaries exist. The MoA encourages an agribusiness approach based on cooperative principles to link farmers to input and output markets, while the private enterprises have a very limited role in the agribusiness sector.

9. **Project design as a response to these challenges**: The IADP planned activities are aimed at addressing/mitigating the identified constraints in a manner that is cognizant of the need to conserve the environment amidst the vagaries of climate change. In addition to addressing the access limitations (access to irrigation facilities, improved seeds, fertilisers) capacity building of all stakeholders (farmers, government implementing agencies, service providers) will contribute to the achievement of the target objective and to sustaining the achievements made. The enhancement of the project implementers' capacity would not only enable public institutions to effectively deliver tailored services, according to farmers' specific needs, but would also provide framework and incentives to the private sector investment for the project spillover effects. Limiting the losses due to poor postharvest handling will be critical to ensuring that the target beneficiaries, once they are able to satisfy household food demand, would be able to have some extra for the market. When successfully done, this will result in improved food, nutrition and income security of the IADP target beneficiaries

2.1 Socio-economic and nutritional assessment

10. **Overall poverty situation and dynamics** Poverty in Eritrea has many underlying causes. The economy is one of the poorest performing; according to a recent estimate, a third of the nation's GDP is comprised of remittances from Eritreans living abroad (Callender, 2017). Agriculture has under-performed, also leading to poverty. About two thirds of households are impacted by food insecurity, with most of the threat in rural areas, particularly isolated regions (Callender, 2017). Finally, limited access to education has contributed to poverty - with one of the lowest primary enrolments in the world with just over an estimated 33 per cent (2017 figures) (Callender, 2017). However, a study in Zoba Meakel by Bahta and Haile (2013) found that determinants of poverty also included: number of family members, number of children, children at school age, and rent of land of household head is statistically significant and positively related to household's poverty.

11. **Dependency ratio**: As noted above, family size is directly related to poverty status. Extreme poor households tend to have larger families; in a study from 2003, these averaged 6.1 persons compared to the non-poor which averaged 4.2 (State of Eritrea, 2004).

12. **Local responses to poverty:** A 2006 report by IFAD indicated that rural communities across the country have coping strategies in place to protect the poor. In times of stress, wealthier households dispose of assets, mainly livestock, to provide loans to poorer relatives and neighbours. In times of duress, people also make use of labour-sharing including throughout the agricultural cycle where wealthier adults will assist households unable to cultivate land (IFAD, 2006). IADP interventions should be designed to mitigate negative coping strategies and provide alternative ones which address root problems which fall within the scope of intervention.

13. **Food and nutrition security**. Eritrea faces severe food and nutrition security challenges, due to frequent droughts and high dependence on rainfed agriculture. Eritrea has one of Africa's highest level of food insecurity, a current low adaptive capacity and a fragile environment. By virtue of its location in the Sahel, Eritrea suffers periodic droughts and chronic food shortages hampering development efforts.

14. Even in times of good rainfall, domestic food production is estimated to meet 60-70% of the population's needs. The value of imports in 2017 amounted to US$ 396 million, of which 40.3% are food products (mainly wheat, pasta and soybean. There is potential for export of livestock products in particular, especially to the Middle East. Access to improved water source increased from 23 per cent in 1995 to 57.9 per cent in 2010.

15. **Nutrition.** According to WHO (2014), malnutrition, in particular of youth and women, is one of the greatest public health problems of Eritrea. The malnutrition situation among the under five-year old children portrayed severe burden of stunting (50.3 per cent) underweight (38.8 per cent), and wasting (15.3 per cent) with the prevalence of wasting in children under 5 years is 17.1 per cent in rural areas compared to 11 per cent in urban areas. Further, 38.1 per cent of women of reproductive age have anaemia, and 6 per cent of adult men and 5 per cent of women have diabetes while 7.6 per cent of women and 2 per cent of men have obesity (Global Nutrition Report, 2019). Causes are the chronic failure to receive sufficient and diversified nutrition, including micronutrient deficiency. Eritrea also scored poorly (33.8) on the Global Hunger Index in 2014.

16. Specific and targeted interventions are being considered in IFADs work in the country to address these via project interventions as well as through policy engagement if possible. This should be based on specific information related, for example, to nutrition and food security. These needs would have to be further discriminated in terms of locality (which can be influenced for example by local soil nutrient deficiencies, market

access of nutritious food, purchasing power of different groups, dietary preferences, range of production possible, patterns by gender and age). This will also vary between agriculturalists, agro-pastoralists and pastoralists. In short different nutritional pathways may vary according to context and target group.

17. **Gender empowerment and Gender Based Violence.** Women constitute 55% of Eritrea's population and they head 47.2% of all households (EPHS , 2010). Women have been key players in Eritrea's nation building process, from their invaluable participation in the country's independence struggle to their ongoing contributions to the development agenda led by the National Union of Eritrean Women (NUEW). Inspired by this powerful legacy, the Government of the State of Eritrea has made the empowerment of women a national priority, and committed to a development agenda grounded in social justice and gender equality.

18. Violence against women and girls is widespread, both in the domestic sphere and in the context of the mandatory National Service (OECD, 2019). The militarization of society through conscription is an underlying structural cause of the acceptance of violence in society, particularly against women (OECD, 2019). Gender based violence (GBV) takes many forms in Eritrea. Forced early marriage is still common in rural areas even though the legal age of marriage has been set at 18 years. Domestic violence is not systematically reported, leaving prevalence rates unknown. Female Genital Mutilation (FGM) is a serious problem in Eritrea, affecting 89% of all women[1].

19. **Women and Health Trends in Eritrea** There have been significant improvements in health, in particular for children and child bearing women, between 2000 and 2015. This can be seen from the Figure 7: Mortality per 1,000 live births (IFAD GeoSpatial Support Unit, based on IHME 2015). There have been major improvements and these improvements have been relatively well distributed across the country. In addition, as can be seen from Figure 8, orange line, birth rates per young (15-19) women has declined over the same period and is now approaching the average for middle income counties. This is typically associated with higher 'agency' for women. Finally, as can be seen from Table 2, life expectancy of both women and men has improved over the same period, as well as the under 5 mortality rate.

20. **Gender and Land ownership:** The TCCE and the 1994 Land Proclamation No.58/1994 (Article 4) grants equal access to land for all citizens (OECD, 2019). Further, all citizens above 18 years of age is allowed access to land based on the usufruct principle through The Land Proclamation (OECD, 2019). All Eritreans residing in the rural areas are accorded equal access to land; both for agricultural activities and for housing. The Constitution asserts that any citizen shall have the right, anywhere in Eritrea, to acquire, own, and dispose of all property individually or in association with others and to bequeath to his heirs or legatees (Article 23(1)) (OECD, 2019). However, in reality, women's access and control over land is often affected by a number of factors including: customary law; attitudes of local authorities; marriage and the type of marriage they enter (i.e. if they enter a polygamous marriage); participation or non-participation (or their husbands) in the National Service (OECD, 2019). Evidence suggests that men have been the main beneficiaries of the land reform whereby married women are subsumed under male household heads to which land is allocated.

21. **Gender, Economic empowerment and Labour rights** About 30 per cent of employed women contribute to family enterprises. There are no legal restrictions on women's rights to open bank accounts or access loans, mortgages or other forms of financial credit. Banks and other financial institutions apply financial or collateral criteria equally to women and men when providing loans (OECD, 2019). Some of the challenges women face in accessing employment are related to a lack of opportunity based on limited or no education; illiteracy; lack of mobility; property and collateral, social and

[1] AFDB Eritrea Gender profile,2008

cultural norms that vies a woman's role as being one of caring for children and elders as well as looking after household responsibilities.

22. **Education and Gender.** The completion rate for both females and males for primary school education is low; however has improved between 2000 and 2017. However ddisparities at secondary and tertiary levels exist and and across regions coupled with socio-cultural and socio-economic barriers which affect access to education especially for girls (State of Eritrea, 2018c). For example, in rural areas, children and youth are expected to support their families including providing agricultural labour while girls are married off early or drop out due to early pregnancies. In addition, there is a large and growing population of Eritrean youth who are uneducated, unemployed and lack relevant job skills and training to match the labour market (NRC, 2019a). Over the past 10 years, NUEW has worked in partnership with the Ministry of Education to eradicate adult illiteracy, both by organizing educational resources and campaigning for the increased participation of women in the programme. Since 2003, nearly 350,000 people – 92% of them women – have participated in the adult education program. However much remains to be done: many NUEW members are still illiterate and female participation in schools remains low. See Table 3 for sex disaggregated educational statistics comparing 2000 (left) and 2017 (right).

23. **Youth.** As can be seen from Figure 9, a substantial proportion of the population are under 35. Currently, as can be seen from Figure 10, youth unemployment is low, an anticipated progressively demobilization of youth will require job creation in the private sector and increased employment in agriculture for the rural youth. The Youth Development of the Commonwealth Secretariat (2016) found that Eritrea has a low Youth Development Index (YDI)[2] (Table 5) ranking 163 out of 183 countries with a score of 0.449 where the global average is 0.616 and the Commonwealth average is 0.606. There is a large and growing population of Eritrean youth who are uneducated, unemployed and lack relevant job skills and training to match the labour market[3]. A number of factors continue to drive migration especially among young males including indefinite national service; the suppression of rights (political, economic, and social); the absence of economic opportunities and many engage in subsistence activities[4]. For example, in 2015 over 54 per cent of men, particularly youth, are either unemployed or under-employed in seasonal agricultural work or as casual labourers as majority have no access to the communal land. The need to build skills for youth was identified for the formal and non-formal sectors, including entrepreneurship skills to facilitate the start-up of small businesses and support women entrepreneurs, e.g. in agriculture, textiles, and footwear[5].

24. Labour force participation in general is high for both male and female over 15 compared to other countries in the same economic bracket. As described by Weldeab (2010), conscription typically starts after the completion of high school or college, meaning that Eritrean society is highly dependent on its youth for its national defence and reconstruction. Eritrea has a very high labour force participation for both men and women and across all ages, in particular for youth (in comparison with other LDCs). However, the case of Eritrea is particular in terms of youth employment due to universal conscription that existed during the war. Estimated actual numbers and the spatial distribution of the youth in the country in 2018 is mapped in the COSOP version of the SECAP as Fig 11 and may provide a basis for geographic targeting if youth is a primary

[2] "The YDI score is a number between 0 and 1. For a country to receive a perfect score of 1, it would represent the highest possible level of youth development attainable, with 0 reflecting little to no youth development. This scoring system is the same as the one that underpins the HDI produced by the UNDP's Human Development Report Office (HDRO)." Commonwealth Secretariat, 2016, p. 12.
[3] NRC 2019a.
[4] GSDRC 2016
[5] African Development Fund 2015

beneficiary. Hence the types of activities chosen if targeting youth in the agricultural sector would need to vary by location.

25. **Ethnic minorities** Eritrea recognizes a number of ethnic groups. Most of the Tigrina, mostly farmers who constitute about 55 per cent of the population -- live in the highlands, although they have also migrated to other parts of the country. The Tigre, nomadic pastoralists and the Hidarb (Cushtic Beja) (the latter who make up under 5 per cent of the population), reside in the northern, western, and coastal lowlands although many also migrated to Sudan during the Ethiopian-Eritrean conflict; they make up about 2 per cent of the population. The Rashaida reside in the northern coastal lowlands and the northern eastern coasts of Sudan and represent about 2 per cent of the population.

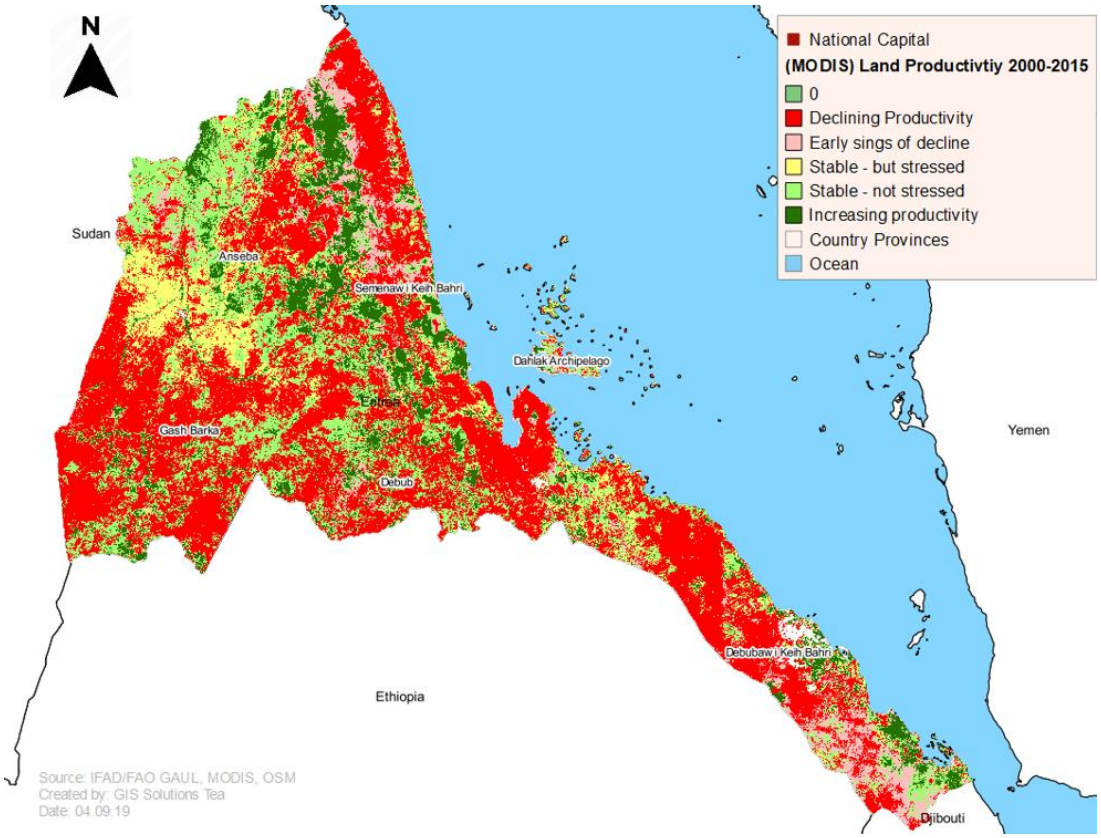
26. The Afar constitute under 5 per cent of the population and live in the Debubawi Keyih Bahri Region and Ethiopia and Djibouti. They suffered greatly from the famine of the 1970s as well as the conflicts. Recent droughts have also put the Afar at risk of hunger and disease. The Saho represent 4 per cent of the population and mostly reside in the Debubawi Keyih Bahri Region and the Northern Red Sea Region of the country. At about 2 per cent of the population, the Bilen, mostly farmers, are primarily concentrated in the north-central areas, in and around the city of Keren, and south towards Asmara. The Kunama make up around 2 per cent of the population and live mostly around in the Gash Barka Region and the Nara, who make up under 5 per cent of the population live mostly around the south-western border with Sudan and Ethiopia.

27. **People living with disabilities** The 2010 Eritrea Population and Health Survey estimated the total number of persons with disabilities in Eritrea is 149 103, out of which, 96 748 live in rural areas. According to this survey, persons with disabilities constitute around 5 per cent of the country's total population (Abbay, 2015). The EPHS did not provide information on women with disabilities. The EPHS indicates the most prevalent forms of disability as those related to vision, mental/intellectual and motion impairments. The most prevalent forms of physical disabilities and mental illnesses are those caused by years of war and unexploded ordinances (Abbay, 2015).

2.2 Environment and climate context, trends and implications

28. **Agricultural, Environment and Climate**. Over the last several decades there has been a trend in declining land productivity in Eritrea, as can be seen from Figure 2 below.

Figure 2. Index for Land Productivity Change in Eritrea 2000-2015



29. This is essentially a measure of vegetation cover and health, which is taken to be a metric for land productivity. While not sufficient in and of itself, and the result of different dynamics in different places, if paints an overall picture which warrants concern. Vulnerability to potential negative impacts of climate change is considerable because of serious problems of land degradation, limited access to modern agricultural techniques, the population high dependence on precipitation and groundwater for agricultural production. Now the risk of crop failures and loss of livestock is rising (e.g. rainfed wheat has the potential for yield losses as high as 25% or more). As documented in the country's NAPA (2007), traditional coping strategies have been already affected by different factors (e.g. desertification) and will be increasingly disturbed by recurrent droughts, high and spatial variability of rainfall.

30. The impacts of climate change will exacerbate this general picture, as can be seen from the 20 year projection from 2020 in Figure 3 below. This is based on the median risk scenario using the CARD tool developed by IFAD. As can be seen, the impact varies by crop. This should be taken into account when selecting either the crop(s) to focus on and/or the water management regime. There are further distinctions between highland and lowland agro-ecosystems

31. Figures 3 and 4 below together highlight how even in the better watered highland areas, which comprise a relatively small part of the country, that projected impacts on yield for different crops over the 20 year EFA lifespan of the IADP need to be taken into

account, in particular the costing of providing water during and/or outside of the growing season(s) to compensate for this.

Figure 3: Projected national average crop yield decline due to Climate Change using IFADs CARD model for the period 2020-2040

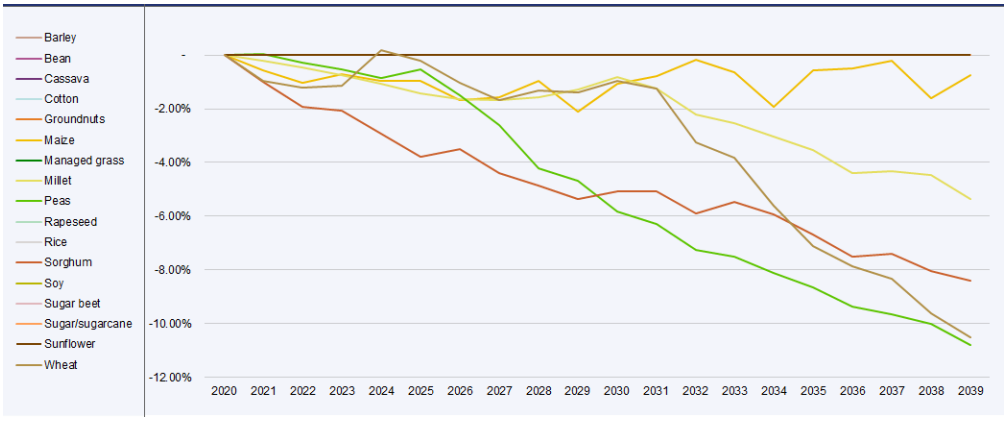
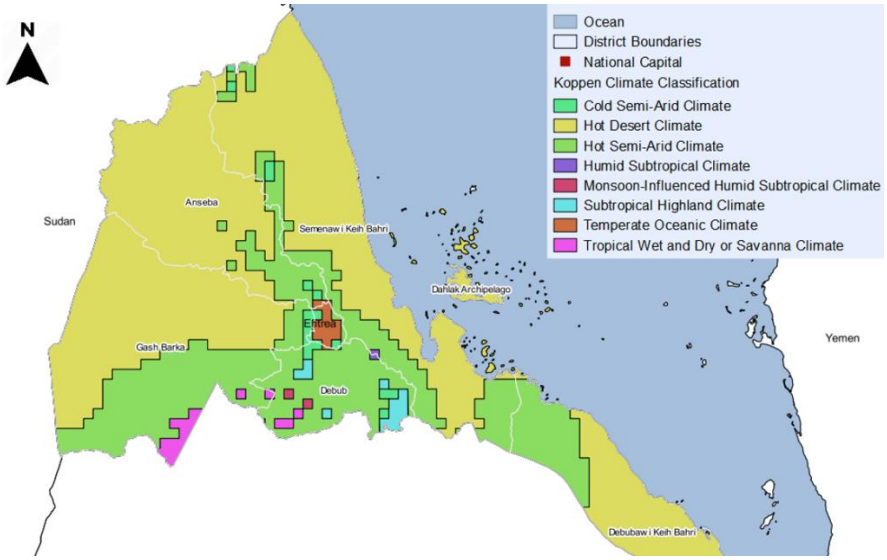


Figure 4: Agro-ecology of Eritrea



32. Nevertheless, there will be also areas of the country, where longer growing seasons and potential increases in total rainfall may increase productivity (e.g. sorghum expected to boost in the area of production and in yield). Adaptation is therefore

essential, not only to response to foreseen changes and unpredictable changes, but also to maximise potential gains .

Figures 5,6 Projected crop yield decline due to Climate Change using IFADs CARD model for the period 2020-2040 by agro-ecological zone:

Tropical Highland Semi-Arid (Top) vs Semi-Arid (Below)

33. **IADP investments to adapt to and mitigate CC and to prevent and reverse environmental degradation**. Some of the climate smart technologies to be promoted include: a) rainwater harvesting; b) drought tolerant and early maturing crop varieties; c) drought tolerant forage and agroforestry fodder species; d) watershed conservation and management; e) afforestation ;f) mangrove rehabilitation and conservation; g) solar and other forms of renewable energy sources, and energy saving approaches etc

34. More specifically, via Component 1 of the IADP, Given the poor spatial and temporal distribution as well as total scarcity of rainfall in Eritrea, with over 90 percent of the total area receiving less than 450 mm per annum, soil moisture deficiency remains to be the single most risk factor to ensure food security. To address this challenge, this component will support water-centred activities, thereby deploying watershed approach (in the context of integrated water resources management (IWRM) as the planning unit. The component will finance activities required to plan and implement IWRM to restore the hydrologic and ecological functioning of watersheds,

enhance the sustainability of existing land uses and, improve its resilience to climate shocks.

35. **Planning support for the IWRM approach** will be undertaken and will include (i) baseline studies and watershed characterization maps to assess the major socioeconomic and bio-physical constraints to sustainable agriculture production, including the deployment of GIS technology to understand soil characteristics – depth, types and production systems.

36. These assessments will identify the most effective soil and water conservation measures to be supported under sub-component 1.2; (ii) establishment or strengthening of watershed committees and irrigation water-users associations (WUAs) through training on participatory planning, agricultural water management, O&M of infrastructure and exchange visits.; self-help and user groups will be established and trained to undertake specific watershed management activities and operate and maintain water management infrastructure, women and young people will be empowered to form self-help groups to undertake ecosystem services as alternative livelihoods (iii) remote sensing based monitoring and evaluation systems will be availed to support assessments of land and soil degradation in micro-watersheds and to measure landscape management related results. The plans will take into account the impact of on-farm investments and provide a basis for the determination of sustainable natural resource management and production activities in Component two.

37. **Soil and Water Conservation interventions** will be site specific and based on community and farmer interventions, and may include, (iii) hillside closure and afforestation; (iv) hillside soil and water conservation (SWC), using micro-terraces, detention ponds, bunds, and biological options; (v) tree seedlings nursery establishment or strengthening; (vi) on-farm physical and biological SWC, terrace, bunds, etc

38. **Varieties of seedlings** will be selected for their contribution to soil conservation and soil fertility improvements, as well as economic benefits points of view as augmented by such income generating activities as beekeeping.

39. The Project will also support the production and dissemination of energy-saving technologies, especially stoves in selected watersheds as well as school environmental clubs in selected schools at national level.

2.3 Target group profiles

40. **Women.** Women constitute 55 per cent of Eritrea's population and they head 47.2 per cent of all households. The ratio of girls to boys in tertiary education is 67 per cent. The fertility rate is 4.8 children per woman. The GoSE adopted several policies supporting equal opportunities for women, namely the National Education Gender Policy and Strategy (2003), National Policy on Gender (2015), National Gender Action Plan (2015- 2019), and a gender awareness strategy of communities. Women play an important role in the economy, particularly in agriculture and majority are in the informal sector. However, cultural factors constrain the socio-economic empowerment of women in rural areas due to disproportionate access to property, land, inputs, training and economic opportunities.

41. In addition, women lack of access to suitable facilities, markets, finances, technology, information, training and business skills. To address, the project will build on the IADP Social Inclusion strategy to identify specific barriers for women participation (by age) to prioritize women needs for training, access to markets and productive assets and activities. This will include mentorship and working with the National Union of Eritrean Women (NUEW) is advocating women's equal opportunities and their

participation country's economic development. The NUEW is present at national and zoba/sub-zoba levels.

42. **Youth**. About 70 per cent of the population are under 35 years old. The need to skill up youth is needed in the formal and non-formal sectors. Following the peace deal with Ethiopia, demobilization of young adults will require job creation in the private sector and agriculture, including public and private investments and technology transfers.

43. The project will invest in building skills in entrepreneurship to facilitate the start-up of economic activities and small businesses. Specifically, IADP will aim to differentiate youth categories paying attention to the needs of the younger 15-24 who will be considered for skills development and business and entrepreneurial training and coaching will be provided for the younger women and men aged 25-35 with potential for starting economic activities. The National Union of Eritrean Youth and Students (NUEYS) is an active stakeholder in development, supporting advocacy for youth and their empowerment.

44. **Target groups and how the project will benefit them.** The Project interventions will directly benefit approximately 40,000 rural households or more than 200,000 household members. Priority beneficiaries will be: (i) rural smallholder male and female farmers involved in subsistence agriculture, horticulture and small livestock keeping, whilst differentiating farmers who can produce for markets and vulnerable households requiring MIHAP type support to boost their food and nutrition security; (ii) farmers and youth interested in establishing farmers' associations or cooperatives or pioneer small and medium enterprises (SMEs); (iii) women, especially woman-headed households, and households with young (0-5 years) children, with priority to those with malnourished children; and (iv) youth will be categorised into two groups (18-24) and young adults (25-35 years), including demobilized soldiers.

45. **Geographical targeting strategy**. Geographic targeting will include two stages. Firstly, priority will be given to Sub-zobas with high food and nutrition insecurity and poverty levels. Secondly, selection of intervention sites will be performed through: (i) a watershed approach in the highlands of the zobas Anseba, Debub, Maekel and part of Gash-Barka; (ii) an assessment of potential for irrigation by smallholder farmers in the associated lowland areas (part of Gash-Barka, Northern Red Sea, and Southern Red Sea). Criteria for selection and prioritisation of watersheds and irrigation schemes will include: (a) availability of a reliable source of water for livestock and irrigation (preferably also for human consumption); (b) self-selection or willingness of beneficiaries to participate in the investment.

46. **Social targeting strategy**. In addition, special efforts will be undertaken to target youth and women through a combination of direct targeting, self-targeting, and facilitation and empowerment measures. The Project will focus on empowering women and creating employment for women and youth mainly through: (i) conducting specific needs assessments on women's issues in agriculture and agri-business and dissemination of relevant information in the first year of implementation; (ii) strengthening existing and formation of groups of women involved in agriculture and agri-business; (iii) creating targeted employment and income generation opportunities, according to agro-ecological zones; (iv) providing skills training in order to improve labour conditions and entrepreneurship productivity and enhance women's participation in economic activities; (v) enhance women's representation in cooperatives and strengthening of their leadership capacity; and (vi) promotion of labour-saving technologies, aiming at decreasing women's work burden. The project will also integrate community sensitization on ending early marriages and other forms of gender based violence in the areas related to the rights of women and gender disparities (in education and leadership), among others within the planned project activities.

47. **Targeting women and female headed households**. Village Administrators, in collaboration with the National Union of Eritrean Women (NUEW), which has a well

structured and widespread presence at Zoba, Sub-zoba and Kebabi levels, will be instrumental in facilitating direct or self-targeting of women and women's groups as well as in identifying economically and nutritionally vulnerable women-headed households in the intervention areas. In addition, the Eritrean Women Agribusiness Association (EWAA) will be an important partner to reach out to women's groups involved in agriculture and agribusiness activities. Women will be empowered to acquire skills, information and access to productive assets such as the labour saving equipment.

48. **Targeting youth for employment**. The Project will focus on supporting the youths, including young women and people with disabilities, to acquire entrepreneurship and technical capabilities as well as assets; and to provide input packages for micro, small and medium scale enterprises and encouraging them to venture into more profitable activities beyond bee-keeping, poultry and small ruminants income-generating activities.

49. The Project will build on the achievements and lessons learned from past and ongoing projects, such as the Youth Employment Skills Development project in the Anseba and Gash-Barka zobas. The Project would: (i) identify eligible youths for the proposed activities; (ii) carry out a needs-assessment for the required vocational skills and entrepreneurship capabilities; (iii) select business opportunities for youth, related to the provision of services and tools for agriculture (services throughout the cropping cycle and modern tools for agriculture) but not exclusively. Potential interventions include dissemination of technologies e.g. green house farming, tree seedling production, and or participation in certain segments of the value chain like transportation and value addition.

3. Institutional analysis

50. **National strategies and policies** on smallholder agriculture, rural poverty reduction and enhanced food security and nutrition. The vision of the Government of the State of Eritrea (GoSE) is operationalized in the National Indicative Development Plan (NIDP) 2014-2018, which places high priority on productively exploiting the country's natural resources for sustainable socio-economic development. NIDP foresees trade prospects with Middle Eastern and Asian countries. The main frameworks for the agriculture sector include the 2019 National Agriculture Development Policy and Strategy, as well as the Five-year Strategic Agricultural Development Plan 2019-2023, and the Small and Medium Commercial Farmers Strategy (SMCFS) with the goal to create by 2023 farm enterprises that engage in highly productive, profitable agriculture value chains linked to domestic and international markets.

51. **Gender equality.** The Eritrean government is committed to gender equality and has ratified relevant international conventions. The constitution also enshrines gender equality. The GoSE adopted several policies supporting equal opportunities, namely the National Education Gender Policy and Strategy (2003), National Policy on Gender (2015), National Gender Action Plan (2015-2019), and a gender awareness strategy of communities. A National Strategy on FGM Abandonment has been formulated in 2006 and a proclamation rendered FGM a criminal offence in 2007. The National Union of Eritrean Women (NUEW) has its history in the liberation struggle as the women's wing of the Eritrea Peoples Liberation Front and is now the largest NGO dealing with gender equality. It is mandated by the government to act as national gender machinery. It has broad presence on the ground but lacks a network of gender focal persons in the national ministries which weaken capacity and influence. It is mandated to both coordinate and monitor gender- related activities and to implement them, which causes the organisation to be overstretched[6].

52. **Environment / Climate.** Eritrea has ratified the UN Convention to Combat Desertification (UNCCD) and UN Framework Convention on Climate Change (UNFCCC).

[6] AFDB Eritrea Gender profile 2008

Several biospheres have been declared (see Figure 19) across different areas of the country. Considerable progress has been made in particular in combating desertification and towards its Land Degradation Neutrality target.

53. With respect to the environment, the National Environmental Management Plan (NEMP) is the primary policy document. Other key documents are the National Environmental Impact Assessment Procedure and the Integrated Water Resources Management Action Plan (2009-2016).

54. More specifically on climate change, and as per the Nationally Determined Commitment (NDC) the GoE is committed to reduce the CO2 emissions from fossil fuels by 23.1% in 2020, 30.2% by 2025 and 39.2% by 2030 visa-vis to the reference year. If additional support is solicited, it can be further reduced by 36.4% in 2020, 61.1% by 2025 and 80.6% by 2030." "Unconditional mitigation scenario: With internal resources Eritrea can implement its unconditional scenario reaching 1.3 MtCO2 in 2020, 1.6 MtCO2 in 2025 and 1.9 MtCO2 in 2030from fossil fuel CO2." Furthermore "Conditional mitigation scenario: With external assistances Eritrea can implement its conditional scenario reaching 1.1 MtCO2 In 2020, 0.9 MtCO2 in 2025 and 0.6 MtCO2 in 2030from fossil fuel CO2.

55. Finally, Eritrea intends to raise the share of electricity generation from renewable energy to 70% of the total electricity generation mix (wind, solar, and geothermal) [by 2030].

56. **Key actors and institutional arrangements**: **Agriculture.** Key institutional partners of IFAD are: (a) at the national level, the Ministry of Agriculture (MoA) and its national services such as the Planning and Statistics Division (PSD), the Agricultural Extension Department (AED), the National Agriculture Research Institute (NARI), the national breeding centres (poultry, rabbits and swine, horses); (b) at the regional and local level (zoba and sub-zoba), the decentralized services that will be responsible for project implementation; (c) cooperatives and farmers' organizations; d) rural financial stakeholders.

57. **Women.** Collaboration with the National Union of Eritrean Women (NUEW), which has a well structured and widespread presence at Zoba, Sub-zoba and Kebabi levels, will be instrumental for gender targeting and mainstreaming. The National Union of Eritrean Women (NUEW) is advocating women's equal participation and is present at all levels of society. To raise women's awareness of the culture of gender discrimination prevalent in Eritrea, NUEW has conducted a number of political advocacy campaigns and educational interventions, including special courses and capacity building programmes for women in leadership positions. Overall, more than 2.9 million people – including 90% women – have been reached through nearly 25,000 meetings over the past 10 years. These have included political advocacy meetings, seminars, short courses and workshops covering a range of topics, including gender mainstreaming, women in decision-making roles and women's participation in elections, among others.

58. **Youth.** There is no governmental authority that is responsible for youth however youth related objectives are incorporated into each sector's priorities (education, health, etc). As described by Weldeab (2010), government agencies that deliver programmes to youth often so do without a specific youth strategy in mind. In some limited cases, government bodies such as the Ministry of Health have sought the input and assistance of youth in the design of their programmes. In one instance, the Ministry partnered with the National Union of Eritrean Youth and Students (NUEYS) because of their success with grassroots HIV/AIDS awareness.

59. The NUEYS is an active stakeholder in development, supporting advocacy for youth and their empowerment and as such is expected to be a key partner in youth engagement. It is a national youth organisation with the mission to "cultivate and produce capable youth by promoting and strengthening Eritrean youth in all aspects of national, regional and international development processes". Its main functions are: (1)

Advocacy and lobbying, ensuring youth needs and issues are raised with decision-makers, and; (2) Service provision, temporarily providing services to youth that are in scarce supply, such as establishing and running youth health centres around the country.The bodies related to vocational education and technical training at various levels will also be important.

Risks, Scenarios and Key Constraints

60. The IFAD Country Strategy Note (2016) outlines a number of risks including: i.) country fragility linked to critical environmental issues, increased climatic variability, recurring drought, flash flooding, and sea level rise; ii.) limited institutional implementation capacity within government systems, procurement delays, limited availability of service providers, etc.; iii.) ineffective fishing technology leading to fisheries over-exploitation; and iv.) potential risks of siltation that can endanger dams/reservoirs and the livelihoods of fishers. Specific constraints are highlighted below.

61. Lack of relevant job skills, training to match the labour market and economic opportunities for youth: The lack of economic opportunities for rural youth, and the ensuing challenge of migration to urban areas and outside of Eritrea is a scenario that is likely to affect the country over the short to long term and will likely increase as climate change impacts increasingly impact rural areas and populations.

62. Gender and social inequality are long term challenges and poverty determinants that need to be addressed to achieve the SDGs and other national and global commitments. While policies and programmes are in place, more is needed to address implementation challenges and community awareness for shifts towards more gender equitable social norms and practices needed at all levels. Social and cultural norms that discriminate against and limit the opportunities of girls and women, marginalized youth, ethnic minorities, and people living with disabilities need to be addressed using cross-sectoral approaches including in agriculture and rural development.

63. Price of staple foods: The price of staple foods in Eritrea and the East African Region (WFP, 2018) is an issue that affects the country in the short, medium, and long term depending on what happens due to the impacts of climate change, world markets, and other pressures on agriculture, food, and trade. Rural infrastructure and transport can also affect prices. When the prices of staple foods rise above average, they erode the purchasing power of poor market dependent households, leaving them more vulnerable in lean times (WFP, 2018).

64. Institutional and human resources capacity constraints: The country continues to experience institutional and human capacity gaps across all sectors in both public and private institutions (AfDB, 2017). This is not an issue that can be resolve in the short-term, but one that demands investment in education and training institutions over the long term as well as developing the economic opportunities for those skills to be used.

65. Inadequate infrastructure: Deficiencies in agriculture and water and sanitation infrastructure continue to undermine the country's inclusiveness by slowing the transformation of the Eritrean economy, which is heavily dependent on the mining sector (AfDB, 2017).

66. A young private sector: The country's infrastructure challenges, a dominant public sector, restrictive economic and financial policies, skills gaps and miss-match, continue to undermine the existing potential in agri-business and agro-processing, manufacturing enterprise growth and employment creation and, therefore, curtailing the private sector development.

Social Impact Analysis

67. The potential social impacts that will be generated by the implantation of IADP activities have been grouped as follows:

Institutional support and Programme management and coordination

68. *Fragmented project approach:* A fragmented planning, implementation and monitoring approach at national and Zoba levels affects sustainability of a project. There may be some stakeholders at national and Zoba level who are i) not aware ii) who doubt their role in the project and iii) who feel that their role is being played by another stakeholder. This results in uncertainties, suspicion and conflict. The following are recommendations on how best coordination can be done and the key aspects expected at all levels:

Sustainability of Agri-Business

69. *Elitist Community Business Plans:* Development of business plans is a very good approach but it is necessary for the plans to be generated by the communities themselves not as ambitious ideas from extension officers and/or politicians. Ownership and sustainability starts from the base processes.

70. *Value Addition challenges:* If the project beneficiaries want to engage in various value addition processes, there is need for them to acquire updated skills and knowledge pertaining to the particular value chain, infrastructure and adequate capacity to meet the required standards.

Socio-Economic Development and Transformation

71. Labour Issues: Two potential issues are apparent in the project, Child Labour and forced Labour*. Children not going toschool to do home choes.* Forced Labour is said not to be there but is being confused with the free labour the villagers offer for Government projects which will benefit them. This has been a long-standing practice which is open to abuse.

Social Amenities and Resourcess

72. *Occupational Health and Safety Issues:* Weak technical capacity and/or negligence on operation of vehicles and machinery resulting in temporary and permanent physical injuries, Bronchial diseases from dust, diseases and illness from livestock handling (milk production, slaughter houses) and/or loss of life.

Gender

73. *Less women in leadership positions: (Empowerment of Women)* women guaranteed of access to land but have no control over land either way. it is the men who usually makes decisions. Lack of real opportunities for women in jobs etc. Potential for sexual exploitation and harassment at work places.

74. *Low youths participation: (Empowerment of Youths:)* The majority of Youths do not own land hence their low participation in agriculture. There is great potential for lack of real benefits for youth as there may be local elite capture of project benefits However, the value chain model being promoted provides an opportunity for them to participate gainfully in some stages of the value chain as aggregators, vendors, traders and/or processors. Everyone has a niche in a value chain.

4. Environmental and social category

75. Based on the analysis above, combined with the results of the Environmental and Social Risk Screening undertaken using the SECAP template to assign a risk classification for the Project Concept Note. The design team designates the IADP as **Category B**, as the size of the irrigation schemes will not result in loss of environmental services

provided by a natural ecosystem, nor may have significant negative implications that affect a broader area.

76. As a result an Environmental and Social Management Framework study will be carried out separately and will be part of the package presented for the DRM. Some key potential safeguards risk with respect to IFADs standards (draft 2020 version, 2017 version) include labour (conscript labour, possible under age labour) and SEA; all in the context in particular of infrastructural investments. The GoE has its own safeguards standards but whichever of the GoE or IFAD standards are considered to me more restrictive shall be applied.

77. Whilst Eritrea has ratified the ILO convention concerned and is in communication with ILO through the regular processes and channels, there may still be ambiguity in terms of what constitutes forced labour in the Eritrean context given the wide use of conscripts, including in stage enterprises. It is therefore recommended that clarification be sought specifically on the sources of labour from contractors in terms of infrastructure provision and maintenance. This should be assessed prior to the start up workshop. A joint preliminary mission with ILO should also be considered. Whilst labour contributions from the community will likely be involved in watershed conservation, it is recognized that this is a longstanding and universal practice in the context of rural development. Nevertheless it is recommended that a maximum number of days and conditions be verified in writing as reflecting national policies and legislation.

78. Pro-environmental project interventions include construction of soil and water conservation structures, small-scale irrigation; drought tolerant crops, forage and livestock breeds, tree planting along the hill slopes, rangeland management, establishment of enclosures that reduce GHGs emissions and provide carbon sinks.

79. Environmental and Social safeguards requirements of GoSE as well as of IFAD will be respected by the Project. In the case of the GoSE, this is reflected in the Eritrean Environmental Protection, Management and Rehabilitation Framework (2017), the National Environmental Assessment Procedures and Guidelines (1999) and the Environmental Assessment Procedures & Guidelines for Agricultural Projects (2008). An Environmental and Social Management Framework (ESMF) reflecting these requirements with respect to planned project activities, together with a Free Prior and Informed Consent (FPIC) Implementation Plan, will be developed to guide the Project during implementation. The ESMF will be developed as part of project preparation.

80. An **overview** of the key risks by project activities by component, mitigating actions required and possible capacity needs to deliver mitigation are presented as an **Appendix 1.** For further details see the ESMF.

Categorization of 'sub-projects'

81. IADP will be operating nationwide. In terms of environmental and social safeguards implementation, it is recommended that Environmental and Social Specialists be placed at the PMU head office and be supported by two regional specialists who will oversee both environmental and social issues of the Programme. One Environmental and Social Specialists will cover the Highlands and the other will cover the lowlands. Each regional specialist will service all the districts in his/her region and will work with the existing Government structures. It is of key importance that Environment Officers at district level and Community Development officers be part of the IADP district Implementation Teams in all the districts.

82. It is recommended that most of the sub-projects that will be screened and approved for funding under IADP be of Category "B" so that costly environmental and social impact work be avoided. However, if an economically viable project is identified,

there is nothing to stop it from being implemented. Further, IADP should avoid sensitive and marginal areas.

83. At each Zoba office the Regional Environmental Officer will be deployed to support Regional project implementation activities and facilitate the communication with the central PMU. S/he will coordinate all environmental and social Safeguards issues in that Zoba, oversee the implementation of the ESMF and be responsible for training of sub Zoba Technical Teams in sub-project selection, screening and intervention/location specific ESMP development as necessary.

84. The sub-Zoba technical teams will help the farmers in preparing their sub-projects applications to avoid or minimize adverse environmental and social impacts. They will use the Environmental and social screening form together with information on typical sub-project impacts and mitigation measures in the environmental management plan (EMP)

Stakeholder engagement, FPIC and Grievance Redress Mechanism

85. Stakeholders for the purpose of this programme shall be defined as all those people and institutions that have an interest in the successful planning and execution of the activities. This includes those likely to be positively and negatively affected by the programme

86. The consultation process shall ensure that all those identified as stakeholders are conferred with. Subject to IADP PMU approval, the Environmental/Social consultant will share information about the sub-project with the public to enable meaningful contributions and thus enhance the success of the programme.

87. As the Programme gets underway, the IADP PMU will develop a detailed Public Consultation Plan identifying all possible stakeholders, their specific information needs and the appropriate modes of consultation as well as feedback mechanisms. Information Disclosure and Consultation. The type of information to be disclosed to the various stakeholders depends on their interests and how they will be affected by the Programme – or how IADP activities may be affected by them

88. Implementation of sub-projects activities under IADP will take place in various locations of the selected programme districts. The implementation may generate a number of challenges and complaints especially to those which relate to infringement of rights of sections of the society. As part of addressing such complaints and in the spirit of the continuous consultation process, a grievance redress mechanism has been developed for IADP. The grievance redress mechanism (GRM) will consist of three parallel systems, which are; i) a community-based system ii) a formal system and iii) the IFAD Complaints procedure.

89. In solving problems, negotiation and agreement by consensus will provide the first avenue to iron out and resolve any grievances expressed by programme affected individuals. Thus, appropriate community-based channels of grievance redress mechanisms will be put in place, and the programme affected people sensitised to make use of them.

90. xxx The formal Grievance Redress Mechanism consists of the following components: -

- The access point for impacted/concerned people will be situated as close to the beneficiary farmers as possible, such as places at the sub-project and IADP

offices. IADP staff will be responsible for receiving the Grievances, classifying and logging them.

- An acknowledgement of receipt should be given to the complainant containing an expectation of when they will receive a response.
- The grievance is then Assessed and investigated to identify all the key facts.
- A resolution is then arrived at and the proposed actions are confirmed with IADP/Ministry of Agriculture senior members of staff.
- A response is then communicated to the complainant within the timescale promised.
- The complainant is given room to appeal to the Ministry of Agriculture or the Courts of Law if they are not satisfied with the response.
- Once done the case is brought to a closure and all the staff members of iadp are made aware of the complaint, any underlying issues and plans to prevent any future recurrence of the issue.

Application of the principles of Free, Prior and Informed Consent

91. When the precise nature and specific location of an investment is known and well defined, FPIC must be solicited at design stage. GoSe will identify project components and activities that require FPIC at this stage. The FPIC implementation plan will follow

92. The ESMF identifies project components with potential direct and significant impact on local communities and which require FPIC of national or subnational representative institutions of local communities during the design phase

93. If at design stage the specific locations and communities to be affected were not identifiable, the project documents will include the FPIC implementation plan describing how the participatory and consultation process for seeking communities' consent would be conducted. The FPIC would then be sought during implementation, before a specific investment is decided in a given community.

94. Since investments in specific communities and territories were not identifiable during the project design stage, FPIC will further be solicited during the implementation phase. See the PIM for further details of the approach which will be followed during implementation, based on IFAD recommended good practice.

Key Recommendations from the ESMF and costs

- Any sub-project that falls within the parameters of the Exclusion List, will not be considered for funding under IADP.
- Reduction and control of noise levels to minimize any disruption to the living conditions of wildlife be strictly adhered to.
- The land around any sub-project works should be left intact and pollution be minimised.
- Bush clearance should be confined to the absolutely necessary part, buffer strips be maintained and huge indigenous trees in the area should be preserved as much as possible.
- Labour intensive methods should be encouraged as they benefit the local community in terms of job creation. For this the project should employ locals as much as possible to ensure that benefits remain in the area where development is taking place.
- The use of destructive machinery should be avoided as much as possible. Machinery will adversely affect soils and undergrowth.
- The recommended mitigation measures should be implemented to reduce significant environmental impacts.
- There is need to strengthen the community demand driven approach where needs are identified at community level and communicated upwards to the district through a project proposal and is awarded on a competitive basis .

95. The *estimated* costs for safeguards related work as calculated in the ESMF is summarized below. See ESMF for details

No.	YEAR / ACTIVITY	REFERENCE TABLE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
1	Technical Assistance (Environmental assessment studies)	Table 11-1	40,000.00	10,000.00	10,000.00	10,000.00	10,000.00	100,000.00
2	Site-specific ESIAs, ESMPs and Environmental License fees	Table 11-2	250,000.00	175,000.00	95,000.00			370,000.00
3	Mitigation Measures	Table 7-1 and 11-3	70,000.00	50,000.00	30,000.00	10,000.00	10,000.00	310,000.00
4	Monitoring and evaluation purposes (R&D, M&E, Field Visits)	Table 9-1 and table 11-4	100,000.00	70,000.00	30,000.00	10,000.00	10,000.00	220,000.00
5	Environmental and Social Training	Table 10-1 and 11-5	70,000.00	40,000.00	20,000.00	18,000.00	10,800.00	126,000.00
6	Annual Reviews	Table 11-6	10,000.00		10,000.00			20,000.00
7	Bi-Annual Audit	Table 11-6		25,000.00		25,000.00	-	50,000.00
8	End of Project Audit	Table 11-6					40,000.00	40,000.00
	Sub - Total							**1,226,000.00**
	10% Contingency							**122,600.00**
	Grand Total							**1,348,600.00**

5. Climate risk category

96. Eritrea is an arid to semi-arid agricultural and agro-pastoralist country. Agricultural production, which comprises the majority of the national economy, is constrained mostly by the availability of water resources. From 1930 - 2019, the annual average temperature increased appreciably, together with a decrease in the annual average rainfall in Eritrea over the same period; together compounding water availability constraints for both agriculture and pastoralism as well as for domestic water. Projections of impacts on yield across a range of crops using IFADs CARD tool are presented above; several staples are expected to be heavily impacted.

97. The high climate sensitivity scenario for 2030s projects shows the need for an additional 1.1 Billion m3 supply of water. This scenario if compounded with population growth rate of 3% will likely to require an additional supply of 2.2 Billion m3. Under the B2 high climate sensitivity scenario, the stream flow of major rivers is likely to decrease by 50 % in 2030s. Under this scenario, hazards associated with drought will have adverse impacts on the biophysical and socio-economic systems

98. Based on the analysis above, combined with the results of the **Climate Risk Screening** undertaken using the SECAP template to assign a risk classification for the Project Concept Note, the design team designates the IADP as having a climate risk of "**High**''. As a result a detailed Climate Risk Study has been carried out separately and is part of the package presented for the DRM. The climate risk is taken to be the inherent

risk in light of the location of the country, the likely project intervention locations and the nature of the activities and beneficiary groups.

99. However many of the activities of the project are in fact are designed explicitly to build resilience to the effects of climate change. The climate risks will be minimized by increasing the ability of the affected communities to adapt to environmental and economic variability, and long term changes; whilst exposure to these risks cannot be changed, the IADP can help reduce the vulnerability of the populations, their livelihood systems and ecosystems upon which they depend.

6. Recommendations for project design and implementation

100. The operational targeting approach and strategy of the project will include considerations on how to prioritize pro-poor outcomes (including through economic opportunities). A gender analysis of a better integration of women and youth in the agricultural production will be integrated in rolling out the Social Inclusion Strategy at start up for the project and the strategies and measures for promoting gender equality and women empowerment be clearly identified. Household methodologies such as GALS may be employed to gain a more granular picture as well as to capture the variations and options by context.

101. The project will further define the characteristics of the youth that the project intends to work with. In particular, it will define the different challenges and potential interest of young women/men, youth with disabilities, minors/adults (considering that youth in the targeted locations defined between 15-24 and 25-35 years old groups , and the distinction between unemployed, underemployed and working poor.

102. IADP will undertake a comprehensive situation analysis on nutrition context including nutrient gaps of the targeted beneficiaries during the baseline in order to articulate the pathways and requisite strategies needed to reach the desired nutrition outcomes.

103. In terms of safeguards considerations, these are detailed in the draft ESMF document. On the environmental side one outstanding issue will be water development, in particular dam safety even for relatively small structures in light of issues in the past. It is recommended that the project ensure that a qualified engineer be retained as needed to both certify dam construction and rehabilitation as well as regular maintenance. A maintenance inspection schedule should be developed and effected by the PMU. See also the Community Health standard of IFADs 2020 SECAP. In terms of the social risks, an issue which needs to be looked into in more detail is the risk of contravening IFADs safeguard standard on Labour; specifically the issue of 'forced labour'. See section 4 of this document for further details and recommendations on this issue.

104. Table 1 below summarizes recommendations of entry points and actions by project component and across the mainstreaming themes. This is detailed in the projects draft Social Inclusion Strategy and will be detailed in the detailed climate study. oth bio-physical and socio-economic aspects will be combined in practice via the GIS based systematic approach to land use planning, which will be centrally managed for the highest level activities (ie selection of zobas and sub-zobas) but also participatory in terms of specific geographic, social and action prioritization at local level and in any particular watershed. The project will be supported by IFAD at the start up in particular in terms of suitable participatory methodologies as well as to identify technical support

for operational multi-scale land use planning. See the PIM for further details as to technical support for operational multi-scale land use planning.

Table 1

Summary of Mainstreaming Entry Points, Avenues by Project Component

	Environmental sustainability & climate change resilience	**Gender empowerment**	**Youth engagement & employment**	**Nutrition mainstreaming & food security**
Integrated Watershed Management	Planned approach, water as the entry point is consistent with sustainability principles.	Land/resource tenure of women promoted Women in key positions in planning Specific activities targeting young women	Land/resource tenure of youth promoted Youth in planning and paid infrastructure and technical training opportunities	Nutrition specific geographical targeting; by both need (social) & potential (production) Season extension via water management
Production & Rural Livelihoods	Short list climate adapted but also nutritious crops accessible to women and with market potential for youth	Gender specific MIHAP packages, especially for female HH	Youth entre-preneurship mentorship Youth master trainer program & para-vets Access to financial services	Inter-cropping systems, post harvest management, complementary small stock for egg, meat and milk production
(cross cutting) Project Support Services	The capacity building and policy engagement functions of this component should be pragmatic and achievable	Participatory needs assessment Social inclusion officer Female mentors Civic education re womens domestic legal rights Quotas for female staff	Participatory needs assessment Social inclusion officer	Social inclusion officer Nutritional education including food preparation and storage Nutrition strategy, with specific pathways by target groups Nutrition capacity assessment of MoA; partnership with MoH Ensure nutrition specific indicators in LF

105. In terms of capacity gaps, it is recommended that social inclusion officers be hired at multiple scales, in particular in light of the relatively low cost of expertise in Eritrea. This should be backed up by a long term retainer for international expertise from within the region over the first half of the project in particular. Finally, a detailed review of experience from the NAP and other experiences both IFAD and non IFAD projects in Eritrea should be prepared for and presented during an extended project start up phase to ensure that lessons learned are reflected in the mode of implementation. This would also ensure awareness and a common understanding among all key parties, build on successes and help ensure that any implementation capacity gaps not yet addressed are identified.

7. Further studies needed

106. As mentioned above, further studies include a ESMF and a detailed Climate Risk Analysis and have been undertaken ahead of the DRM; as well as a detailed gender and youth analysis which will be rolled out as indicated in the Social Inclusion Strategy for the Project. The land use planning supporting activities will include some preparatory review of options to build on existing capacities in the Ministry of Agriculture and what should be done from zoba and sub-zoba levels.

8. Monitoring and evaluation

107. The M&E team, in close collaboration with PSD of MoA will also have the responsibility for the coordination of programming and preparation of the Project's consolidated Annual Work Plan and Budget (AWPB), based on the respective AWPBs from the Zobas, MOA, NARI, MoLWE, and other partners. The AWPBs will be key instruments for implementation and operational control. AWPBs will be prepared for all programme participants, starting from the primary stakeholders at the community level. IFADs mainstreaming commitments are already reflected in the targeting and funded activities, hence the effectiveness of the project in advancing these against the gender and age disaggregated logframe indicators will be regularly monitored and IFAD may provide specialized support in this should supervision missions indicate that this is necessary.

108. To enhance the efficiency of planning and preparation of the Zoba AWPB, the NPCO will provide the ZPCOs with clear guidance regarding multi-annual output targets and budgetary planning. The Project will adopt a multi-year planning, in particular for watershed & irrigation related interventions, and secure the required budget. It will reflect each Zoba and each implementing entity. This will be developed as a start-up activity, covering start-up until MTR, serving as an internalization process for the NPCO and ZPCOs of the PDR and supporting documents, and forming the basis for the annual workplans subsequently to be developed.

109. The Project will adopt a result-based management and check systematically the contribution of each planned activity to outcome achievement. The outputs and outcomes captured into the M&E system will be used to analyse the impact of the project on a quarterly basis by the M&E officers and KM&L officer. The team will document achievements through reflection meetings with NPCO team, implementing agencies and beneficiaries. The reflection meetings shall be organized on a quarterly basis for NPCO, ZPCOs and implementing agencies. PSD will also explore innovative ways to collect qualitative and quantitative data, including GIS, focus group discussions, structured interviews and longitudinal panels. This will guide the consolidation of input and output data provided by implementers and reporting on efficiency of implementation. This will be initiated in three-year implementation plans reflecting each zoba specifically.

110. Knowledge Management (KM). KM will serve as a foundation for replication of successes, provide the analytical basis to resolve challenges, and help to adapt activities to changing social and economic circumstances in the target areas. A KM action plan will be prepared to (i) identify knowledge gaps and prioritization of knowledge products to be developed; (ii) ease the up scaling of best practices in Eritrea or repackaging of

innovative approaches developed elsewhere; (iii) disseminate knowhow based on available communication tools (MoA newsletter, brochures, websites, radio, FFS)..

111. Institutional capacity building for M&E and environmental planning and management. The MoA has increasingly been using spatial mapping for reporting progress on NAP implementation, in particular on the nature and location of water development infrastructure (i.e. micro-dams). Building on this towards a planning capacity in the IADP for site selection, based on multiple criteria (hydrological suitability, agronomic suitability, road access, population, risk of environmental degradation, etc.) and on recent training of MoA staff in the use of GIS, it is agreed that the Project will provide a set of practical capacity building activities and associated data and equipment.

112. Due to the highly technical nature of this work, this will require a funded partnership with a suitable regional and/or international non-profit specialized institution focussed on training in GIS applications in development contexts with a focus on applied hydrology and watershed management. It is proposed that a short follow up consultancy will be arranged to better define the capacity needs in the context of IADP and provide specific recommendations for actions in its support. More details will also be provided in the PIM.

SECAP Appendix 1 Overview of Environmental and Social Safeguards related risks and mitigating actions

No.	IADP PROGRAMME COMPONENTS	SUMMARY OF RELATED ACTIVITIES	MAIN SAFEGUARDS RISKS OF THOSE ACTIVITIES	MAIN MITIGATING ACTIONS	ANY CAPACITY BUILDING REQUIRED TO DELIVER THOSE ACTIONS
1.0	**Component 1: Integrated Watershed Management**				

1.1	**Subcomponent 1.1:** Development and Implementation of Participatory Integrated Watershed Management Plans	- identification and characterization of watersheds;
		- intervention planning,
		- preparation of detailed design for selected watersheds
		- provision of equipment to support watershed assessment and monitoring.
		  ○ identification of most effective soil and water conservation (SWC) measures
		  ○ site selection for SWC activities, micro-dams and irrigation
		  ○ establishment or strengthening of watershed committees and water-users associations (WUAs) through training on participatory planning, agricultural water management, Operation and Maintenance (O&M) of infrastructure;
		  ○ establishment and training of self-help and user groups, targeting women and youth to undertake specific watershed management activities, including income generation enterprises such as apiculture (beekeeping)
		  ○ Remote Sensing
		  ○ Hydro-meteorological assessments
			- Exclusion of women and youth in Watershed committees and WUAs
			- Gender based violence instigated by women becoming more active in men's domains.
			- Un-equal opportunities or discrimination against women in staff training
				- Reserving a given percentage of positions for women and Youth in WUAs and Watershed Comittees.
				- Targeting women and youth to undertake specific watershed management activities, including income generation enterprises such as apiculture (beekeeping).
				- Staff training in remote sensing and Hydro-meteorological systems to give equal opportunities to all
				- There is also need to promote women in traditionally male dominated value chains such as honey and beef production
					- Gender equality approach employed

1.2	**Subcomponent 1.2:** Implementation of Watershed Management Plans	The activities under this subcomponent will be built on plans generated under subcomponent 1.1.: - Construction and upgrading of water infrastructure.	• Construction of water structure will have the following impacts ○ cutting down of trees,	• Limit vegetation clearing to working areas only	• awareness campaigns • Sustainable catchment management must be practiced

No.	IADP PROGRAMME COMPONENTS	SUMMARY OF RELATED ACTIVITIES	MAIN SAFEGUARDS RISKS OF THOSE ACTIVITIES	MAIN MITIGATING ACTIONS	ANY CAPACITY BUILDING REQUIRED TO DELIVER THOSE ACTIONS
		- Site specific SWC and construction and upgrading of water infrastructure. o hillside closure and afforestation; o hillside and on-farm SWC options; o tree planting supported with tree nursery establishment; o other viable technical alternatives. - Production and dissemination of energy-saving technologies, eg stoves. - Promotion of environmental clubs in selected schools at national level.	o soil disturbances • SWC will generally have positive environmental protection impacts. • Energy saving technologies will save the trees. • Environmental awareness instilled in youth.	• Use labour intensive methods which are not destructive • preservation of protected plant species, • use of alternative sources of energy, • Sensitive habitats should be avoided. • Clearing should be limited to working areas only. • Prioritise revegetation and reforestation. • Over abstraction of construction materials should be avoided. • Habitat restoration must be done where effects have been caused.	• Catchment approach to Natural resources Management.
1.3	**Subcomponent 1.3:** Watershed Restoration and Water Management Infrastructure	- a) upgrading of existing micro-dams (e.g. provision of appropriate water outlet or lifting); - b) construction of new micro-dams (earthen and masonry/gravity), shallow wells and small-scale surface irrigation; and - c) pilot/adaptation of modern irrigation technology, such as drip and sprinkler irrigation. - All dams to facilitate integrated water supply systems for: o livestock, o irrigation and o human consumption.	- Construction impacts like soil compaction, vegetation clearing, soil erosion - Drip irrigation will conserve the scarce water resources - Extensive irrigation may cause soil salinity. - Establishment of water supply systems:- vegetation clearing, soil disturbances, extraction of building materials like sand and brick moulding.	• Limit vegetation clearing to working areas only • Use labour intensive methods which are not destructive • preservation of protected plant species, • use of alternative sources of energy, • Sensitive habitats should be avoided.	- Proper Irrigation Management - Catchment approach to natural resources management. - Environmental awareness training - Water resources management practices at irrigation schemes

No.	IADP PROGRAMME COMPONENTS	SUMMARY OF RELATED ACTIVITIES	MAIN SAFEGUARDS RISKS OF THOSE ACTIVITIES	MAIN MITIGATING ACTIONS	ANY CAPACITY BUILDING REQUIRED TO DELIVER THOSE ACTIONS
				• Clearing should be limited to working areas only. • Prioritise revegetation and reforestation. • Over abstraction of construction materials should be avoided. - Habitat restoration must be done where effects have been caused.	
2.0	**Component 2: Crop and Livestock Productivity and Rural Livelihood Improvement–**				
2.1	**Subcomponent 2.1:** Access to Advisory Services	- Agriculture Extension Department (AED) to enhance adoption of improved climate-smart agricultural and livestock practices, o Time and Labour Saving Technologies (TLST) and o animal health services - emphasising on nutrition, gender and youth sensitive practices. - Integrating graduation elements for households to graduate from the MIHAP program. - Roll out of Farmer Field Schools (FFS) and Training, including agro-pastoralist field schools (AFS). o adaptation of training manuals and field materials to local agriculture and agro-pastoralism systems; o training of extension staff from national and zobas as national Master Trainers (MT); o training of extension agents (ToT) at Sub-zoba level; o training of facilitators (ToF) at Kebabi and village level, including women and youths, and other frontline extension agents;	- Agriculture and livestock production enhancement will entail introduction of Herbicides, fertilisers, pesticides, vaccines, inoculants, including proper storage of these agro-chemicals, etc - Enhanced pastoralism will be a threat to rangelands as farmers start keeping more animals - Women and Youth being overpowered by elitist capture. - Value addition processes can e polluting, ie discharges, waste generation - Village para-vets handling of vaccines and drugs may be a source of poisoning/pollution	- Institution of IPMP approaches to use less chemical pesticides - Establish proper separate storage foe Agro-chemicals at each site - Institute the use of proper PPE when applying Chemicals - Institute rangeland management practices • Encourage organic farming - Build capacity of women and youths to be able to assess their problems, analyse, prioritise and come up with solutions on their own – project proposals	- Conduct awareness training & workshops on safe handling of chemicals. - Train farmers in IPMP methods - Project Proposal Development - Handling of poisons

No.	IADP PROGRAMME COMPONENTS	SUMMARY OF RELATED ACTIVITIES	MAIN SAFEGUARDS RISKS OF THOSE ACTIVITIES	MAIN MITIGATING ACTIONS	ANY CAPACITY BUILDING REQUIRED TO DELIVER THOSE ACTIONS
		○ conduct on-farm demonstrations to mainstream innovations. - train and support the local input production and services by youth and women groups/associations: ○ to enhance community-based services. ○ on basic post-harvest handling, storage and value addition. - create youth employment, by training and equipping young men and women as para-vets to administer veterinary services.		- Include waste handling facilities for each value chain - Proper drug hanling training for para-vets.	
2.2	**Subcomponent 2.2:** Sustainable Access to Inputs and Technologies for Enhanced Production and Post-harvest Management	- enhance and professionalise the production and distribution of improved seeds of targeted crops and forages. - develop CSA technologies adapted to various agro-ecological conditions and needs of women and youth, including technologies to reduce post-harvest loses, such as on-farm processing, packaging and storage and food safety/quality. - strengthen producer organisations to professionalize their operations and place them in the value chains. - Organised youths to serve as agricultural service providers for inputs and tools for land preparation, harvesting, threshing, organic fertilizer production, etc. - Support small enterprises that include local processing and value addition, and innovative logistics solutions for transporting agricultural products to markets, such as improved animal driven carts and cold chain.	- Enhancement of production entails use of Agro chemicals , storage and handling. - Post-harvest handling may entail use of chemicals too - Elite capture of Agri-businesses and producer organisations - Local processing and value addition will generate waste and effluents which will need proper handling	- Promote organic farming - Use chemical fertilisers sparingly - Establish Correct storage facilities for agro-chemicals at each project sites - Build capacity of communities to run own businesses to counter elitist capture. - Include waste handling facilities for each value chain	- Business management - Conducting farming as a business - Post harvest handling of produce - Waste management.
2.3	**Subcomponent 2.3:** Producers' Organizations and	- build the capacity of producer organizations on various organisational, technical and business management aspects.	- Side-lining of youth and women-based association in favour of the usual ones.	- Promote youth and women-based association by incentivising those who deal with them.	- Business management - Marketing - Running farming as a business

No.	IADP PROGRAMME COMPONENTS	SUMMARY OF RELATED ACTIVITIES	MAIN SAFEGUARDS RISKS OF THOSE ACTIVITIES	MAIN MITIGATING ACTIONS	ANY CAPACITY BUILDING REQUIRED TO DELIVER THOSE ACTIONS
	Cooperatives Support	- Assists POs, with attention to women and youths-based associations and groups to grow their capacities. - Assist producers' groups and cooperatives to enlarge their membership base, assess the needs of their members, prepare business plans and improve their internal governance, while gradually expanding their marketing and processing operations	- Side lining of youths and women from decision making positions in cooperatives. - Marketing and processing operations will generate waste like effluents and vegetable waste. -	- Reserve a certain percentage of decision-making position in cooperatives funded by the project - Installing Waste management facilities at each site, like septic tanks	
3.0	**Component 3: Capacity Building & Project Support Services**				
3.1	**Subcomponent 3.1:** Institutional Capacity Building and Policy Support.	- Effect institutional capacity building (CB) by providing capacity augmentation to the implementing entities of IADP, o human resources development, o investing in facilities and equipment to support overall institutional development and effective project implementation. - upgrading technical skills of staff through specialized training courses: o Integrated Watershed Management, o Meteorological Support, o GIS-based land use planning, o climate smart agriculture v) procurement management o financial management, o social inclusion o nutrition-sensitive agriculture, o food security and nutrition assessments. - strengthening of the hydro-meteorological capacity along selected watersheds and spate irrigation sites by o procurement and installation of hydro-meteorological station instruments,	- Lack of inclusivity in human resources development. - Investing in facilities may involve construction and/or refurbishments which result is waste generation, dust, noise etc - Segregating and discrimination of others in Specialised training must be all inclusive - Installations of hydrometeorological stations may cause vegetation clearing, soil destabilisation, river bank destabilisation. -	- Institute an all inclusive staff and human development programmme. - Instituting construction waste handling mechanisms, - Specialised training must be all inclusive - Conservation of natural resources dusring various installations and rehabilitating any damages after instalatins, like river bank stabilisation etc. -	- Human resources development.

No.	IADP PROGRAMME COMPONENTS	SUMMARY OF RELATED ACTIVITIES	MAIN SAFEGUARDS RISKS OF THOSE ACTIVITIES	MAIN MITIGATING ACTIONS	ANY CAPACITY BUILDING REQUIRED TO DELIVER THOSE ACTIONS
		○ Training the staff of MoA, MoLWE and Zoba Agricultural Divisions in the management of the systems. - enhance Early Warning Systems (EWS). - development and/or reviewing and updating of policies and strategies of selected subsectors.			
3.2	**Subcomponent 3.2:** Project Management and the South-South Triangular Cooperation (SSTC)	- manage the Project in an efficient and effective manner by: ○ providing overall coordination, ○ including planning and implementation, ○ financial management and control, ○ procurement support, ○ Monitoring and Evaluation, ○ knowledge management, and progress reporting. - liaising and linking up with all other relevant projects/programmes being implemented in the country that seek to address similar or related development - strengthening the SSTC related learning and exchange initiatives with relevant regional and international institutions,	- Derailment of project by disgruntled stakeholders ---stakeholder engagement process should be holistic and all-encompassing and continuous to keep all on board.	- Institute an all-inclusive and continuous stakeholder engagement process.	- Stakeholder engagement approaches.
4.0	**Component 4: Disaster Risk Reduction and Management**				
		- This is a “zero budget allocation” component. - The objective of this component is to avail adequate preparedness and timely response when adverse conditions manifest, such as recurrent weather extremities or any other calamities, such as the recent COVID19 pandemic.	- --------	-	-

Investing in rural people

Eritrea

Integrated Agriculture Development Project

Project Design Report

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

Mission Dates:	8 to 30 June 2020
Document Date:	05/10/2020
Project No.	2000002081
Report No.	5444-ER

East and Southern Africa Division
Programme Management Department

Eritrea

Integrated Agriculture Development Project

Table 1.1. Development and Institutionalization of Participatory Integrated Watershed Management Plans

Detailed Costs

(USD)

		Quantities														Base Cost										
	Unit	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Total	Unit Cost	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
I. Investment Costs																										
A. Improved soil and water conservation and watershed management																										
Carrying out inventory to select intervention watersheds or spates /a	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	13 500	-	-	-	-	13 500	-	-	-	-	-	-
Mapping, intervention planning and detailed design for 40 sites /b	lumpsum	-	-	-	40	-	-	-	-	-	-	-	-	40	100	-	-	-	4 000	-	-	-	-	-	-	-
Total																-	-	-	4 000	13 500	-	-	-	-	-	-

\a In six Zobas (2 weeks per Zoba) by three national MoA staff (Irrigation & SWC engineer, agonomist and livetsock specialists) and two Zobal SWC specialists- assited by consultant for quality enhancement

\b On 10 new watershed SWC, 16 irrigation system (10 on upgraded dams, 5 on new dams of already treated watersheds & 1 on new dam of project treated watershed, ea 10ha),100 shallow wells, 5 spate (ea 250ha) &1drip assisted by consultant for quality enh

Eritrea

Integrated Agriculture Development Project

Table 1.2. Operationalization of Watershed Management Plans

Detailed Costs		**Quantities**														**Base Cost**										
	Unit	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**	**M12**	**Total**	**Unit Cost**	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**
I. Investment Costs																										
A. Watershed Committees and irrigation WUAs formation/strengthening and capacity building																										
Training of trainers (ToTs) /a	mpsı	-	-	-	12	-	-	-	-	-	-	-	-	12	300	-	-	-	3 600	-	-	-	-	-	-	-
Training on participatory planning for 10 new watersheds	rticip	-	-	-	-	100	-	-	-	-	-	-	-	100	200	-	-	-	-	20 000	-	-	-	-	-	-
Training in ag. water management and infrastructure O&M /b	rticip	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
Exchange visits for irrigators /c	rticip	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
Subtotal Watershed Committees and irrigation WUAs formation/strengthening and capacity building																-	-	-	3 600	20 000	-	-	-	-	-	-
B. Implementation process and technical assitance (TA)																										
Consultancies for an International Senior Irrigation and Rural Infrastructure Engineer /d	on/n	-	-	-	12	-	-	-	-	-	-	-	-	12	12.000	-	-	-	144 000	-	-	-	-	-	-	-
Total																-	-	-	147 600	20 000	-	-	-	-	-	-

\a ToTs are 2 national MoA SWC experts assisted by consultant and trainers are six Zoba SWC experts (2 per Zoba) for one week

\b Farmers from 111 irrigation schemes (on average 2 per scheme) for one week (participants from spate and bigger schemes will be more)

\c Two farmers per scheme for 26 irrigation schemes (21 dam based and 5 spate)- location TBD, for one week abroad

\d An international senior irrigation and rural infrastructure engineer with strong background on NRM and IWRM. Cost incl. international travels

Eritrea

Integrated Agriculture Development Project

Table 2.1. Access to Advisory Services

Detailed Costs

(USD)

		Quantities																	
	Unit	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**	**M12**	**Total**	**Unit Cost**	**M1**	**M2**	**M3**	**M4**	**M5**
I. Investment Costs																				
A. Advisory services support																				
1. Farmers Field School Programme Support																				
a. Master Trainers Course																				
MT from East Africa /a	month	-	-	3	3	3	3	3	3	3	3	3	3	30	10.000	-	-	30 000	30 000	30 000
Extensionist MoA- Zobas, allowance /b	month	-	-	24	24	24	24	24	24	24	24	24	24	240	100	-	-	2 400	2 400	2 400
Development of curricula, translation of adapted training material and printing /c	lumpsum	-	-	1	-	-	-	-	-	-	-	-	-	1	6.000	-	-	6 000	-	-
Study field- FFS for MT training /d	FFS	-	-	-	5	5	-	-	-	-	-	-	-	10	500	-	-	-	2 500	2 500
Bicycle per MT	unit	-	-	10	10	10	-	-	-	-	-	-	-	30	450	-	-	4 500	4 500	4 500
Exchanges visits/ FFS participation workshops	Lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Subtotal Master Trainers Course																-	-	42 900	39 400	39 400
b. Training of Facilitators																				
Printing training material /e	printing material	-	-	112	-	-	-	-	-	-	-	-	-	112	20	-	-	2 240	-	-
Study field /f	FFS/AFS	-	-	-	56	56	-	-	-	-	-	-	-	112	500	-	-	-	28 000	28 000
Bicycle per facilitator	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Subtotal Training of Facilitators																-	-	2 240	28 000	28 000
c. FFS Implementation																				
Preparatory phase meetings /g	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
FFS and AFS /h	FFS	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
In-kind farmers' contribution /i	ha	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Subtotal FFS Implementation																-	-	-	-	-
Subtotal Farmers Field School Programme Support																-	-	45 140	67 400	67 400
B. Animal health services																				
1. Para-vet service development																				
Organization and developing training modules	Lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	8.000	-	-	-	8 000	-
Starting kit	kit	-	-	50	50	-	-	-	-	-	-	-	-	100	300	-	-	15 000	15 000	-
Para-vet intense trainings and refresh trainings /j	unit	-	-	-	-	50	50	-	-	-	-	-	-	100	333	-	-	-	-	16 650
Bicycles	unit	-	-	160	160	160	160	-	-	-	-	-	-	640	450	-	-	72 000	72 000	72 000
Mastitis kit	kit	-	-	-	-	50	50	-	-	-	-	-	-	100	20	-	-	-	-	1 000
Total																-	-	132 140	#####	157 050

\a Salary plus allowances per month for 2 MT for FFS and 1 for Agropastoralist Field School (AFS)

\b per person per extensionist - 6 month training for 20 MT FFS and 12 months for 10 MT AFS

\c 1 for pastoralist and 1 CSA developed and at 45 printed

\d 10 study field (one for two MT FFS)

\e 1 for each FFS and AFS, 690 total

\f 1 study field for two facilitators per 7 ToF of 16 people each

\g definition of FFS plan and main subjects to treat on each village

\h average of 20 farmers/ study field and kit

\i Cost per ha: USD 3,000 per month (lease price)

Eritrea

Integrated Agriculture Development Project

Table 2.2. Sustainable Access to Inputs and Technologies for Enhanced Production

Detailed Costs

(USD)

		Quantities													Unit					
	Unit	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**	**M12**	**Total**	**Cost**	**M1**	**M2**	**M3**	**M4**	**M5**
I. Investment Costs																				
A. Seed multiplication																				
1. Seed multipliers enhancement																				
Training of seed multipliers /a	training	-	-	18	-	-	-	-	-	-	-	-	-	18	400	-	-	7 200	-	-
Monitoring and technical capacity building of multipliers /b	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Multiplying material support /c	kit	-	-	180	-	-	-	-	-	-	-	-	-	180	50	-	-	9 000	-	-
Subtotal Seed multipliers enhancement																-	-	16 200	-	-
B. Nutrition - sensitive agriculture																				
1. MIHAP																				
a. MIHAP : Moist low-lands- part of Gash-Barka) perennial river and shallow water availability (wells and irrigation) AND mid-land /d																				
Cow - mix breed (1*hh) /e	head	-	-	-	15	10	-	-	-	-	-	-	-	25	1.151	-	-	-	17 265	11 510
Small ruminants (6*hh) /f	head	-	-	-	75	75	-	-	-	-	-	-	-	150	150	-	-	-	11 250	11 250
Seeds - sorghum/millet , horticulture, forage, sesame - (50kg*hh)	kg	-	-	1 000	1 000	-	-	-	-	-	-	-	-	2 000	10	-	-	10 000	10 000	-
Fruit trees/ wood trees (seedlings)	seed	-	-	-	1 000	-	-	-	-	-	-	-	-	1 000	15	-	-	-	15 000	-
Chicken (25 * hh)	unit	-	-	-	-	1 250	-	-	-	-	-	-	-	1 250	1	-	-	-	-	1 250
Energy-saving cooking stove- full installation cost, including training (1*hh)	inst package	-	-	-	-	-	25	25	-	-	-	-	-	50	135	-	-	-	-	-
Subtotal MIHAP : Moist low-lands- part of Gash-Barka) perennial river and shallow water availability (wells and irrigation) AND mid-land																-	-	10 000	53 515	24 010
b. Adapted MIHAP (mid-land and highland) - (1000hh out of the 4500 hh tagreted by FFSs)																				
Small ruminants (6*hh)	head	-	-	-	100	100	100	-	-	-	-	-	-	300	150	-	-	-	15 000	15 000
Chicken (25 * hh)	chick	-	-	-	-	1 250	-	-	-	-	-	-	-	1 250	1	-	-	-	-	1 250
Wood trees - seedlings (20*hh)	seedlings	-	-	-	500	500	-	-	-	-	-	-	-	1 000	15	-	-	-	7 500	7 500
Seeds - Sorghum/millet, horticulture, forage- (30kg*hh)	kg	-	-	750	750	-	-	-	-	-	-	-	-	1 500	10	-	-	7 500	7 500	-
Beehives (2*hh) - 50 % hh traditional	beehive	-	-	-	-	25	25	-	-	-	-	-	-	50	233	-	-	-	-	5 825
Beehives (2*hh) - 50 % hh modern (for commercial purposes)	beehive	-	-	-	-	25	25	-	-	-	-	-	-	50	347	-	-	-	-	8 675
Energy-saving cooking stove- full installation cost, including training (1*hh)	unit	-	-	-	-	-	-	25	25	-	-	-	-	50	135	-	-	-	-	-
Subtotal Adapted MIHAP (mid-land and highland) - (1000hh out of the 4500 hh tagreted by FFSs)																-	-	7 500	30 000	38 250
c. Mini-MIHAP - support to agropastoralists (arid and semi-arid lowlands, also part of Gash-Barka) (4000 hh out 2067 targted by FFSs)																				
Inputs, tools and equipment for home gardens	kit	-	-	200	-	-	-	-	-	-	-	-	-	200	50	-	-	10 000	-	-
Energy-saving cooking stove- full installation cost, including training (1*hh)	unit	-	-	-	100	100	-	-	-	-	-	-	-	200	135	-	-	-	13 500	13 500
Sesame-sorghum/leguminous seeds (25kg/hh)	kg	-	-	2 500	2 500	-	-	-	-	-	-	-	-	5 000	5	-	-	12 500	12 500	-
Forage/ wood trees seedlings (20*hh)	seedling	-	-	-	2 000	2 000	-	-	-	-	-	-	-	4 000	15	-	-	-	30 000	30 000
Subtotal Mini-MIHAP - support to agropastoralists (arid and semi-arid lowlands, also part of Gash-Barka) (4000 hh out 2067 targted by FFSs)																-	-	22 500	56 000	43 500
Subtotal MIHAP																-	-	40 000	139 515	105 760
2. Food and nutrition education for improved practices																				
Conduct a participatory baseline on Knowledge, Attitudes and Practices (KAP) and diet diversity in the regions (zobas/sub-zobas) of the project	Lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	5.000	-	-	-	-	5 000
Carry out an assessment of locally available foods for developing inproved recipies	Lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Nutrition education expert to prepare a food processing manual and local recipe book for households /g	per/day	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Conduct trainings for extension and health workers workers on TIPS Methodology	per/day	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Conduct trials of improved practices (training of 3 days/ number of ppl to be decided) /h	per/day	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-
Training for lead women and caregivers in the community for improved nutriton /i	per/day	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Establish community kitchens (1 per kebabi) /j	unit/kebabi	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Evaluate the effectiveness of the MIHAP integrated with nutrittion education (KAP survey)	Lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Subtotal Food and nutrition education for improved practices																-	-	-	-	5 000
Total																-	-	56 200	139 515	110 760

_____

\a per type of seed and per Zoba according to the agroecological zone, approximately a cluster of 10 multipliers

\b per diem for monitoring visit of NARI/AED experts

\c initial material

\d 1000hh targeted out of the 2730 hh targetd by FFSs

\e 500 HH targeted for animal distribution (50% of the total HH)

\f 500 HH targeted for animal distribution (50% of the total HH)

\g if not available thourgh the FAO TCP-ERI 3740- 45 days desk work and 26 days field work

\h CHECK - TO ADD MORE ACTIVITIES

\i 2 women/caregiver per village(474 villages) - 2024 and 2025 resfreshemet training. 2 trainers from each sub-zoba, meeting of 2 days at kebabhi level (5 villages)

\j Training or equipement - CHECK

Eritrea

Integrated Agriculture Development Project

Table 2.3. Producers' Organizations (PO) and Cooperatives Support

Detailed Costs

(USD)

		Quantities														Base Co						
	Unit	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Total	Unit Cost	M1	M2	M3	M4	M5	M6	M7
I. Investment Costs																						
A. Agribusiness coaching																						
Working group to document best practice /a	month	-	-	-	1	-	-	-	-	-	-	-	-	1	2.000	-	-	-	2 000	-	-	-
TA mission (int.) for agribusiness manual drafting	month	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Agribusiness manual printing	lumpsum	-	-	0.3	-	-	-	-	-	-	-	-	-	0.3	10.000	-	-	3 000	-	-	-	-
National Consultant for agribusiness coaches training	session	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
International exchange visit /b	visit	-	-	-	-	-	1	-	-	-	-	-	-	1	57.000	-	-	-	-	-	57 000	-
BDS to existing POs, Coop /c	visit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Subtotal Agribusiness coaching																-	-	3 000	2 000	-	57 000	-
B. Creation of new Producers' Organizations (PO)																						
Coaches DSA for new POs establishment and training (6/PO)	training	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Post harvest training	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Exchange visit /d	visit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Subtotal Creation of new Producers' Organizations (PO)																-	-	-	-	-	-	-
C. Agricultural Tool Manufacturers																						
Support to construction and research of best adapted tools /e	lumpsum	-	-	-	0.3	-	-	-	-	-	-	-	-	0.3	50.000	-	-	-	15 000	-	-	-
Vocational trainings of youth	training	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Initial kit support for small tool manufacturers	kit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Subtotal Agricultural Tool Manufacturers																-	-	-	15 000	-	-	-
D. Agricultural service providers youth																						
Support to construction and research of best adapted tools /f	session	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Initial kit support for service providers	kit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Subtotal Agricultural service providers youth																-	-	-	-	-	-	-
E. Piloting aggregation and processing centres																						
Storage facilities, buildings, etc.	PO	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Processing equipment	PO	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Initial working capital /g	PO	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Identification of investment projects	Lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Engineer TA mission (int.) on processing technologies & maintenance training	month	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
National Consultant for partnership dev and collection points organisation	day	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Aggregation points /h	Lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Sesame oil processing unit	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Dairy processing unit	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Small processing unit	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Total																-	-	3 000	17 000	-	57 000	-

\a A meeting and some operational budget to do small studies, printing, holding small workshops etc.

\b One visit lasts one week for a group of 15 members

\c Business plan preparation, Manager training, internship, management coaching, etc.): DSA coaches + national consultants

\d per group of 15 people, 2 times per group

\e together with NARI, for the two main State tool manufacture workshop

\f 1 session per week, during 3 months per youth group- 5 per group 3/ subzoba

\g revolving fund

\h estimated one per 6 Sub-zobas in each of the 6 Zobas

Eritrea

Integrated Agriculture Development Project

Table 3.1. Institutional Capacity Building

Detailed Costs

(USD)

		Quantities														B
	Unit	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Total	Unit Cost	M1
I. Investment Costs																
A. Specialized TA																
1. Advisory services support																
a. Training of Trainers (descentralized)																
Training period allowance /a	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Study field /b	FFS	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Bicycles /c	unit	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Subtotal Training of Trainers (descentralized)																-
b. Breeding improvement support																
Artificial insemination - livestock breed improvement /d	lumpsum	-	-	-	0.18	-	-	-	-	-	-	-	-	0.18	44.262	-
Poultry National breeding centre support (mix- breeds)	Lumpsum	-	-	0.18	-	-	-	-	-	-	-	-	-	0.18	160.000	-
Development of indigenous poultry breeds	Lumpsum	-	-	0.18	-	-	-	-	-	-	-	-	-	0.18	113.000	-
Subtotal Breeding improvement support																-
Subtotal Advisory services support																-
2. Institutional Support																
a. Support to NARI, RSD and AED to improve seed multiplication quality control and capacity building of multipliers																
Seeds protocols development	lumpsum	-	-	0.33	-	-	-	-	-	-	-	-	-	0.33	150.000	-
Capacity building for AED and NARI seed specialist and extensionists	lumpsum	-	-	-	-	0.33	-	-	-	-	-	-	-	0.33	273.000	-
Foundation seed production	lumpsum	-	-	0.18	-	-	-	-	-	-	-	-	-	0.18	100.000	-
Quality seeds control (performance)	lumpsum	-	-	-	-	0.18	-	-	-	-	-	-	-	0.18	85.000	-
Exchanges visits to international institute	lumpsum	-	-	-	-	-	0.5	-	-	-	-	-	-	0.5	30.000	-
Seed purchasing	lumpsum	-	-	0.2	-	-	-	-	-	-	-	-	-	0.2	300.000	-
Subtotal Support to NARI, RSD and AED to improve seed multiplication quality control and capacity building of multipliers																-
b. Support NARI to further research and research action on CSA and organic production																
Organic fertilizers, biopesticides research development	lumpsum	-	-	-	-	0.18	-	-	-	-	-	-	-	0.18	70.000	-
Integrated Pest Management	lumpsum	-	-	-	0.18	-	-	-	-	-	-	-	-	0.18	60.000	-
Time and labour saving technologies adapted to soil conservation applied research	lumpsum	-	-	-	0.18	-	-	-	-	-	-	-	-	0.18	85.670	-
Food safety and nutirion research	lumpsum	-	-	-	-	-	0.18	-	-	-	-	-	-	0.18	85.670	-
Subtotal Support NARI to further research and research action on CSA and organic production																-
c. Support National Animal Health System																
Vaccines and drugs per veterinary clinic /e	lumpsum	-	-	-	-	0.18	-	-	-	-	-	-	-	0.18	615.920	-
Support national vaccines production	lumpsum	-	-	-	-	-	0.18	-	-	-	-	-	-	0.18	390.000	-
NAPHL staff training	lumpsum	-	-	-	0.34	-	-	-	-	-	-	-	-	0.34	58.000	-
Trainings of decentralized health clinics' staff	lumpsum	-	-	-	-	-	-	0.34	-	-	-	-	-	0.34	58.000	-
Subtotal Support National Animal Health System																-
Subtotal Institutional Support																-
3. Environmental practices & education for watershed management																
Procurement and distribution of hand tools & seeds in selected schools	school	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Construction of roof water harvesting in selected schools	school	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Subtotal Environmental practices & education for watershed management																-
4. Improved water resources planning & monitoring capacity																
Procurement & installation of 1st Class meteorological instrument /f	set	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Procurement & installation of bubbler operated hydrological Instrument /g	set	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Data mgt. & communication capacity building of staff /h	Lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Subtotal Improved water resources planning & monitoring capacity																-
5. Capacity Building GIS																
Capacity Building GIS	Lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	112.000	-
Total																-

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	7 967	-	-	-		
-	-	28 800	-	-	-		
-	-	20 340	-	-	-		
-	-	49 140	7 967	-	-		
-	-	49 140	7 967	-	-		
-	-	49 500	-	-	-		
-	-	-	-	90 090	-		
-	-	18 000	-	-	-		
-	-	-	-	15 300	-		
-	-	-	-	-	15 000		
-	-	60 000	-	-	-		
-	-	#####	-	105 390	15 000		
-	-	-	-	12 600	-		
-	-	-	10 800	-	-		
-	-	-	15 421	-	-		
-	-	-	-	-	15 421		
-	-	-	26 221	12 600	15 421		
-	-	-	-	110 866	-		
-	-	-	-	-	70 200		
-	-	-	19 720	-	-		
-	-	-	-	-	-		
-	-	-	19 720	110 866	70 200		
-	-	#####	45 941	228 856	100 621		
-	-	-	-	-	-		
-	-	-	-	-	-		
-	-	-	-	-	-		
-	-	-	-	-	-		
-	-	-	-	-	-		
-	-	-	-	-	-		
-	-	-	-	-	-		
-	-	-	-	112 000	-		
-	-	#####	53 908	340 856	100 621		

\a Mobility to the Zoba and daily allowance

\b for pastoralism and for CSA

\c moto or bicycle -CLARIFY

\d semen+ insemination accessories+ eartags

\e for sub-zoba clinics

\f Meaures rainfall, temperatures, humidity, sunshine hours, wind etc. in selected watersheds (one per Zoba)

\g In three selected major drainage systems or watersheds (incl. items listed above but uses the same building)

\h Training of 8 staff of MLWE (2 from national level and 6 from Zobas), for one month by a consultant at Asmara

Eritrea

Integrated Agriculture Development Project

Table 3.2. Project Management and South South trianglular cooperation

Detailed Costs

(USD)

		Quantities																			
	Unit	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Total	Unit Cost	M1	M2	M3	M4	M5	M6
I. Investment Costs																					
A. National Project Coordination Unit																					
1. Project Coordination																					
Supervision visit by Management	lumpsum	-	-	-	-	-	-	-	-	1	-	-	-	1	15.000	-	-	-	-	-	-
Supervision visit to Zobas by NPCO staff & other experts	lumpsum	-	-	-	-	-	-	-	1	-	-	-	-	1	15.000	-	-	-	-	-	-
Supervision visit by Management	lumpsum	-	-	-	-	-	-	1	-	-	-	-	-	1	10.000	-	-	-	-	-	-
Technical assistance for procurement	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	12.000	-	-	-	-	12 000	-
																-	-	-	-	12 000	-
Project completion report PCR and impact assessement	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Socio-Economic impact survey	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	40.000	-	-	-	-	40 000	-
Baseline Survey	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	50.000	-	-	-	-	50 000	-
																-	-	-	-	90 000	-
Comprehensive BLS	lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	20.000	-	-	-	20 000	-	-
Knowledge management	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	30.000	-	-	-	-	-	30 000
Preparation & Production of documentary films	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Knowledge sharing workshops	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	8.000	-	-	-	-	8 000	-
Public awareness nutrition and food technology	lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	6.000	-	-	-	6 000	-	-
Communication materials production	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	15.000	-	-	-	-	-	15 000
																-	-	-	26 000	8 000	45 000
Short Term Training for Project Support Staff	lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	50.000	-	-	-	50 000	-	-
Training Workshops (AWP&B, M&E, procurement…)	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	7.500	-	-	-	-	7 500	-
Training on Advanced Project Management & Teambuilding	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	20.000	-	-	-	-	20 000	-
Training on Project M&E and KM	lumpsum	-	-	-	-	-	-	-	1	-	-	-	-	1	9.000	-	-	-	-	-	-
Training on Financial Management	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	10.100	-	-	-	-	10 100	-
Training on Procurement, Contracts & Tendering Management	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	10.100	-	-	-	-	-	10 100
Traning on computer software	lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	4.000	-	-	-	4 000	-	-
Implementation review workshop	lumpsum	-	-	-	-	-	-	-	1	-	-	-	-	1	6.000	-	-	-	-	-	-
IFAD Regional Stakeholder Workshop	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	5.000	-	-	-	-	-	5 000
																-	-	-	54 000	37 600	15 100
																-	-	-	80 000	147 600	60 100
B. Human Resource Development and Training Division (HRD)																					
Procurement of equipment	lumpsum	-	-	1	-	-	-	-	-	-	-	-	-	1	15.000	-	-	15 000	-	-	-
Staff training on journalism and journalistic writing	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	8.000	-	-	-	-	8 000	-
Staff training on film directing	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Staff training on video and photo shooting	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Staff training on video archiving	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Staff training on Web-design and publications	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	2.500	-	-	-	-	-	2 500
Procurement of softwares	lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	15.000	-	-	-	15 000	-	-
Staff training on graphics design	lumpsum	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
																-	-	15 000	15 000	8 000	2 500
Needs assessment workshop	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	10.000	-	-	-	-	10 000	-
Preparation of plan for capacity building	lumpsum	-	-	-	1	-	-	-	-	-	-	-	-	1	20.000	-	-	-	20 000	-	-
Consultancy services to prepare guidelines and manuals	lumpsum	-	-	1	-	-	-	-	-	-	-	-	-	1	20.000	-	-	20 000	-	-	-
Skill upgrading of staff on different subjects	lumpsum	-	-	-	-	1	-	-	-	-	-	-	-	1	180.000	-	-	-	-	180 000	-
																-	-	20 000	20 000	190 000	-
Total Investment Costs																-	-	35 000	115 000	345 600	62 600
II. Recurrent Costs																					
A. Staff Project Coordination Unit																					
NPCO IADP Coordinator	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Component A Coordinator	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Component A Technical Expert	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Component B Coordinator	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Component B Technical Experts (2 people)	Person/month	2	2	2	2	2	2	2	2	2	2	2	2	24	233	466	466	466	466	466	466
Component C Coordinator	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
																1 398	1 398	1 398	1 398	1 398	1 398
M&E Senior Officer (team lead)	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Planning Officer	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
M&E Officer	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
KM Officer	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Social Inclusion Officer	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
																1 165	1 165	1 165	1 165	1 165	1 165
Senior Procurement Controller	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Senior Financial Controller	Person/month	1	1	1	1	1	1	1	1	1	1	1	1	12	233	233	233	233	233	233	233
Procurement Assistants	Person/month	3	3	3	3	3	3	3	3	3	3	3	3	36	199	597	597	597	597	597	597
Accountant	Person/month	3	3	3	3	3	3	3	3	3	3	3	3	36	199	597	597	597	597	597	597
																1 660	1 660	1 660	1 660	1 660	1 660
Zoba Project Coordinator	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
M&E & Planning Senior Expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
M&E and KM Expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
Social Inclusion / Mobilizing Expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
Irrigation expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
Extension expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
Agribusiness expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
Procurement Expert	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	233	1 398	1 398	1 398	1 398	1 398	1 398
Accountant	Person/month	6	6	6	6	6	6	6	6	6	6	6	6	72	199	1 194	1 194	1 194	1 194	1 194	1 194
																12 378	12 378	12 378	12 378	12 378	12 378
Subtotal Staff Project Coordination Unit																16 834	16 834	16 834	16 834	16 834	16 834
B. National Project Coordination Unit																					
Refreshment for periodic meetings	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	4.000	-	-	-	-	-	4 000
Car rent	lumpsum	-	-	-	-	-	1	-	-	-	-	-	-	1	8.000	-	-	-	-	-	8 000
Audit charges	lumpsum	-	-	-	-	-	-	-	-	-	-	-	1	1	2.000	-	-	-	-	-	-
Telephone, FAX, mailing and Internet charges	lumpsum	-	-	-	-	-	-	1	-	-	-	-	-	1	50.000	-	-	-	-	-	-
Vehicle running cost	lumpsum	-	-	1	-	-	-	-	-	-	-	-	-	1	6.000	-	-	6 000	-	-	-
Office materials,computers & Stationery	lumpsum	-	-	1	-	-	-	-	-	-	-	-	-	1	3.000	-	-	3 000	-	-	-
Subtotal Operating Costs Project Coordination Unit																-	-	9 000	-	-	12 000
Total																16 834	16 834	60 834	131 834	362 434	91 434

Investing in rural people

Eritrea

Integrated Agriculture Development Project

Project Design Report

Annex 7: Procurement Plan for first 18 months

Mission Dates:	8 to 30 June 2020
Document Date:	05/10/2020
Project No.	2000002081
Report No.	5444-ER

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.

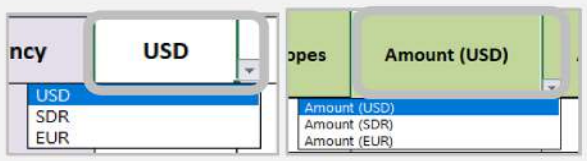
Prior Review Thresholds

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



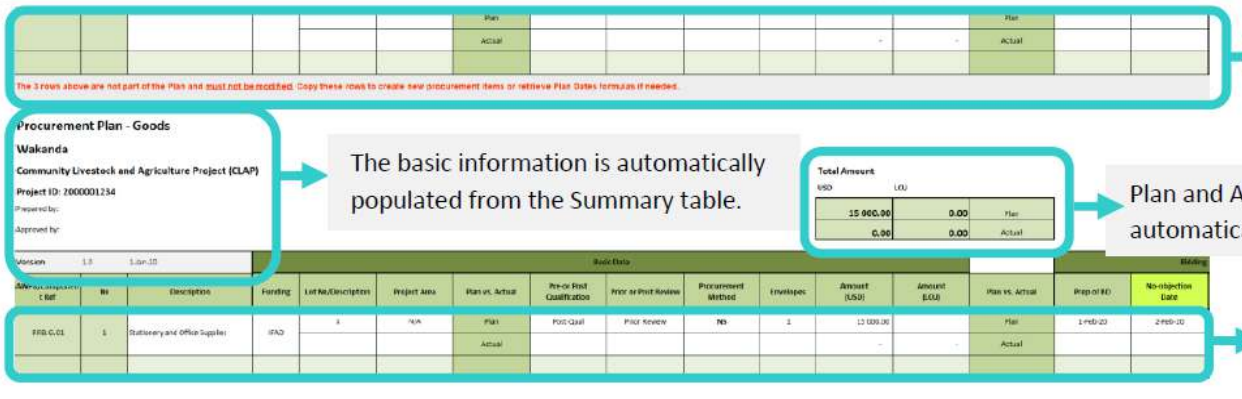
Note: If currency is neither USD nor LOCAL CURRENCY, modify the USD labels in the template using the dropdowns where provided or typing directly if required option is not available.

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



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

	EOI Shortlist Procedure						
Plan vs. Actual	Submission of REOI	No Objection Date	REOI Launch Date	EOI Submission Deadline	Submission of Shortlist Report	No Objection Date	Submission o 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

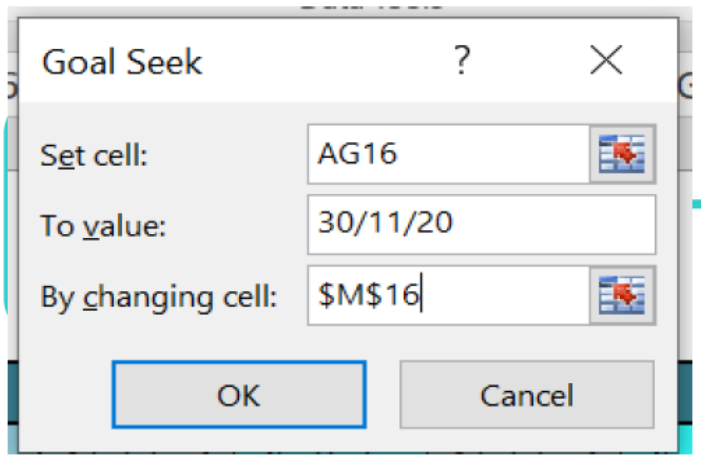
Planned dates provided by the formulas are not prescriptive and may be modified as needed.

- **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.

Goods & Works

Procurement Method	Bid Invitation Date			Bid Closing-Opening			Su Tec	
	Min	Max	Approx	Min	Max	Approx	Min	
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	0 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	

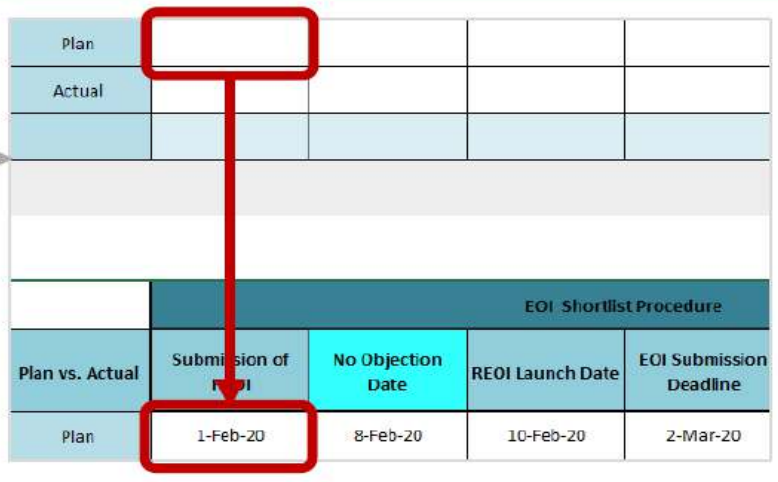
ACTION: Identify the **Approx** cell value for the step in the process, and procurement method for which you wish to modify the timeline, and change the number of days.
Note: Cells will be highlighted for your attention if the value entered is below the Minimum number of days (as shown in this example).

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.



Entering Actual Dates and Information

AWPB/Component Ref	№	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 Assesment	IFAD	All targeted districts	Plan	Yes	Prior Review	QCBS	64 000.00		Plan
				All targeted districts	Actual	Yes	Prior Review	QCBS	-	-	Actual
							view	ICS			

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

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

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

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.

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

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	№	Description	Funding	Lot №/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 №/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	NS	1	25 000.00
1. Desktops	N/A		Post-Qual	Post Review	NS	1	15 000.00
2. Monitors	N/A	Actual	Post-Qual	Post Review	NS	1	10 000.00

Total Amount

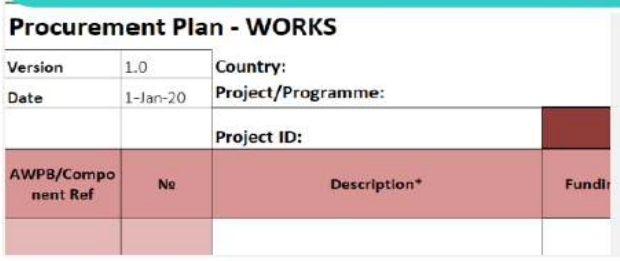
USD	LCU	
25 000.00	0.00	Plan
25 000.00	0.00	Actual

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.

Adding Rows for New Procurement Items

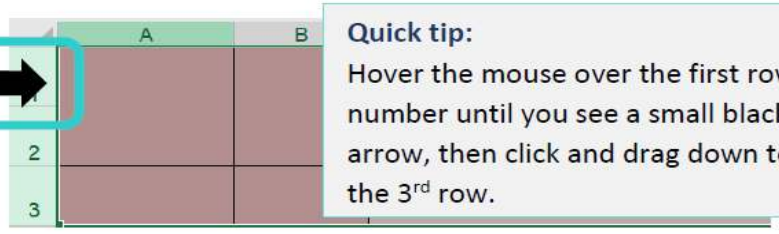


For all worksheets (Goods, Works, Consulting), 3 rows (Planned row, Actual row, and the blank row) are provided at the top of the worksheet, before the start of the Procurement Plan.

Do not modify or delete these rows. They are not part of the Plan and serve only to create new procurement items or retrieve formulas if needed.

To add rows for a new procurement item

1 **Scroll to the top of the worksheet and select the first 3 rows.**

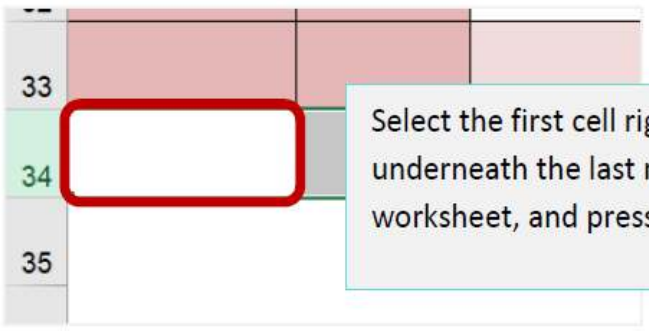


Quick tip:
Hover the mouse over the first row number until you see a small black arrow, then click and drag down to the 3rd row.

2 **Copy the selected rows**

Right click anywhere within the selected area and select **Copy** on the dropdown menu.
OR press **CTRL + C** on the keyboard.

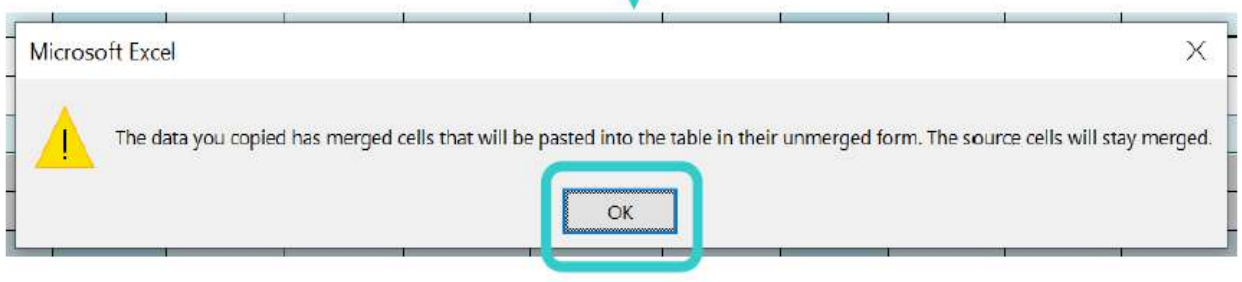
3 **Paste the rows at the end of the Plan**



Select the first cell right underneath the last row in the worksheet, and press **CTRL + V**

4

Click **OK** on the following popup.



Things to Note

- Do not insert or delete a column in the **Time Estimation** worksheet;
- Users are advised against inserting or deleting columns in the worksheets for Goods, Works, Consulting. If this is necessary, please note that the automation will be lost and manual entry will be required;
- Do not copy rows and columns from other Plan worksheets to paste in a worksheet;
- Users of the Plan are advised not to change any of the formulas in the document, with the exception of changing dates (a copy of the formulas are provided at the top of every worksheet for new rows or inadvertent deletions).

Procurement Plan SUMMARY

Country:	Eritrea
Project Name:	Integrated Agriculture Development Project (IADP)
Project ID:	
Version	1.0
Version Date	11-Jun-20
Prepared by:	
Approved by:	

Procurement Category	Plan		Actual	
Currency	**USD**	**LCU**	**USD**	**LCU**
Goods	1 066 053.00	-	629 135.00	-
Works	8 000.00	-	-	-
Consulting Services	925 590.00	-	640 340.00	-
TOTAL	**1 999 643.00**	**-**	**1 269 475.00**	**-**

Prior Review Thresholds

Thresholds	Goods	Works	Non-Consulting Services	Firms - Consulting Services	Individuals - Consulting Services
Prior Review	≥ US$ 50 000	≥ US$ 100 000	≥ US$ 0.00	≥ US$ 30 000	≥ US$ 30 000

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

Procurement Method Thresholds

	Shopping	NCB	ICB
Goods	< US$ 50 000	≥ US$ 50 000 to ≤ US$ 150 000	> US$ 150 000
Works	< US$ 145 000	≥ US$ 145 000 to ≤ US$ 500 000	> US$ 500 000
Non-Consulting Services	< US$ 0.00	≥ US$ 0.00 to ≤ US$ 0.00	> US$ 0.00
	ICS/CQS	**LCS**	**QCBS**
Individuals	< US$ 50 000	≥ US$ 50 000 to ≤ US$ 80 000	> US$ 80 000
Firms	< US$ 50 000	≥ US$ 50 000 to ≤ US$ 80 000	> US$ 80 000

Procurement Plan - Goods

Eritrea

Integrated Agriculture Development Project (IADP)

Project ID:

Prepared by:

Approved by:

Total Amount

USD	LCU	
1 066 053.00	**0.00**	Plan
629 135.00	**0.00**	Actual

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	11-Jun-20																														
			Basic Data											**Pre-Qualification**						**Bidding Process**				**Bid Evaluation**					**Contract Award & Signature**			
AWPB/Component Ref	**Nr**	**Description**	**Funding**	**Lot Nr/Description**	**Project Area**	**Plan vs. Actual**	**Pre-or Post Qualification**	**Prior or Post Review**	**Procurement Method**	**Envelopes**	**Amount (USD)**	**Amount (LCU)**	**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&Standstill**	**Date Contract Award**	**Date Contract Signature**
2.1/line 14; 2.1/line 20; 2.3/line 12	1	Printing	IFAD	3 Lots		Plan	Post-Qual	Post Review	**NS**	1	15 360.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	1-Jun-21	N/A	2-Jun-21	16-Jun-21	N/A	N/A	23-Jun-21	N/A	Plan	23-Jun-21	25-Jun-21	27-Jun-21
				Development of curricula, translation of adapted training material and printing		Actual	Post-Qual	Post Review	**NS**	1	9 000.00	-	Actual															Actual			
				Printing training material		Actual	Post-Qual	Post Review	**NS**	1	3 360.00	-	Actual																		
				Agribusiness manual printing		Actual	Post-Qual	Post Review	**NS**	1	3 000.00	-	Actual															Actual			
1/line 16; 2.1/line 3	2	Bicycles	IFAD	2 Lots		Plan	Post-Qual	Prior Review	**ICB**	1	301 500.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	15-Jun-21	22-Jun-21	24-Jun-21	8-Aug-21	N/A	N/A	29-Aug-21	5-Sep-21	Plan	17-Sep-21	24-Sep-21	26-Sep-21
				Bicycle per MT		Actual					30 000.00	-	Actual															Actual			
				Bicycles		Actual					288 000.00	-	Actual															Actual			
2.1/line 33	3	Starting kit	IFAD			Plan	Post-Qual	Post Review	**IS**	1	30 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	2-Jul-21	N/A	3-Jul-21	17-Jul-21	N/A	N/A	24-Jul-21	N/A	Plan	24-Jul-21	26-Jul-21	28-Jul-21
						Actual					-	-	Actual															Actual			
2.1/line 36	4	Mastitis kit	IFAD			Plan	Post-Qual	Post Review	**IS**	1	2 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	5-Jul-21	N/A	6-Jul-21	20-Jul-21	N/A	N/A	27-Jul-21	N/A	Plan	27-Jul-21	29-Jul-21	31-Jul-21
						Actual					-	-	Actual															Actual			
2.2/line 13	5	Multiplying material support	IFAD			Plan	Post-Qual	Post Review	**IS**	1	9 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	12-Jul-21	N/A	13-Jul-21	27-Jul-21	N/A	N/A	3-Aug-21	N/A	Plan	3-Aug-21	5-Aug-21	7-Aug-21
						Actual					-	-	Actual															Actual			
2.2/line 18; 2.2/line 19; 2.2/line 22; 2.2/line 26; 2.2/line 27	6	Ruminants and chickens	IFAD	3 Lots		Plan	Post-Qual	Prior Review	**NCB**	1	98 775.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	19-Jul-21	26-Jul-21	28-Jul-21	11-Sep-21	N/A	N/A	25-Sep-21	2-Oct-21	Plan	14-Oct-21	21-Oct-21	23-Oct-21
				1. Cow - mix breed (1*hh)		Actual					28 775.00	-	Actual															Actual			
				2. Small ruminants (6*hh)		Actual					67 500.00	-	Actual															Actual			
				3. Chicken (25 * hh)		Actual					2 500.00	-	Actual															Actual			
2.2/line 20; 2.2/line 21; 2.2/line 28; 2.2/line 29; 2.2/line 37; 2.2/line 38; 3.1/line 29	7	Seeds and trees	IFAD	7 Lots		Plan	Post-Qual	Prior Review	**ICB**	1	210 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	26-Jul-21	2-Aug-21	4-Aug-21	18-Sep-21	N/A	N/A	9-Oct-21	16-Oct-21	Plan	28-Oct-21	4-Nov-21	6-Nov-21
				Seeds - sorghum/millet , horticulture, forage, sesame - (50kg*hh)		Actual					20 000.00	-	Actual															Actual			
				Fruit trees/ wood trees (seedlings)		Actual					15 000.00	-	Actual															Actual			
				Wood trees - seedlings (20*hh)		Actual					15 000.00	-	Actual															Actual			
				Seeds - Sorghum/millet, horticulture, forage- (30kg*hh)		Actual					15 000.00	-	Actual															Actual			
				Sesame- sorghum/leguminous seeds (25kg/hh)		Actual					25 000.00	-	Actual															Actual			
				Forage/ wood trees- seedlings (20*hh)		Actual					60 000.00	-	Actual															Actual			
				Seeds purchasing		Actual					60 000	-	Actual															Actual			
2.2/line 23; 2.2/line 32; 2.2/line 36	8	Energy-saving cooking stoves- full installation cost, including training (1*hh)	IFAD			Plan	Post-Qual	Post Review	**IS**	1	40 500.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	26-Jul-21	N/A	27-Jul-21	10-Aug-21	N/A	N/A	17-Aug-21	N/A	Plan	17-Aug-21	19-Aug-21	21-Aug-21
						Actual					-	-	Actual															Actual			
2/line 30; 2.2/line 3	9	Beehives		2 Lots		Plan	Post-Qual	Post Review	**IS**	1	29 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	2-Aug-21	N/A	3-Aug-21	17-Aug-21	N/A	N/A	24-Aug-21	N/A	Plan	24-Aug-21	26-Aug-21	28-Aug-21
				Beehives (2*hh) - 50 % hh traditional		Actual					11 650.00	-	Actual															Actual			
				Beehives (2*hh) - 50 % hh modern (for commercial purposes)		Actual					17 350.00	-	Actual															Actual			
2.2/line 35	10	Inputs, tools and equipment for home gardens				Plan	Post-Qual	Post Review	**IS**	1	10 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	2-Aug-21	N/A	3-Aug-21	17-Aug-21	N/A	N/A	24-Aug-21	N/A	Plan	24-Aug-21	26-Aug-21	28-Aug-21
						Actual					-	-	Actual															Actual			
3.1/line 17	11	Artificial insemination - livestock breed improvement (semen+ insemination accessories+ eartags)				Plan	Post-Qual	Post Review	**IS**	1	7 697.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	9-Aug-21	N/A	10-Aug-21	24-Aug-21	N/A	N/A	31-Aug-21	N/A	Plan	31-Aug-21	2-Sep-21	4-Sep-21
						Actual					-	-	Actual															Actual			

Procurement Plan - Goods

Eritrea

Integrated Agriculture Development Project (IADP)

Project ID:

Approved by:

Prepared by:

Total Amount

USD	LCU	
8 000.00	**0.00**	Plan
0.00	**0.00**	Actual

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 11-Jun-20			Basic Data									
AWPB/Component Ref	**№**	**Description**	**Funding**	**Lot №/Description**	**Project Area**	**Plan vs. Actual**	**Pre-or Post Qualification**	**Prior or Post Review**	**Procurement Method**	**Envelopes**	**Amount (USD)**	**Amount (LCU)**
3.1/line 46	1	Construction of roof water harvesting in selected schools	IFAD			Plan						
						Actual					-	-
3.2/line 98	2	car rent	IFAD			Plan	Post-Qual	Post Review	**NS**	1	8 000.00	
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-
						Plan						
						Actual					-	-

		Pre-Qualification						Bidding Process				Bid Evaluation					Contract Award & Signature		
AWPB/Component Ref	**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&Standstill**	**Date Contract Award**	**Date Contract Signature**
3.1/line 46	Plan															Plan			
	Actual																		
3.2/line 98	Plan	N/A	N/A	N/A	N/A	N/A	N/A	4-Jun-21	N/A	5-Jun-21	19-Jun-21	N/A	N/A	26-Jun-21	N/A	Plan	26-Jun-21	28-Jun-21	30-Jun-21
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			
	Plan															Plan			
	Actual															Actual			

Procurement Plan - Consulting

Eritrea

Integrated Agriculture Development Project (IADP)

Project ID:

Approved by:

Prepared by:

Total Amount

USD	LCU	
925 590.00	**0.00**	Plan
640 340.00	**0.00**	Actual

Selection Methods
QCBS: Quality and Cost-Based Selection
QBS: Quality-Based Selection
CQS: Selection by Consultants' Qualifications
LCS: Least-Cost Selection
FBS Fixed Budget Selection
ICS: Individual Consultants Selection
SSS: Sole Source Selection

Version 1.0 1-Oct-18

			Basic Data								EOI Shortlist Procedure						Proposal Process				Evaluation					Contract Award & Signature					
AWPB/Component Ref	**№**	**Description***	**Funding**	**Project Area**	**Plan vs. Actual**	**Shortlist (Yes|No)**	**Prior or Post Review**	**Procurement Method**	**Amount (USD)**	**Amount (LCU)**	**Plan vs. Actual**	**Submission of REOI**	**No Objection Date**	**REOI Launch Date**	**EOI Submission Deadline**	**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**	**Submission of Draft Contract and MoN**	**No-objection Date**	**Date Contract Award**	**Date Contract Signature**
1.1/line 10	1	Carrying out inventory to select intervention watersheds or spates	IFAD		Plan	No	Post Review	ICS	20 250.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	2-Jun-21	N/A	4-Jun-21	25-Jun-21	9-Jul-21	N/A	N/A	N/A	Plan	21-Jul-21	4-Aug-21	8-Aug-21	N/A	10-Aug-21	17-Aug-21
					Actual				-	-	Actual															Actual						
1.1/line 11	2	Mapping, intervention planning and detailed design for 40 sites	IFAD		Plan	No	Post Review	ICS	6 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	16-Jun-21	N/A	18-Jun-21	9-Jul-21	23-Jul-21	N/A	N/A	N/A	Plan	4-Aug-21	18-Aug-21	22-Aug-21	N/A	24-Aug-21	31-Aug-21
					Actual				-	-	Actual															Actual						
1.2/line 9; 1.2/line 12	3	2 Lots 1. MT from East Africa 2. Training of Trainers (w. Consultant assistance)	IFAD		Plan	Yes	Prior Review	QCBS	455 400.00		Plan	30-Jun-21	7-Jul-21	9-Jul-21	30-Jul-21	13-Aug-21	20-Aug-21	24-Aug-21	31-Aug-21	2-Sep-21	17-Oct-21	31-Oct-21	7-Nov-21	21-Nov-21	28-Nov-21	Plan	10-Dec-21	31-Dec-21	4-Jan-22	11-Jan-22	13-Jan-22	20-Jan-22
					Actual				450 000.00	-	Actual															Actual						
					Actual				5 400.00	-	Actual																					
1.2/line 15	4	Consultancies for an International Senior Irrigation and Rural Infrastructure Engineer	IFAD		Plan	Yes	Prior Review	QCBS	216 000.00		Plan	1-Jul-21	8-Jul-21	10-Jul-21	31-Jul-21	14-Aug-21	21-Aug-21	25-Aug-21	1-Sep-21	3-Sep-21	18-Oct-21	1-Nov-21	8-Nov-21	22-Nov-21	29-Nov-21	Plan	11-Dec-21	1-Jan-22	5-Jan-22	12-Jan-22	14-Jan-22	21-Jan-22
					Actual				-	-	Actual															Actual						
2.1/line 32	5	Organization and developing training modules (para-vet services)	IFAD		Plan	No	Post Review	LCS	12 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	15-Jul-21	N/A	17-Jul-21	11-Aug-21	25-Aug-21	N/A	8-Sep-21	N/A	Plan	20-Sep-21	11-Oct-21	15-Oct-21	N/A	17-Oct-21	24-Oct-21
					Actual				-	-	Actual															Actual						
2.1/line 34	6	Para-vet intense trainings and refresh trainings	IFAD		Plan	No	Prior Review	CQS	33 300.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	30-Jul-21	6-Aug-21	8-Aug-21	29-Aug-21	12-Sep-21	19-Sep-21	N/A	N/A	Plan	1-Oct-21	15-Oct-21	19-Oct-21	26-Oct-21	28-Oct-21	4-Nov-21
					Actual				-	-	Actual															Actual						
2.2/line 11	7	Training of seed multipliers	IFAD		Plan	No	Post Review	CQS	7 200.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	6-Aug-21	N/A	8-Aug-21	29-Aug-21	12-Sep-21	N/A	N/A	N/A	Plan	24-Sep-21	8-Oct-21	12-Oct-21	N/A	14-Oct-21	21-Oct-21
					Actual				-	-	Actual															Actual						
2.3/line 11; 3.2/line 55;	8	TA mission on manual drafting	IFAD	2 Lots	Plan				Estimated amount tbd		Plan															Plan						
				TA mission (int.) for agribusiness manual drafting	Actual				-	-	Actual															Actual						
				Consultancy services to prepare guidelines and manuals	Actual				20 000.00	-	Actual															Actual						
3.2/line 14;	9	Technical assistance for procurement	IFAD		Plan	No	Post Review	ICS	18 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	20-Aug-21	N/A	22-Aug-21	12-Sep-21	26-Sep-21	N/A	N/A	N/A	Plan	8-Oct-21	22-Oct-21	26-Oct-21	N/A	28-Oct-21	4-Nov-21
					Actual				-	-	Actual															Actual						
3.2/line 18; 3.2/line 19; 2.2/line 42	10	surveys	IFAD	3 Lots	Plan	No	Prior Review	QCBS	115 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	23-Aug-21	30-Aug-21	1-Sep-21	16-Oct-21	30-Oct-21	6-Nov-21	20-Nov-21	27-Nov-21	Plan	9-Dec-21	30-Dec-21	3-Jan-22	10-Jan-22	12-Jan-22	19-Jan-22
				1. Socio Economic Impact survey	Actual				60 000.00	-	Actual															Actual						
				2. Baseline survey	Actual				50 000.00	-	Actual															Actual						
				3. Conduct a participatory baseline on Knowledge, Attitudes and Practices (KAP) and diet diversity in the regions (zobas/sub-zobas) of the project	Actual				5 000.00	-	Actual															Actual						
3.2/line 99	11	Audit charges	IFAD		Plan	No	Post Review	CQS	3 000.00		Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1-Sep-21	22-Sep-21	6-Oct-21	N/A	N/A	N/A	Plan	18-Oct-21	1-Nov-21	5-Nov-21	N/A	7-Nov-21	14-Nov-21
					Actual				-	-	Actual															Actual						

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			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 of NOITA & Standstill			Date Contract Award			Date Contract Signature			Totals			
	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Approx Months/Days
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	7	10	7	1	3	1	5	21	14	0	0	0	0	0	0	1	7	7	7	10	7	0	0	0	1	3	2	1	3	2	**24**	**60**	**40**	**1m 9d**
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	7	10	7	1	3	2	30	45	45	0	0	0	0	0	0	3	21	14	7	10	7	11	15	12	7	14	7	1	5	2	**68**	**130**	**96**	**3m 5d**
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	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	3	21	21	7	10	7	11	15	12	7	14	7	1	5	2	**83**	**155**	**103**	**3m 12d**
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	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	3	21	21	7	10	7	11	15	12	7	14	7	1	5	2	**83**	**155**	**103**	**3m 12d**
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	7	10	7	1	3	2	30	45	45	0	0	0	0	0	0	7	21	14	7	10	7	11	15	12	1	5	5	1	5	2	**110**	**206**	**164**	**5m 13d**
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	7	10	7	1	3	2	45	70	45	0	0	0	0	0	0	7	21	21	7	10	7	11	15	12	1	5	5	1	5	2	**125**	**231**	**171**	**5m 19d**
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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	7	10	7	1	3	1	7	30	14	0	0	0	0	0	0	3	21	7	7	10	7	0	0	0	7	14	7	1	5	2	**34**	**96**	**45**	**1m 14d**
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	7	10	7	1	3	2	30	45	45	3	21	3	7	10	7	3	7	7	7	10	7	11	15	12	7	14	7	1	5	2	**78**	**147**	**99**	**3m 8d**
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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	7	10	7	1	3	2	45	70	45	3	21	21	7	10	7	3	7	7	7	10	7	11	15	12	7	14	7	1	5	2	**93**	**172**	**117**	**3m 26d**
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	7	10	7	1	3	2	30	45	45	7	21	14	7	10	7	3	7	7	7	10	7	11	15	12	1	5	5	1	5	2	**120**	**223**	**178**	**5m 26d**
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	7	10	7	1	2	2	45	70	45	7	21	21	7	10	7	3	7	7	7	10	7	11	15	12	1	5	5	1	5	2	**135**	**247**	**185**	**6m 3d**
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	7	10	7	1	2	2	45	70	45	7	21	21	7	10	7	3	7	7	7	10	7	11	15	12	1	5	5	1	5	2	**135**	**247**	**185**	**6m 3d**

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			No-objection Date			RFP/RCQ Launch Date			Proposal submission deadline			Submission of TER			No-objection Date			Submission of CER			No-objection Date			Issue of NOITA & Standstill			Negotiations completed			Submission of Draft Contract and MoN			No-objection Date			Date Contract Award			Date Contract Signature			Totals			
	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	Max	Approx	Min	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]	1	4	N/A- Start Date	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	1	7	4	7	10	7	1	3	2	45	60	45	14	21	14	7	10	7	7	14	14	7	10	7	11	15	12	14	21	21	3	14	4	7	10	7	1	3	2	**170**	**283**	**206**	**6m 23d**
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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	7	10	7	1	3	2	21	60	45	14	21	14	7	10	7	0	0	0	0	0	0	11	15	12	14	21	21	3	14	4	7	10	7	1	3	2	**132**	**259**	**183**	**6m 1d**
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	7	10	7	1	3	2	14	30	21	14	21	14	7	10	7	0	0	0	0	0	0	11	15	12	7	14	14	3	14	4	7	10	7	1	3	2	**118**	**220**	**152**	**4m 31d**
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QCBS [no/Shortlist]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A- Start Date	7	10	7	1	3	2	45	60	45	14	21	14	7	10	7	7	14	14	7	10	7	11	15	12	14	21	21	3	14	4	7	10	7	1	3	2	**136**	**205**	**149**	**4m 28d**
FBS [no/Shortlist]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	N/A- Start Date	7	10	7	1	3	2	14	30	21	7	21	14	7	10	7	7	14	14	7	10	7	11	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	**88**	**173**	**125**	**4m 4d**
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QBS [no/Shortlist]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	N/A- Start Date	7	10	7	1	3	2	21	60	45	14	21	14	7	10	7	0	0	0	0	0	0	11	15	12	14	21	21	3	14	4	7	10	7	1	3	2	1	7	7	**88**	**181**	**128**	**4m 7d**
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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

Investing in rural people

Eritrea

Integrated Agriculture Development Project

Project Design Report

Annex 8: Project Implementation Manual (PIM)

Mission Dates:	8 to 30 June 2020
Document Date:	05/10/2020
Project No.	2000002081
Report No.	5444-ER

East and Southern Africa Division
Programme Management Department

Investing in rural people

The State of Eritrea

Integrated Agriculture Development Project (IADP)

ANNEX 8: PROJECT IMPLEMENTATION MANUAL (PIM)

OVERVIEW OF THE PROJECT IMPLEMENTATION MANUAL

DETAILED TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF TEXTBOXES

ACRONYMS

AED	Agricultural Extension Department
AFAAS	African Forum for Agricultural Advisory Services
AfDB	African Development Bank
AWPB	Annual Work Plan and Budget
BCC	Behavior Change Communication
BDS	Business Development Services
BoQ	Bills of Quantity
CAADP	Comprehensive Africa Agriculture Development Programme
CSO	Civil Society Organization
DAP	Draught Animal Power
EA FS Hub	Eastern Africa Field School Hub
EPHS	Eritrea Population and Health Survey
ESMF	Environmental and Social Management Framework
EU	European Union
EWAA	Eritrean Women Agribusiness Association
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmers' Field School
FM	Financial Management
FNE	Food and Nutrition Education
GESI	Gender and Social Inclusion
GIS	Geographic Information System
GoSE	Government of the State of Eritrea
HH	Households
HRD	Human Resources Department
IA	Implementing Agency
IADP	Integrated Agriculture Development Programme
ICARDA	International Centre for Agricultural Research in the Dry Areas
IGA	Income Generating Activity
IPM	Integrated Pest Management
IWRM	Integrated Water Resources Management
KM&L	Knowledge Management and Learning
M&E	Monitoring and Evaluation
MCU	Marketing and Credit Unit
MIHAP	Minimum Integrated Household Agricultural Package
MMR	Ministry of Marine Resources
MoA	Ministry of Agriculture
MoLG	Ministry of Local Government
MoLWE	Ministry of Land, Water and Environment
MoT	Ministry of Trade
MT	Master Trainer
MTR	Mid-Term Review
NAP	National Agriculture Project
NAPHL	National Animal and Plant Health Laboratory
NARI	National Agriculture Research Institute
NPCO	National Project Coordination Office
NSC	National Steering Committee
NSU	National Seed Unit
NTC	National Technical Committee
NUEW	National Union of Eritrean Women
NUEYS	National Union of Eritrean Youth and Students
PIC	Planning and Implementation Committee
PC	Project Coordinator
PIM	Project Implementation Manual
PSD	Planning and Statistics Division
RSD	Regulatory Services Department
SDG	Sustainable Development Goal
SECAP	Social, Environmental and Climate Assessment Procedures
SMCFS	Small and Medium Commercial Farmers Strategy
SME	Small and Medium Enterprise
SO	Strategic Objective
SPC	Sub-zoba Planning Committee
SSTC	South-South Triangular Cooperation

SWC	Soil and Water Conservation
TA	Technical Assistance
TLST	Time and Labour Saving Technologies
ToF	Training of Facilitators
ToR	Terms of Reference
ToT	Training of Trainers
UNDP	United Nations Development Programme
WFP	World Food Programme
WHH	Women-Headed Household
WHO	World Health Organization
WMP	Watershed Management Plans
WUA	Water Users Association
ZPC	Zoba Project Coordinator
ZPCC	Zoba Project Coordination Committee
ZPCO	Zoba Project Coordination Office
ZTC	Zoba Technical Committee

PART I: FRAMEWORK AND RESPONSBILITIES

I.1: DEFINITIONS

1. **Agro-pastoral Field School (AFS) approach:** is an adaptation of the innovative, participatory and interactive learning approach from the Farmer Field Schools (FFS), for pastoralist and agro-pastoralist (as known from Uganda, Ethiopia, Kenya).

2. **Climate Smart Agriculture (CSA)**: comprises the actions needed to transform and reorient agricultural systems to effectively support development and ensure food security under a changing climate. It aims at sustainably increasing agricultural productivity and incomes and adapting and building resilience to climate change. The term covers practices such as: Conservation Agriculture, water and soil management, integrated production systems with efficient use of resources and less external inputs, diversification to increase resilience, etc.

3. **Contact farmer** is the terminology used in Eritrea for lead farmers or similar who support the extension workers on ground.

4. **Famer Field School (FFS) approach** is a methodology originally developed by the Food and Agriculture Organization (FAO) as a participatory approach for people-centred learning. Practical field exercises using direct observation, discussion and decision making encourage learning-by-doing and participants can exchange knowledge in a risk-free environment. Local knowledge and outside scientific insights are tested, validated and integrated directly in farmers' gardens, under their localized ecosystems and socio-economic settings.

5. **Farming system** is defined as a population of individual farm systems that have broadly similar resource bases, enterprise patterns, household livelihoods and constraints, and for which similar development strategies and interventions would be appropriate. Depending on the scale of the analysis, a farming system can encompass a few dozen or many millions of households (FAO, nd). The following are the 4 main farming systems in Eritrea:

- *Pastoralists* practice transhumance movement of herds looking for pastures and water in arid and semi-arid areas found in the western and eastern lowlands. Their main source of income is livestock and livestock related activities, usually without any crop production. Herd sizes can range from 15-150 animals, mainly cows mixed with small ruminants and some camels.
- *Agro-pastoralists* are semi-sedentary, moving herds only when water and feed is required and they practice some rain fed agriculture for human and animal consumption, mainly sorghum or finger millet. The system is found in arid and semi-arid areas, mainly in the western lowlands and some in the eastern lowlands. Herd sizes range from 15-50 animals including small ruminants, cows and in some cases camels. The average land-size normally is from 0.75-5 ha per household.
- *Mix-crop livestock systems* are normally sedentary systems with few animals used for double purpose: Oxen for ploughing; cows and small ruminants for meat and milk (less than 10) and donkeys for transportation. Found in highlands and mid-lands with semi- arid to sub humid areas and cooler temperatures. These areas are more densely populated, bringing the average land holding down to 0.25 ha.
- *Intensive systems* are commercial farms around towns, with high input and output and can be medium or small-scale. Exotic animals are used for production, 5 -10 animals for the small farms and 50-60 animals for the big farms.

6. **Food insecurity** is the inability to obtain sufficient food (in terms of calories) and other essential goods and services to lead a healthy life.

7. **Implementing Agencies (IAs)** are the agencies responsible for implementation of the project in the way that they form part of the Annual Work Plan and Budget (AWPB) and receive funding directly from the Project for approved activities. This includes both departments within MoA (the lead agency) and their various branches, Zoba Administrations and their decentralized levels, as well as other Ministries. These relations are governed by agreements. The project is not foreseen to have Implementing Agencies outside the public sector, although it may enter into partnerships, agreements or contacts with such.

8. **Integrated Pest Management (IPM):** is the agricultural practice of careful consideration to all available pest control techniques and integration of these into the production system by taking appropriate measures to discourage 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.

9. **Minimum Integrated Household Package (MIHAP):** is a Government of Eritrea initiative to address food and nutrition security. It provides farmers with access to water, improved seeds, crossbred livestock and small stock.

10. **Nutrition-related Knowledge, Attitude and Practices (KAP) surveys** assess and explore peoples' KAP relating to nutrition, diet, foods and closely related hygiene and health issues. KAP studies are mainly used to (1) collect key information during a situation analysis, feeding into the design of nutrition interventions and (2) to evaluate nutrition education interventions.

11. **Organic agriculture** is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system (FAO/WHO Codex Alimentarius Commission, 1999).

12. **Para-vets** are community-based extension workers who have received simple training in veterinary services. They are volunteers who move around in the communities; they may charge fees for the services rendered, such as diagnosis and treatment; vaccination; and in some cases artificial insemination. The target is for two para-vets to be trained and actively delivering services per Kebabi.

13. **Partners** of the project are strategic agencies, entities or organizations who support the achievement of Project objectives, either national, regional or international. While these may be paid for undertaking specific activities or supplying specific services, they differ from implementing agencies in the modalities in which these activities are planned and executed. Financing may not be involved at all.

14. **Project** refers to the Integrated Agriculture Development Project (IADP), implemented by Government of the State of Eritrea and financed by IFAD.

15. **Producer Organizations (POs)** is a common word used to describe Cooperatives, Associations and other types of farmer organizations.

16. **Project Implementation Manual (PIM):** An annex to the Project Design Report (PDR) provides practical guidance to Project implementers on key implementation aspects. It describes in detail how the programme components and activities outlined in the PDR are intended to be implemented. The PIM outlines the detailed mechanisms, processes and procedures, formats, eligibility criteria etc. which will ensure efficient programme implementation and achievement of the envisaged programme results. The PIM is a living document and may be updated at any time, as needs arise, during implementation.

17. **Spate irrigation** referees to the diversion of floodwater from its river/stream bed and channeled to basins to irrigate crops and supply ponds for drinking-water, irrigate forest and grazing land as well as recharging local aquifers.

18. **Time and Labor Saving Technologies (TLST) and practices**: are tools and equipment which reduce the drudgery and/or improve the efficiency of performing various farming, off-farm and household activities, such as the use of draught animals for land preparation, planting, weeding and rural transport, cooking on fuel efficient stoves, harvesting roof water for domestic purposes, agro processing and value addition.

19. **Watershed** is a hydrological unit that discharges rainfall runoff to an outlet (a control point) in the downstream. It has been described and used as a physical-biological unit that could be easily monitored using objectively verifiable indicators and also, on many occasions, as a socio-economic-political unit for planning and management of natural resources.

20. **Watershed Management Plans (WMPs)** are consolidated overviews of a given watershed, identifying geographical features of the watershed, of the main economic activities, in particular farming and livestock, as well as the local communities. They represent a holistic planning approach for project site selection. They are finalized upon site selection and technical assessment of proposed project activities.

21. **Water Users Associations (WUA)** are local institutions established with the objective of supporting the construction of irrigation schemes and managing them after completion. Their major role include, creating enabling environment (incl. community contribution/mobilization) during construction, proper distribution of water after construction, managing water conflicts as well as carrying out the operation and maintenance of irrigation canals and associated infrastructures.

I.2: TARGETING STRATEGIES

22. The goal of the Project is to contribute to poverty reduction and food and nutrition security of rural households. The Project Development Objective (PDO) is to enhance smallholder agricultural production and productivity in a sustainable and climate-resilient way and improve rural livelihoods.

23. IADP will be national in scope, targeting all six Zobas (regions). The Project interventions will directly benefit around 60,000 rural households (hhs) or more than 150,000 household members. The targets in terms of outreach are presented in Table 1.

24. The Project will employ a three-step targeting approach:

a. Geographical targeting for selection of Sub-zobas;

b. Site selection (watershed, conventional irrigation or spate irrigation site selection) within the geographically targeted areas; and

c. Beneficiary targeting within the selected sites and the areas around it, for example nearby villages and towns.

25. The below sections describe the criteria, the background as well as the operationalization process. The targets in terms of outreach are presented in Table 1. At least 40% of the beneficiaries would be women.

26. **Geographical targeting.** Interventions will cover up to approximately 40 per cent of all Sub-zobas, identified as a two-step approach, first based on geographical targeting; secondly site-selection. Within these areas, the above self-targeting approaches of beneficiaries will be applied.

27. Geographic targeting will include two stages:

a. Firstly, priority will be given to Sub-zobas and specific "hotspots" with high levels of food and nutrition insecurity and poverty.

b. Secondly, selection of intervention sites will be performed through: (i) a watershed approach in the highlands of the zobas Anseba, Debub, Maekel and part of Gash-Barka; (ii) an assessment of potential for irrigation by smallholder farmers in lowland areas (part of Gash-Barka, Northern Red Sea, and Southern Red Sea).

c. Criteria for selection and prioritisation of watersheds and irrigation schemes will include:

d. a) availability of a reliable source of water for livestock and irrigation (preferably also for human consumption);

e. b) self-selection or willingness of beneficiaries to participate in the watershed management investments..

Table 1: Project Targets

COMPONENT 1. INTEGRATED WATERSHED MANAGEMENT				
Number and characteristics of sites		**Ha**	**Ha/HH**	**Households**
Upper stream catchments treated	10 watersheds (1,000 ha/site)	10,000	1	10,000
Shallow wells supply irrigation	100 wells, each well irrigating 5 ha	500	0.1	5,000
Small-scale, surface irrigation schemes	11 schemes of 10 ha (out of 14 pre-identified); 3 schemes first need to repair upstream catchments	110	0.125	880
	5 sites of 10 ha, that only need irrigation canal and water distribution, and water management	50	0.125	400
	Pilot of drip irrigation	5	0.1	50
	Sub-total: 16 irrigation schemes	***160***		***1,330***
Spate irrigation	Lowlands, North Red Sea, 2 schemes	500	0.5	1,000
	Lowlands, Southern Red Sea, 2 schemes	500	0.5	1,000
	Lowlands, Gash-Barka, 1 scheme	250	0.5	500
	Sub-total: 5 spate schemes	***1,250***		***2,500***
Supply of drinking water	12 micro-dams, 150 households/dam	Number of households		1,800
COMPONENT 2. CROP AND LIVESTOCK PRODUCTIVITY AND RURAL LIVELIHOOD IMPROVEMENT				
Number of youth, women and farmers				
FFS/AFS	700 FFS/AFS of 20 members	Number of lead farmers		700
	180 in Lowlands (sorghum, sesame, millet, forage, mung bean)			
Para-vets	258 villages in mid/highlands (1 para-vet/village)	Number of para-vets		700
	217 villages in Lowlands (2 para-vets / village)			
Nutrition education	Caregivers trained for improved nutrition at community level (1 - 2*475 villages)	Number of caregivers		700
Seed producers	250 in Mid and highlands (wheat, forage (alfalfa, penicetum, etc.), chick peas)	Number of seed producers		250
Existing cooperatives	Households with access to PO services	Number of members		6,700
Number of farmers' households supported with capacity building and assets				
FFS/AFS	550 FFS/AFS of 20 members	Number of farmers		11,000
MIHAP	Benefiting farmers in irrigation schemes	Number of farmers		1,000
	Other farmers	Number of farmers		4,000
Food and nutrition education	475 villages targeted (average population of 250 hhs)	Number of households		30,500
Groups of service providers to agriculture	Tool manufacturers (1 group per Sub-zoba, 12 Sub-zobas, 5 members per group)	Number of members		60
	Service provision SMEs (1 group per Sub-zoba, 5 members per group)	Number of members		60
Other benefiting households	Access to improved seeds, animal vaccination, water for animals, improved marketing, access to services	Number of households		36,000
Total Project		**Number of households, corrected for double counting**		**60,000**

28. **Beneficiary Targeting.** Priority beneficiaries will be: (i) rural smallholder farmers involved in subsistence agriculture, horticulture and small livestock keeping; (ii) farmers and youth interested in establishing farmers' associations or cooperatives or pioneer small and medium enterprises (SMEs); (iii) women, especially woman-headed households, and households with young (0-5 years) children, with priority to malnourished children; and (iv) youth (18-35 years), in particular demobilized soldiers.

29. The Project will employ direct or self-targeting in that Village Administrators, supported by local branch offices of National Union of Eritrean Women (NUEW) and other grassroots organizations, will identify potential beneficiaries, based on their knowledge of the status of each household. Young women and men, including young adults with disabilities, will be specifically targeted by the Project to acquire entrepreneurship and technical capabilities as well as assets; and to provide input packages for micro, small and medium scale enterprises (bee-keeping, poultry, small ruminants or other income-generating activities) as well as training programs on environmental protection that involve young adults.

Table 2: Priority beneficiaries of the IADP

Target groups	Characteristics	Source of data
Rural smallholder households involved in subsistence agriculture (including small livestock keeping and horticulture)	**Highlands:** households cultivating small areas of rain-fed crops (max 0.25 ha of rain-fed/ irrigated crops) **Midlands:** households cultivating small areas of rain-fed crops (max 0.25 ha of rain-fed/ irrigated crops) **Lowlands:** agro-pastoralist and semi-nomadic households with max 5 cattle and 10 sheep/goats and 5 ha of crop land (sedentary)	NAP M&E Unit, Zoba and Sub-zoba administrations
Farmers and youth (15-35) interested in establishing farmers' associations or cooperatives or pioneer SMEs	Existing farmers and youth small and medium agribusiness enterprises or POs, such as cooperatives or associations Farmers and youth interested in establishing small and medium enterprises or cooperatives	NAP M&E unit, Zoba and Sub-zoba administrations, Eritrean Women Agribusiness Association (EWAA)
Women, especially woman-headed households (WHHs)	WHHs and young women constitute over 40 per cent of total targeted beneficiaries. Households with young (0-5) children and women at reproductive age AND households with malnourished children	NAP M&E unit, Zoba and Sub-zoba administrations, Community self-targeting, Representatives of NUEW (at Sub-zoba, Kebabi and village level)
Young adults and resettled households (internally displaced people, returnees and demobilized soldiers households)		NAP M&E unit, Zobas and Sub-zobas administrations, Community self-targeting, Representatives of the National Union of Eritrean Women (at Sub-zoba, Kebabi and village level)

I.2.2: Gender and youth strategies

30. Special efforts will be undertaken to reach out to youth and women (including women-headed households) through a combination of direct targeting, self-targeting, facilitation and empowerment measures. The Project will focus on empowering and creating employment for women, mainly through: (i) capturing women's issues in agriculture and agri-business in the socio-economic survey to be conducted at start-up and dissemination of relevant information; (ii) strengthening existing groups of women involved in agriculture and agri-business; (iii) creating targeted employment and income generation opportunities, according, where possible, to agro-ecological zones and evidence generated by the needs assessment; (iv) providing training programmes in order to improve labour conditions and entrepreneurship skills and enhance women's participation in social and economic activities; (v) enhancing women's representation in

cooperatives and strengthening their leadership capacity; (vi) promoting research on and adoption of labour-saving technologies, aiming at decreasing women's workload and improving their productive capacity; and (vii) effectively monitoring the implementation of the above actions through collection of sex and age disaggregated data. The population will also continue to be sensitized on the plight of harmful cultural practices violating women and children's rights and perpetuating gender disparities, among others. Based on the findings of the socio-economic survey, the project may choose to undertake detailed surveys on specific issues during implementation.

31. Sub-zoba and Kebabi administration, in collaboration with the community and the local branch of the NUEW will identify needs and concrete opportunities to promote youth/women engagement will be identified. The National Project Coordination Office (NPCO) will develop guidelines to this effect. The Zoba and Kebabi administration will maintain records of their target group characteristics.

32. The Project will promote profitable income generating activities targeted to women, aimed to strengthen their livelihoods systems, as informed by the socio-economic study. Through training of women's groups, targeted activities will be promoted; for example, in areas where water availability is not a limiting factor, the Project may revamp sesame crop production and support processing of sesame oil and sesame paste (possibly also other by-products such as tahini for internal consumption and export).

33. Sesame is a tradition crop in Eritrea and is expected to gain quick update, for example up to 350 ha in Gash-Barka. Sesame processing into oil and sesame paste will require the lease and/or refurbishment of no-longer functioning processing plants and its equipment. Sesame oil, can be used for household consumption and constitute a healthier alternative to the processed palm oil imported from the middle-east. By-products such as sesame paste are rich in proteins and can be used for animal feed, both for cattle and for shoats. The model is presented in Table 3 below.

Table 3: Sesame oil production model

Variable	**Assumption**
Area of land	350 ha
Seed production	300 kg/ha – 300 kg*350 ha = 140,000 kg/year
Sesame Oil Plant	
Cost of installation	
Lease of land	
Machinery (grinding)	USD 50,000
Employees	15 women working full time
Estimated Production	
Oil production	140,000*0.4 (conversion factor) = 56,000 l/year
Sesame Cake Production	70,000 kg/year (enough to feed 600 'shoats' for 7 months/year = 50 hhs)

34. Other potential enterprises include sedentary bee-keeping activities and artisanal berbere' production. Sedentary bee-keeping is particularly suitable for women and women headed households as it does not require seasonal migrations of the beehives to often far apart areas (detailed information on sedentary bee-keeping are available in table 10). The Project will also help groups of women to establish small artisanal berbere processing plants. Further opportunities for possible women employment are detailed in Table 4 below.

35. Young women and men, including young adults with disabilities, will be specifically targeted by the Project to acquire entrepreneurship and technical capabilities as well as assets; agribusiness development will be piloted through specific service delivery activities. In addition, bee-keeping, poultry, small ruminants or other income-generating activities may be promoted. Training programs on environmental protection that involve young adults will be undertaken. The Project will build on the achievements and lessons learned from past and ongoing Projects, such as the UNDP Youth Employment Skills Project.

36. The Project will ensure that youth needs assessment is included in the socio-economic survey; identify eligible youths for the proposed activities; and identify business opportunities, for example related to the provision of services and tools for agriculture (services throughout the cropping cycle and modern tools for agriculture) and to the environmental protection, but not exclusively.

Table 4: Proposed activities to ensure outreach to the targeted beneficiaries.

Farming systems	**Characteristics**	**Proposed actions**
Agro-pastoralist system	Frequently nomadic in search of water and grass for grazing animals, this group is harder to reach with health care and education services. Consequently, they suffer higher rates of maternal, infant and child mortality and lower life expectancies than settled groups. They are also less likely to be literate, especially women. During years of normal rainfall, they cultivate sorghum or millet, but during drought years, they sell their animals in exchange for grains and vegetables.	- Landscape integrated approach Rangeland management with water points - Seedlings drought resistant to be used in the rangeland (from NARI) - Sorghum for double purpose intercropped with mung bean or/ and horticulture during off-season - Sesame with complementary irrigation during the rainy season and horticulture off-season - Fruit and wood trees (Moringa, Acacia species, Leucaena *spp.* for wood and fodder) - Complementary actions for improved nutrition (nutrition dense home gardens for diversified diets) - Food and nutrition education - Behavior Change Communication (BCC) for food and nutrition (also using the media) - Veterinary services - Agro-pastoral Field Schools (AFS)
Mixed crop-livestock system	They cultivate rain-fed crops (sorghum, wheat, millet) and little horticulture (cabbage, onion, tomato). They have poor access to farm inputs (seeds, irrigation water and animal power), and show very limited engagement in non-farm activities, such as trade and remittances. This suggests that opportunities for engaging in non-farm activities and receiving remittances from families and friends are critical for moving out of poverty.	- Wheat in rotation with irrigated horticulture during off season or/ and main season (depending on the extension of land) - 3 seasons of horticulture (with available irrigation) - Wheat, barley rain-fed in rotation other forage leguminous, elephant grass - Traditional or Revised MIHAP package - Farmers Field Schools (FFS) - Veterinary services
Women targeted IGAs	Proposed agribusinesses for women (for which financial analysis was undertaken): 1. Processing of sesame into sesame oil 2. Sedentary bee-keeping (promote access to micro-finance for purchasing equipment and payment of initial membership fees) 3. Processing of berbere Further proposed agribusinesses (for which financial analysis needs to be carried out) 4. Arabic gum (East lowland) 5. Processing of henna (profitable as proposed by the Project) 6. Processing clover seeds 7. Groundnut processing 8. Rape seed oil	
Youth targeted actions	Proposed agribusinesses for youth (for which financial analysis has been calculated) 9. Tools manufacturers (including wood and metal workshops) 10. Migratory and sedentary beekeeping (promote access to micro-finance for purchasing equipment and payment of initial membership and annual fees) 11. Agriculture service producers (land preparation, threshing, post-harvesting) Further proposed agribusinesses for youth (for which financial analysis needs to be carried out) 12. Dairy processing Other employment opportunities (already budgeted) 13. Para-vet services	

I.2.3: Food and nutrition security strategies

37. Approximately 40 percent of Eritreans are considered food insecure; five percent of them severely food insecure. Households in rural areas are more food insecure (46 percent) compared to those in Asmara city (35 percent) and in other urban areas (28 percent). Across Zobas, Southern Red Sea had the highest level of food insecurity at 63 percent, of which 11 percent severely food insecure, followed by Zoba Debub at 57 percent, of which 5 percent severely food insecure. For the other Zobas, the proportion of food insecure households ranged from 26 percent in Northern Red Sea to 31 percent in Gash-Barka, 33 percent in Anseba and 38 percent in Maekel. According to the 2010 Eritrea Population and Health Survey (EPHS), wasting, stunting, and underweight stood at 14.8 percent, 56 percent, and 41.8 percent, respectively. An estimated 55 percent of the population had an acceptable level of consumption, about 19 percent had poor food consumption and the remaining 25 percent were at borderline. Southern Red Sea had the highest proportion of households with poor food consumption (43.8 percent), followed by Debub (31.4 percent), with an average food consumption scores of 36 percent and 42 percent, respectively. This explains the higher level of food insecurity reported in Sothern Red Sea and Debub. Poor food consumption was higher in rural areas (23.3 percent), female headed households (21.7 percent), and among the second and lowest wealth quintiles (24.8 percent and 33.8 percent, respectively). According to MoA, 60-70 percent of the population depend on subsistence agriculture and there are approximately 400,000 rural households in the country.

38. In 2013, GoSe launched an initiative to support farmers improve their food and nutrition security and help them graduate from poverty. The Minimum Integrated Household Package (MIHAP) provides a series of inputs and services that include drought resistant and early maturing crops like sorghum and millet, fruit trees forage and animal feeds and vegetable production; livelihood support systems and participation in rangeland management systems; construction of water harvesting facilities both for household and agriculture use.

39. To be productive and to serve the above-mentioned purposes, MIHAP agriculture packages need to be adapted to the different farming systems and agro-ecological zones, including: rain-fed cereal/pulses system, irrigated horticulture system, semi-commercial peri-urban livestock (dairy/poultry) system, agro-pastoralist system, nomadic-pastoralist system, semi sedentary, crop/livestock mixed system, as well as some commercial farming.

40. The project will also improve food and nutrition security by targeting the most vulnerable households and smallholder farmers, defined according to criteria of poverty and food and nutrition insecurity (WHO 2012) and identified through community self-selection, with the aim of promoting healthy and diversified diets through increased availability and access of diversified plant and animal-based foods. Access to and use of potable water will be central to the campaign.

41. Actions aiming at increasing availability of nutrient dense food (through adapted MIHAP packages) will be coupled with targeted food and nutrition education activities, delivered through (i) sessions at the Farmers Field Schools; (ii) community (Kebabi and village) level; and (iii) behavioural change communication using radio and TV channels.

42. Nutrition education activities will have to carefully designed to respond to the multiple and diverse cultural beliefs, attitudes and practices, such as the long fasting period (abstaining from any animal-based food) observed by some religious groups in certain periods of the year. Another challenge might also be represented by the difficult geographical access of the most vulnerable targeted communities, some of them dispersed and isolated.

43. The Food and Nutrition Education (FNE) activities will, as much as possible, make use of already available training material, both at country as well as regional level. The MoA can rely on a home economics expert based in Asmara as well as decentralized

experts in the different Sub-zobas that will be targeted by the Project to support the assessment of the quality of the training material and its suitability to the foreseen activities and, if necessary, revise and adapt it to achieve the expected goals. These experts will also be supported, when necessary, by a TA of a nutrition assessment/nutrition education expert.

44. The Project will seek to provide FNE through different delivery mechanisms, namely:

a. Agriculture-nutrition topics covered through the FFSs, specifically designed to promote FNE in as well as at community level by selected lead women from the community, trained by the Project. These activities will target the entire community, and women in particular will be trained to improve the nutritional content of their household recipes, complementary feeding and other practices;

b. The mini-MIHAP package will support households to set up their homestead gardens through the provision of seeds and targeted FNE;

c. Education and BCC campaigns will be launched through local radios and TV programmes, building on relevant experiences from the past, implemented, among others, by NUEW.

d. Establish community kitchens for cooking demonstrations at Kebabi level that would provide practical demonstration for recipes using newly introduced vegetables and animal-based foods in the diet of households

e. All the households will be trained and receive material to build the improved cooking stoves that have already been distributed by the MoA.

I.3: INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

I.3.1: Project governance structures

45. **The National Steering Committee (NSC)** of NAP will be re-established under IADP to ensure cross-sectoral coordination as well as strategic oversight of Project implementation in accordance with the set objectives, across the six (6) Zobas. Its functions will include: (i) oversight of Project implementation; (ii) ensuring that the Project is implemented within the national policy and strategy framework; (iii) approval of the Annual Work Plan and Budget (AWPB); and (iv) assistance in resolving conflicts and implementation bottlenecks. The NSC will be chaired by the Minister of Agriculture and include senior level representation from the Ministry of Land, Water and Environment (MoLWE) and the six Zoba governors. The Project Coordinator (PC) acts as Secretary. The body will meet every six months.

46. **The National Technical Committee (NTC)** supports the works of the NSC and is comprised of senior technical experts. It is chaired by the PC.

47. **Zoba Project Coordination Committees (ZPCCs)** provide oversight of operations at Zoba level, review and endorse the Zoba AWPB, and prepare progress reports before forwarding to Planning and Statistics Division (PSD) of the MOA for consolidation. The ZPCCs will meet on a quarterly basis. ZPCCs, chaired by the Zoba Governors and comprising, inter alia, the Directors of Zoba Administration Departments and Heads of Agriculture Divisions will perform similar functions at Zoba level.

48. Below the Zoba level, no project-specific structures will be established; rather project Governance will be taken on by the lower local government and communities institutions, including:

a. **Sub-zoba level.** The Sub-zoba Planning Committee (SPC) approves the Sub-zoba development plan. The SPC is composed of the Sub-zoba development Administrator as the chairperson, heads of Sub-zoba

departments, local Zoba assembly members, NUEW, Kebabi Administrators, and civil society organizations (CSOs).

b. **Kebabi level.** The Planning and Implementation Committee (PIC) reviews and consolidate the Village Development Plans into a Kebabi IADP plan. The PIC is headed by the Kebabi Administrator, assisted by the local Zoba assembly members. The National Union of Eritrean Youth and Students (NUEYS) may also be consulted at this level.

c. **The village level** builds on the work carried out by the Village Administrator and as consolidated in the Village Development Plans.

I.3.2: Lead Agency and Project coordination offices

49. MoA is the lead agency responsible for project planning, coordination and oversight. Implementation happens through the various MoA departments at national level, who are mainly in change of technical support, and through the Ministry of Local Government (MoLG) decentralized structures at Zoba, Sub-zoba and lower levels.

50. **NPCO and IADP Project Coordination.** MoA has a readily established NPCO structure, under the PSD, responsible for overall coordination and management of the NAP. Actual project implementation happened through the cost centres of the MoA Departments and Zobas. The NPCO is formally headed by the Director for Planning and Statistics, but the day to day implementation is spearheaded by a Project Coordinator (PC) with three technical teams, dedicated to each development partner funded project. Mainly, qualified staff from MoA are seconded with a share of their time or with responsibility for certain activities to the NPCO. AFD is directly represented in the NPCO and has the responsibility for financial planning, monitoring and reporting.

51. This arrangement will be followed for the IADP-NPCO, however certain initiatives are designed to improve the technical guidance provided from the centre to Zobas; to improve project planning towards achievement of the objectives (rather than provision of general budget support) and to improve targeting and nutrition and environmental compliance. These include:

a. Appointment of a full time Project Coordinator (PC) and enhancement of the technical responsibilities to assume greater responsibilities for project management[1];

b. Full-time dedication of officers to the project, with the option of hiring contract staff in case expertise is not secured;

c. Formalization of the role of MoLWE and the nomination of a full-time Environmental Monitoring Officer within the NPCO;

d. Organizing the NPCO into three teams with clear reporting lines, namely:

   i. Technical Team, headed by the Component 1 technical coordinator, likely a watershed management expert from AED, supported by an irrigation engineer; a Component B technical coordinator, namely an agronomist nominated from AED, supported by two technical experts, namely an agricultural researcher, nominated from NARI and an agribusiness expert nominated from AED; and a Component 3 coordinator (institutional capacity building expert).

   ii. A Planning Team headed by a Senior M&E officer, supported by M&E related staff (Project Planner, M&E Assistant and KM&L/communications officer) as well as staff to support the

[1] In NAP, the Director PSD assumed responsibility technical work of the NPCO, with a Project Office Coordinator coordinating the day to day work. The TORs drafted in Annex 2 attempt to let the Director PSD assume a strategic governance role, while enhancing the managerial roles and responsibilities of the Project Coordinator. This is expected to put the Project Coordinator in a better position to actively steer implementation towards the desired results.

mainstreamed topics of 1) social inclusion, women and youth empowerment and nutrition; and 2) environmental monitoring (likely requiring a full time officer seconded from MoLWE);

iii. An administrative, headed by a Financial Controller and a Senior Procurement Officer, with their required support staff; and

iv. In addition to the Technical Experts and Technical Coordinator, the NPCO may continue to call upon Subject Matter Specialists from MoA or IAs, as and when required. These will dedicate between 10 and 25% percent of their time to the project, and will not be required to sit physically at the NPCO offices;

52. A detailed organigram is presented in Figure 1 below and TORs presented in Annex 2. Terms of reference of NPCO and ZPCO staff. NPCO Weekly technical planning meetings will be held. Subject Matter Specialists may be identified within the following areas: Livestock, dairy, beekeeping, poultry, irrigation, watershed, environment, GIS, seed multiplication, regulatory services, extension, FFS, agribusiness, cooperative development, etc. It should be noted that the subject matter specialists will be called upon to provide inputs as and when required, and assume responsibility for preparation of AWPBs within their respective departments, under the supervision of the Director[2].

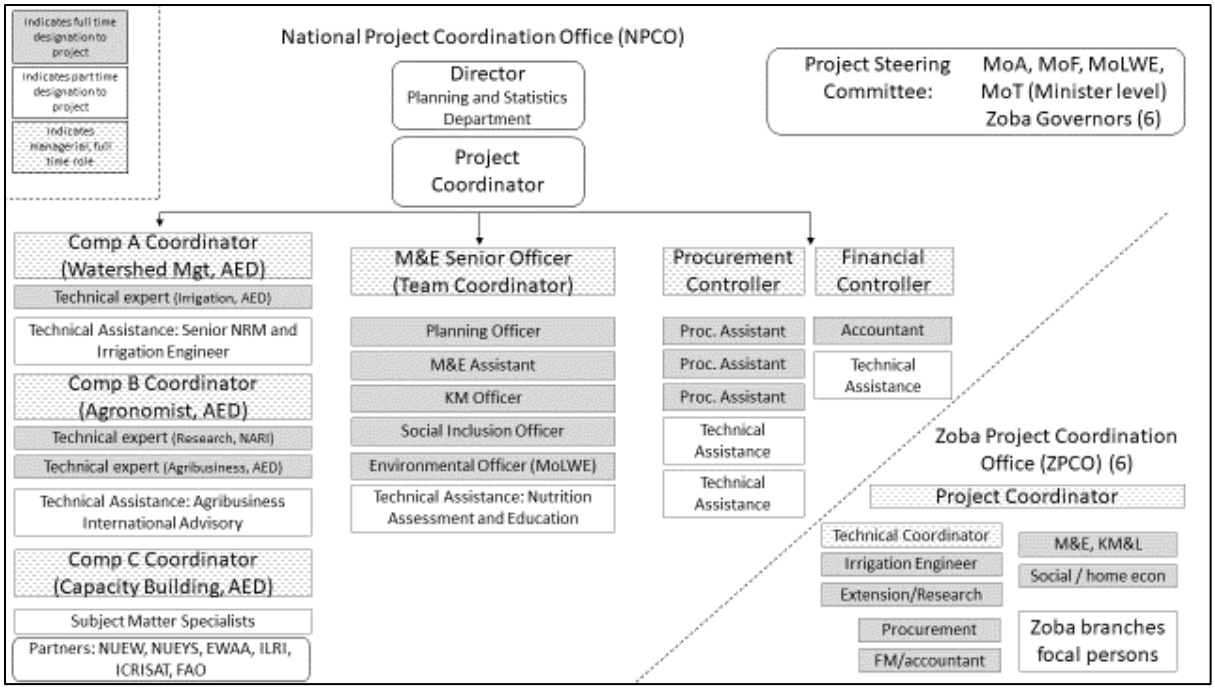
53. The MoA Management Committee (which meets weekly) provides guidance to the NPCO, consisting of the Minister of Agriculture, the DGs of AED, the Regulatory Services Department (RSD) and the National Agriculture Research Institute (NARI), the NCPO coordinator, the AFD Director as well as 3 senior advisors to the Ministry.

54. **The Zoba Project Coordination Offices (ZPCOs)** are established under the direct supervision of the respective Governors to coordinate IADP activities at the Zoba level. The guide and oversee the project, which is implemented by the various Zoba Departments. Specifically, the ZPCO is responsible for planning, implementation, management, reporting, monitoring and implementation. The ZPCOs comprise of technical experts seconded from the Zoba Departments. The ZPCO structure will mirror that of the NPCO at national level, with three support teams focused on technical guidance, planning and monitoring, and administration. The Zoba Administration will carry-out coordination and implementation responsibilities at Zoba level including coordination with the various Zoba Directorates. DG for Agriculture, Land and Environment will be the main partner, with some activities carried out through the DG for Infrastructure and the DG for Trade and Industry (further developed below).

55. Zoba Technical Committees (ZTCs) are established to support the ZPCOs to facilitate effective implementation of the project. ZTCs are chaired by the Director Generals of the Zoba Departments of Economic Development, with the following members: Zoba branch offices of MoLWE, Zoba Project Coordinators, technical experts (crop, livestock and irrigation development), Regional Inspectorate Staff and the Planning and Statistics Unit Heads of MoA Zoba Braches.

[2] This modality differs slightly from the NAP implementation set-up, where the subject matter specialists were generally one per MoA department, with TORs explicitly stating that they were to prepare project proposals for NAP financing. For IADP, the technical experts within the NPCO will lead this process, in coordination with the Directors. This aims at achieving a more holistic and results-oriented planning process, and allows for the input of the subject matter specialists to be mainly technical.

Figure 1: NPCO and ZPCO Organigram



I.3.3: Implementing Agencies (IAs)

56. The project has eight Implementing Agencies (IAs): MoA, MoLWE and the six Zobas. MoA is the lead IA, with implementation mainly done through various MoA technical departments as well as undertake the actual implementation in cases of the MCU (see below) and research stations with decentralized bodies. They provide support to their counterparts at Zoba level and below, which are part of MoLG (see more below). A detailed organigram of the relevant MoA departments as well as the decentralized level structures can be seen in Figure 2. The NPCO will be hosted within the PSD, who, will also be responsible for agricultural statistics development and monitoring. The division holds the Director position of the NPCO, as well as provides majority of the staff to the M&E and planning functions of the NPCO.

Departments within MoA

57. **Agricultural Extension Department (AED)** will be responsible for the largest part of project activities, with a mandate for implementation of national resources management, catchment treatment, irrigation development, horticulture and livestock development, agricultural extension and communication, value addition and agro-input supply. AED will provide technical backstopping to the Zoba administrations, and ensure that Project implementation is aligned with GoSE policy and strategies. It will collaborate with the RSD and MoLWE in ensuring that agricultural production activities are carried out within the environmental guidelines and policies. AED is also responsible for coordinating all agro-input requirements for the Zobas and facilitate their procurement. The National Seed Unit (NSU) under AED, in collaboration with Zoba seed units, will technically backstop private-sector seed growers for multiplication, processing and marketing of certified/improved seeds. The NSU is also responsible for coordinating a mechanism through which the national annual seed requirements are estimated and procured (the national annual seed plan).

58. **The Marketing and Credit Unit (MCU)** is responsible for input provision to farmers. The Unit is semi-autonomous under AED, and has direct representation at Sub-zoba level, not passing through the Local Government structure. This may pose some challenges to project implementation, with mitigation measures discussed under PART III:

PROJECT PROCEDURES: III.1: Planning and AWPB development. MCUs main responsibilities under the Project will relate to seed multiplication, as well as ensuring that inputs (seeds, drugs, vaccines) are available for Project activities throughout.

59. **The National Animal and Plant Health Laboratory (NAPHL)** will work on food quality and safety, and receive support to further develop its animal vaccines, in particular for small ruminants and poultry. Until the production is certified, they will procure drugs and vaccines for Sub-zoba level animal health clinics, and train animal health clinic staff.

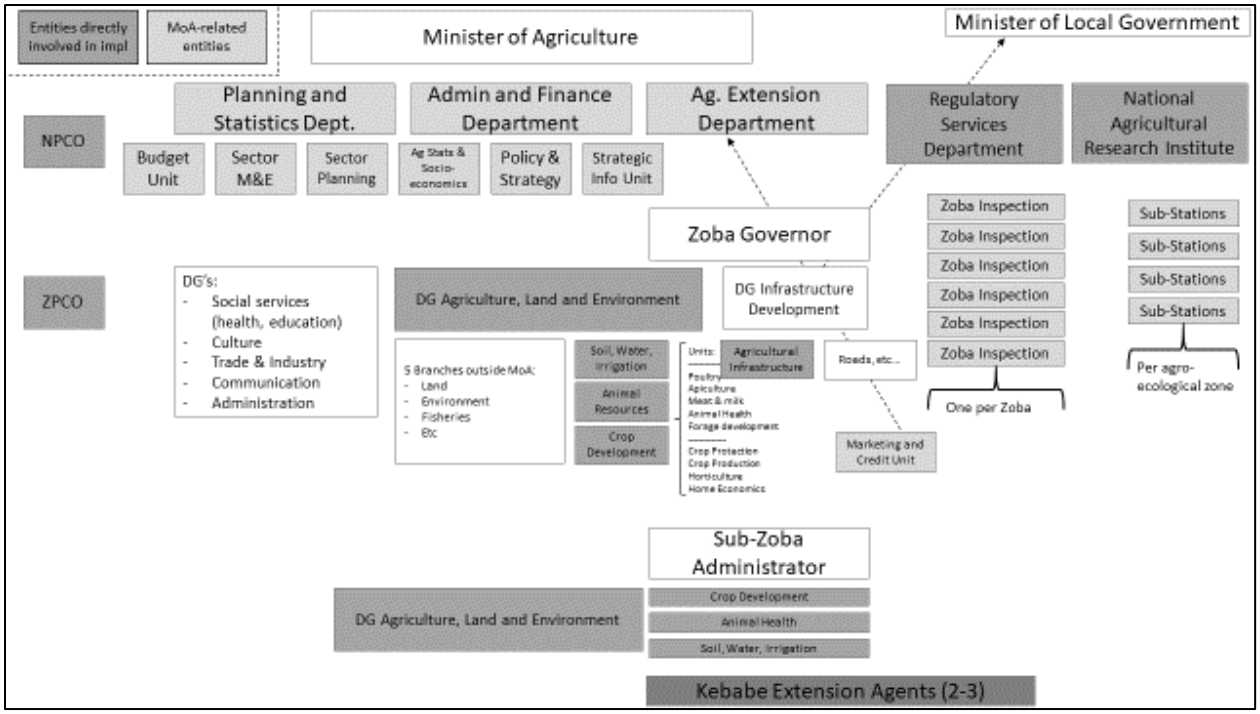
60. **The Regulatory Service Department (RSD)** will play a critical role under the project in particularly seed multiplication and inspection activities, as well as in quality assurance of inputs used under the Project. In particular, the Plant Resource Regulatory Division will be critical, focusing on seed quality, multiplication and the standards of distributed inputs as well as safety and quality control of agro-chemicals. They will undertake inspection visits on seed production and undertake environmental assignment to the same effect. The National Variety Release Committee has the authority on seed inspection, comprised of senior management of the relevant Departments and Divisions. The Animal Resources Regulatory Division, focusing on quarantine services, safety and quality of animal products, feeds and drugs, and inspection services of vaccines procured, may also implement certain Project activities. At implementation level, the RSD is represented by Regional Inspectorate Offices at Zoba level, which are directly accountable to the central level, to ensure independence of the inspection activities.

61. **The National Agricultural Research Institute (NARI)** will have responsibility for adaptive research and strengthen collaboration with the AED targeted on the following subjects: TLST, IPM, bio pesticides, organic fertilizers, rangeland management, improvement of indigenous poultry, as well as food safety and nutrition. NARI will also be responsible for all activities related to the production of breeder and foundation seeds. Seed variety screening and multiplication of foundation and breeder seed, will be supported by the development and implementation of protocols and the decentralization of the seed distribution system. Implementation will happen at national level as well as through the Research Sub-Stations, as per the agro-ecological zones. NARI is responsible for developing foundation and breeder seed.

62. **Administration and Financing Department (AFD) and Human Resources Department (HRD)** will undertake responsibilities in accordance with their mandates to ensure efficient and proper project implementation. HRD will be responsible for nominating qualified staff to the NPCO and supporting them in their work, as well as implementation of the Capacity Development Plan. AFD is responsible for contact with IFAD, including preparation of financial progress reports, annual audits, procurement and disbursement arrangements and ensure that withdrawal applications are submitted to IFAD in a timely manner. It will also ensure standardization of accounting and financial reporting procedures and ensure that transparent financial management procedures are in place, including proper operation of the Special Account and Project accounts.

63. **Agricultural Colleges** will be a key partner for both capacity-building activities, as well as for agribusiness activities. Coaches will be directly selected from the college and assigned clear roles in the implementation of activities under Subcomponent B.3.

Figure 2: Overview of Project coordination and implementation structures



Zoba level

64. **Ministry of Local Government**, through its decentralized structures, is the main stakeholder for implementation. The full structure is presented in Figure 2. The decentralized implementation structure does not 1:1 mirror the central level structure of Ministries, and thus the Project activities are likely to involve a number of critical Directorates, with a backstopping and coordination function provided by the ZPCO. Critical Directorates at the Zoba level include:

a. **Directorate for Agriculture, Land and Environment (DG ALE).** Majority of Project activities will be implemented directly by three branches under the DG ALE, namely those related to Soil, Water & Irrigation; Animal Resources and Crop Development, as well as the eight technical units under these. This will include bulk of activities under Component 1, all activities under 2.1/2 (except those directly under the responsibility of the Marketing and Credit Union, or those under NARI and RSD decentralized structures), and Subcomponent B.3 activities. In addition, the Agricultural Infrastructure Branch of the DG for Infrastructure Development will have an implementation role in relation to dam infrastructure development.

b. **Directorate for Soil, Water and Irrigation** will play a key role in implementation, especially in implementing Component 1, where they will be responsible for watershed and irrigation inventories, propose site selection for the Project, undertake preliminary studies and coordinate the implementation.

c. **Directorate for Infrastructure** will be responsible for any water infrastructure which might fall under their mandate.

d. **Directorate for Trade and Industry** will have a role to play under Component 2. Two State-owned active workshops will work with the NARI in building the prototype tools that will be tried out. In addition, they will work as a vocational training institute for the targeted tool manufacturers, to increase their capacity and to introduce the know-how on the construction of these innovative tools.

Other Ministries

65. **Ministry of Land, Water and Environment** will have a lead role in respect to activities under Component 1 which relate to hydro-metrological capacity building as well as for monitoring of the Environmental and Social Monitoring Framework; this will be particularly the Department of Environment.

66. During project implementation, it may be realized that actions from other Ministries are directly required for project implementation, in which case modalities can be established for them to become IAs, and form part of the Project AWPB. This will require developing MoUs and methods for funds flows. These other ministries may potentially include:

a. **Ministry of Public Works.** Within the scope of the Project, this Ministry assumes responsibility for water investigation and any larger scale dam development, in case this would become relevant for the Project. They may also be called upon for technical expertise (water and irrigation engineers) or in case equipment is needed.

b. **Ministry of Education** will be called upon in the environmental awareness activities, specifically to select the schools to be supported and define the types of interventions to be provided.

I.3.4: Partnerships

67. The project will partner with non-Governmental agencies especially related to targeting and community involvement, as well as in promotion of the agribusiness approach. Those pre-identified as relevant and with sufficient implementation capacity include:

a. **National Union of Eritrean Women (NEUW)** will support MoA in identification of beneficiaries at the village level, through their networks and groups and will be a resource partner for nutrition related activities.

b. **National Union of Eritrean Youth and Students (NUEYS)** will (i) identify eligible youths for the proposed activities; (ii) carry out a needs-assessment for the required vocational skills and entrepreneurship capabilities; (iii) select business opportunities for youth, related to the provision of services and tools for agriculture (services throughout the cropping cycle and modern tools for agriculture) but not exclusively.

c. **Eritrean Women Agribusiness Association (EWAA)** will support Project activities at the community level, as well as support the Project activities related to agribusiness development. This may be through providing trainers, technical review of manuals and general sharing of experience. They may also play an active role in identifying and encouraging existing associations or SMEs to engage with the Project.

I.3.5: Technical assistance

68. Technical assistance (TA) is an important implementation strategy of the Project, both long and short term. This will consist of, at least: a senior and junior long-term procurement expert; a long-term financial management expert; an agri-business company; and retainer contracts with expert irrigation, agribusiness and nutrition experts. Common for all TA will be that contracts will be performance-based, subject to renewal upon satisfactory performance and with explicit requirements for on-the-job mentoring and knowledge transfers to the teams they will be supporting. In most cases, a fee-based structure (based on timesheets) will be recommended. Detailed TORs are presented in Annex 3. Draft TORs for Technical Assistance .

69. The Project will recruit technical assistance as and when required to support the technical quality of the work and to ensure implementation capacity. The specific types may vary and include:

a. Short term national, regional or international TA by individual consultants or consultancy companies. This will be for particular assignments, for example studies or undertaking a specific training programme;

b. Long term international TA by individual consultants, for example procurement experts to provide hands-on, mentoring and technical quality assurance support throughout Project implementation, on one year contracts renewable based on performance;

c. Any of the above on retainer contracts (for example design engineers) to be called upon when a specific needs arises

PART II: DETAILED IMPLEMENTATION MODALITIES

II.1: START-UP

70. The start-up phase usually lasts four to six months. The Lead Agency (MoA, headed by the Director of Planning and Statistics) will develop a work plan for preparatory activities and liaise with IFAD to organize a start-up (induction) workshop. The preparatory activities include:

a. Appointment of NPCO staff. Re-appointment of seconded staff under NAP will be acceptable, given that the qualifications and experiences are aligned with the updated TORs. The individual's other assignments should be taken into consideration, given that NPCO staff, under IADP, are expected to be assigned full time to the project. This activity will be undertaken by HRD, in collaboration with the Director of Planning and Statistics. IFAD Non-objection will be required for the position of Project Coordinator.

b. Appointment of ZPCO staff, spearheaded by the Zoba Governor, but with a type of Non-Objection from MoA.

c. Appointment of subject matter specialists, who will support the NPCO as and when required.

d. Undertake start-up workshop (internal) for NPCO and ZPCO staff, to provide an overview of project documents, ensure a common understanding of the project strategies (above), and to provide an overview of IFAD guidelines and modalities of operation.

e. Recruitment of critical TA, including for Procurement, Financial Management; the Senior Natural Resources Management and Irrigation Engineer; as well as the Nutrition Education and Assessment Expert. Remaining TA may be recruited in a phased manner.

f. Undertake watershed mapping and prioritization exercise (as described above under Targeting Strategy).

g. Develop a detailed 3-year Project implementation, planning specific activities for each selected project area, and for each target group, under the two Components. This approach is recommended to strengthen the guidance provided from the NPCO to the Zoba and Sub-zoba levels in terms of planning. Lessons learnt from NAP indicate that the bottom-up planning approach with limited overall results-orientation and strategic oversight, combined with the decentralized structures of the Zobas, with the ZPCOs reporting to the Zoba Governor, in effect, undermined the projects ability to reach its objectives at the overall project level, through the project successfully financed priorities in the given Sub-zobas and Zobas. This project will therefore, in a participatory manner, develop indicative planning frameworks, based on which the Zobas will be able to develop annual AWPBs, consolidated nationally by the NPCO, as per the standard procedure (see more under Part III: Project Procedures, below). More guidance is provided in Annex 9. Notes related to the 3 year planning;

h. Develop communications materials describing the forthcoming investment, the menu of activities that is envisaged and the eligibility criteria and procedures for accessing the Project. Identify appropriate channels for dissemination, per target group, for example local radio stations, community-based organizations, women's groups, youth football clubs, churches, etc.;

i. Hold official project launch (event);

j. Agree with IFAD on immediate and urgent training needs for NPCO staff, e.g. Project management (planning, M&E, financial management (FM), procurement, IFAD various guidelines and procedures);

k. Initiate major, urgent procurements, including for financial management system (software);

l. Finalise AWPB and Procurement Plan for the first project year (see more under Part III: Project Procedures, below). A draft first year AWPB and 18 months Procurement Plan were prepared as part of the design;

m. Finalization of any MoUs or other agreements with IAs required to implement Project activities;

n. Review updated information on Social, Environmental and Climate Assessment Procedures (SECAP) and Environmental and Social Management Framework (ESMF) requirements and ensure that this is properly incorporated into project procedures;

o. Develop TORs for baseline study (see more under Part III: Project Procedures: Monitoring and Evaluation) and socio-economic study which also captures details about women and youth issues[3] and initiate procurement processes; and

p. Initiate development of Targeting guidelines for Village Administrators. The Project should develop grassroots level targeting guidelines prior to activities taking off in the field, to guide ZPCOs and the various Zoba and lower level implementers on how to identify the specific activities and the specific beneficiaries for each activity. The guidelines should be developed in accordance with IFADs Revised Operational Targeting Guidelines, and be sent to IFAD for Non-Objection prior to finalization. Input from the socio-economic assessment (as well as KAP and baseline) should be incorporated to the extent possible.

II.2: WATERSHED PRIORITIZATION (PROJECT ENTRY POINT)

71. The Project will deploy a water-development-centred approach to activities, using the watershed as the planning unit, in the context of integrated water resources management (IWRM). This means that the Project will select watersheds and then plan other activities around this entry point.

72. The Project will undertake detailed watershed mapping, inventory of existing and proposed watershed and irrigation sites. This will be led by the Zoba engineers from the Soil, Water and Irrigation Branches, supported by AED Engineers and MoLWE, under the overall guidance of the TA and with coordination support from the NPCO. The criteria to select priority watersheds includes (in order of priority):

a. Watersheds with headwork (sunk cost) but untreated;

b. Treated and the headwork constructed but irrigation infrastructure not developed;

c. Treated but without a headwork;

d. Irrigation system and on-farms land developed downstream of treated watersheds but malfunctioning (requiring rehabilitation) [4]; and

e. New or partially treated.

[3] The Terms of Reference for the assignment should be shared with IFAD and it should be ensured that women and youth strategic opportunities and constraints are captured, to feed into the specific activities of the project. A vocation needs assessment for youth module will need to be included.

[4] Rehabilitation refers at activities addressing the root cause, which led into scheme deterioration and support to improved water management and O&M.

73. Within this prioritized list, 10 watersheds will be selected for rehabilitation. The watersheds should be mapped, to get a sense of geographic coverage.

74. The watersheds do not follow administrative boundaries, and are expected to cover all Zobas of the country. However, there may be some Zoba's not covered by the prioritized watersheds, as they do not receive much water, for example the coastal areas. In this case, the project may choose to select hotspots as additional project areas, based on an assessment of environmental hotspot areas or socially excluded populations.

75. Based on the watersheds and hotspots selected, the project will select Sub-zobas with high food and nutrition insecurity and poverty. All steps of the process, including the analysis and justifications, should be done in a transparent way and well documented.

76. Selection of beneficiaries is done on an annual basis by the Village Administrators as part of developing the Sub-zoba AWPB, done following the guidelines developed by the NPCO.

II.3: COMPONENT 1: INTEGRATED WATERSHED MANAGEMENT

77. The expected outcome of Component 1 will be: "improved productivity and resilience of smallholder livestock, rain-fed and irrigated crop production systems." Under this component, the Project will support the dissemination and adoption of sustainable innovative practices and technologies adapted to climate change and to small farmers' needs and livelihoods. In this line, thanks to food production diversification and nutrition education, farmers will increase their resilience and nutrition.

78. Table 5 indicates the outputs to be achieved under the Component. The overall outreach of Component 1 will be 17,530 households and 11,915 ha of land under soil and water management practices, and 8,180 households will be reached through watershed rehabilitation and sustainable irrigation, as well as water for their animals.

Table 5: Expected outputs of Component 1

	Mid-term milestones	End-line targets
Output 1: Improved watershed management and soil and water conservation		
Area of land covered by improved watersheds and SWC measures	• 5 watersheds (each 1, 000ha) treated by improved biological and physical soil and water conservation measures (total 5, 000 ha)	• 10 watersheds (each 1, 000ha) treated by improved biological and physical soil and water conservation measures (total 10,000 ha)
Area of land irrigated	810 ha irrigation developed: • 250ha irrigated by shallow (tube) wells • 60ha small-scale surface irrigation developed from dams • 500ha existing spate irrigation upgraded	1,915 ha irrigation developed: • 500ha irrigated by shallow wells (tube) • 160ha small-scale surface irrigated by dams • 5ha pilot drip irrigation developed • 1,250ha existing spate irrigation upgraded

79. The Component will be coordinated by the Component 1 Technical Coordinator, seconded from the AED department, appointed to the project on a full time basis. He will be supported by three full-time technical experts, on watershed management; irrigation development; and research. Pre-identified partners under the Component include:

a. Technical units within MoA;

b. Zoba Branches of Soil, Water Conservation and Irrigation; and the Agricultural Infrastructure Unit of the Infrastructure Branch;

c. Ministry of Land, Water and Environment;

d. NUEW and NUEYS; and

e. FAO.

80. The project will rehabilitate existing water management schemes (targeted by ongoing or previous government actions and/or funds/donors African Development Bank

(AfDB) / European Union (EU) / United Nations Development Programme (UNDP)) and possibly complement these further by social and environmental management actions (including the Minimum Integrated Household Agricultural Package, MIHAP). The Project will also build on and strengthen ongoing National Agricultural Project (NAP) interventions.

81. Detailed activities and targets of the Component 1 are presented in Table 6: Component 1: Detailed activities and its contribution to total beneficiaries below. This chapter describes, in a phased manner, activities to be undertaken within the three main groupings of activities under the Subcomponent, namely SWC and irrigation activities, including both technical design, public works execution and establishment of water users associations; increasing metrological capacity in the country; and environmental education. Upon successful implementation, the following outputs will have been reached:

Table 6: Component 1: Detailed activities and its contribution to total beneficiaries

Agricultural models			y1 2021	y2 2022	y3 2023	y4 2024	y5 2025	y6 2026	Total	Investment cost /ha (US$)	ha/HH	Total number of HH
Model 1: Sorghum Intercrop with Mug Bean (1 ha) - rainfed	ha	RAINFED	-	2,000	6,000	2,000	-	-	10,000	200,00	1.00	10,000
Model 2: Sorghum Intercrop with Mug Bean (1 ha) - Irrigation	ha	IRRIGATED	0	0	100	200	200	0	500		0.50	1,000
Model 3: Finger millet with intercrop with pulses (chickpeas) (1 ha) - irrigation		IRRIGATED	0	0	100	200	200	0	500		0.50	1,000
Model 4: Irrigated sesame (1 ha)	ha	IRRIGATED	0	0	50	100	100	0	250		0.50	500
			-	-	250	500	500	-	1,250	2.000,00		
Model 5: Finger millet with intercrop with pulses (chickpeas) under irrigation (1 ha)	ha	IRRIGATED	0	32	128	160	80	0	400		0.10	4,000
Model 6: Irrigated Sesame with Irrigated Horticulture Production	ha	IRRIGATED	0	8	32	40	20	0	100		0.10	1,000
			0	40	160	200	100	0	500	5.000,00		
Model 7: Irrigated Horticulture production surrounding by Elephant Grass	ha	IRRIGATED	-	6	12	21	9	-	48		0.13	384
Model 8: Wheat production with Irrigated Horticulture production	ha	IRRIGATED	-	6	12	21	9	-	48		0.13	384
Model 9: Sorghum intercropped with Desmonium and Elephant Grass - Push-pull system	ha	IRRIGATED	-	8	16	28	12	-	64		0.13	512
			-	20	40	70	30	-	160	7.000,00		18,780

82. **Recruitment of technical assistance (TA).** A long-term TA, namely an International Senior Natural Resources Management and Rural Infrastructure Engineer should be contracted, as soon as possible. Draft TORs are provided in Annex 3. Draft TORs for Technical Assistance and Strategic Partnerships. Full time support (to sit physically with the NPCO) has been budgeted for 2 years (24 months), followed by 6 months in each of PY3 and 4, and finally 2 months in PY5. The Engineer will provide hands-on technical support to the implementing staff (across Ministries and Zobas) for quality enhancement during the planning phase, as well as quality control during construction.

83. To facilitate scheme design, the TA will support the NPCO to develop/undertake:

a. Template for preliminary/conceptual studies;

b. Guidelines and tools/templates for typical irrigation schemes; and

c. Hands-on training for Zoba engineers.

d. Training of trainers on Watershed committee / WUA formation, strengthening, and capacity building. Two MoA SWC experts, supported by the TA will be the trainers, training 2 SWC experts per Zoba, estimated as a one week residential training.

II.3.1: Subcomponent 1.1: Development and institutionalization of participatory integrated Water Resources Management Plans

84. **Initiating Watershed Management Plans (WMPs).** Based on the watershed selection, WMPs will be developed. The WMPs will be developed through a mix of interpretation of available data (desk analysis), such as watershed characterization maps and GIS or satellite data and any other data which might be available such as water mapping, population mapping, natural features, etc.; on-site visits; and on existing Zoba priorities. The process will be spearheaded by the Zoba staff for the Zoba within which the watershed fall, in consultation with surrounding Zobas, if needed. The process will be supported by the TA, the NPCO and MoWE, as required.

85. The plans will identify sites for SWC and irrigation (see further below). Each of the WMPs may be developed in parallel, without waiting for finalization of all of them to continue the implementation.

86. **SWC sites.** Within the prioritized watersheds, specific investment sites will be selected to reach a total of 7,500 ha, for example hillside closure and afforestation; hillside SWC, using micro-terraces, detention ponds, bunds, and biological options; tree seedlings nursery establishment or strengthening; on-farm physical and biological SWC, terrace, bunds, etc.; gully remediation check dams (gabion); groundwater recharge check dams (masonry) with outlets for drinking water; and river banks protection. A Soil and Water Assessment Tool (SWAT) will be used as a first step in providing guidance to help in identifying suitable sites for SWC interventions. Actual selection of the sites will be confirmed in the field. The criteria to be applied in the field for selecting the specific sites include:

a. Availability of a reliable source of water for livestock and irrigation (preferably also for human consumption);
b. Self-selection or willingness of beneficiaries to participate in the investment;
c. Watersheds with high level of land degradation and having potential or existing dam/s downstream;
d. Concrete opportunities to promote multi-purpose use of water including potable water for household consumption; and
e. Interest to create a Water users' association (WUA). Depending on the site specific situation, households in big upstream watersheds could have separate watershed associations while those in the small watershed could join the downstream irrigation WUAs as long as they are going to be irrigation beneficiaries.

87. **Irrigation site selection.** About 9,415 ha of irrigation (conventional irrigation from micro-dams or shallow groundwater sources and spate irrigation) schemes will be developed. Sites outside the selected watersheds could be selected, in case they have: (i) dependable water resources; (ii) access to market; (iii) potential for quick and maximum return to investment; (iv) potential to exploit sunk costs from early investments (e.g. existing but yet unutilized dams); (v) no ongoing similar support by other funds; (vi) no major adverse environmental impact; (vii) farmers willingness to cost sharing; and (viii) preferably, gravity fed or allows low head pumping using solar system irrigation etc.

88. In Southern Red Sea and Northern Red Sea Zobas (eastern lowlands) as well as a portion of Gash-Barka, which are mainly served by spate irrigation systems, it's very difficult to apply a watershed approach, among others, considering the enormity of the watersheds size (for example, in Wadi watershed of eastern lowlands, the catchment area under Wadi Mai Ule spate irrigation is 16,500 ha and that of Laba is 64,000 ha) vis-à-vis the limited resources of the Project. Apart from addressing critical environmental hot-spots, it might be difficult to treat the whole of spate irrigation watersheds. In this case, suitability for improved spate irrigation system will be the planning/implementation unit.

89. **Approval of WMPs.** Based on the technical assessment, WMPs with a recommended list of sites will be compiled by the NPCO and submitted to PSC for clearance. It is recommended that majority of the country be assessed in one go, to enable a prioritization process, in case many sites are identified. However, there will be flexibility to approve (or drop) sites along the way.

90. **Establishing Water User Associations.** Upon site approval (for both SWC and irrigation), the Zoba staff will ensure that the communities are engaged in the planning process and will initiate formation of Watershed Committees or WUAs. One WUAs will be established alongside each irrigation scheme, including all farms/irrigators falling within the hydraulic boundary of the scheme. The objective will be to ensure equitable water distribution and proper operation and maintenance (O&M) of the developed irrigation infrastructures. In each of the habilitated watersheds, a Watershed Committee should be established. It can be combined with the WUA if the watershed communities are also irrigators downstream.

91. A training of Watershed Committee members will be provided in participatory planning for each of the 10 watersheds; as well as about 2 farmers from each of estimated 111 irrigation schemes. The training will initially focus on participatory planning, and agricultural water management. The training last for one week; depending on the roll-out and location of the schemes, a detailed plan can be developed for delivery of the trainings.

92. **Institutionalizing modern technology for watershed management.** Two critical areas for strengthening MoA and MoLWE in their watershed management efforts, namely related to GIS mapping and remote sensing for monitoring and evaluation, in the greater picture of land use planning. Both of these areas will be supported by an institutional partnership with an international (non-profit) organization, and is further described under II.5.1: Subcomponent 3.1: Institutional Capacity and Annex 3. Draft TORs for Technical Assistance and Strategic Partnerships: Land use planning support .

II.3.2: Subcomponent 1.2: Operationalization of WMPs

93. **Design process.** For all selected sites (estimated about 161, across all types of interventions), Zoba irrigation engineers will prepare the preliminary/conceptual studies,[5] following the templates developed. The NPCO will review that the option is conceptually acceptable and approve. Zoba irrigation engineer will continue with the detailed design. Upon submission of the draft DD the NPCO will provide its comments in less than two weeks' time to enhance the DD. The DD, which includes the tender document, shall be finalized after all the comments are addressed. The procurement process will follow IFAD's Procurement Handbook and Standard Procurement Documents, as well as the standard procedures of ensuring competitiveness and value for money. Technical supervision will be carried out by the Zoba engineers as supported by the NPCO engineer and the TA, the later for complex issues.

94. **Public works execution.** The Community will be mobilized by the Zoba SWC and irrigation experts to contribute in labor during construction while ensuring fair compensation and in accordance to safeguards requirements and while observing the governing rules in the country. Once planned and designed, with the feasibility studies appraised, the specific interventions will be carried out under different modalities:

a. *Community labour (73 percent paid for by the Zoba and 27 percent farmers' contribution):* hillside closure and afforestation, hillside SWC, gully remediation check dams and river banks protection.

b. *Famer labour on own farms (fully farmers' contribution):* on-farm physical SWC, terrace, bunds etc.

c. *Community watershed management structures* will be established by the Zoba SWC and forestry specialists following standard guidelines and practices in Eritrea. Based on good practices tested in comparable environment, the TA could support to consultatively enhance the prevailing practices as deemed necessary. Seedling nurseries shall be established on lands owned and earmarked by the Community. Initially, these nurseries will be managed by the Project. Once the capacity of the Community is built to manage them, they will be gradually handed over to the community during the Project lifetime. This will happen once a sustainable management system, including running nurseries as private business by community selected groups, in place. Initially, seedlings shall be provided free of charge since these plantations are in communal lands and as there is a need to gradually build their confidence and ownership. As the Communities start benefiting through the user-right they are going to acquire, they will be sold as mentioned above. Varieties to be planted will be based on criteria such as soil conservation and fertility, and their use in economic activities such

[5] This report could be considered as a feasibility report. Once a site is in the correct path and conceptually acceptable, it's very likely that it will be feasible.

as beekeeping and the initial seedlings shall be sourced from existing nurseries as coordinated by the National and Zoba AED.

d. *Contracting of local artisans and masons* by the Zobas for civil works, masonry or gabion (gully remediation, check dams, groundwater recharge check dams).

95. **Watershed committees and WUAs.** After completion of the works, the project will continue to engage with the Watershed committees/WUAs. The process is headed by the Zoba SWC specialists following stand guidelines and practices in Eritrea. The WUAs governance structures, amount of fees to be collected and related details as well as other obligations shall be determined as per the abovementioned byelaw. Based on good practices tested in comparable environment/countries, the TA shall support the Zoba experts by way of improving/strengthening the WUA bylaws though dissemination of good practice guidelines and providing hands on- training.

96. Refresher trainings will be provided on agricultural water management and infrastructure O&M. Exchange visits may also be organized to other areas in Eritrea or abroad, as per the advice of the TA.

II.3.2: Component 1 flowchart

Figure 3: Flowchart of Component 1

Activity	PY1	PY2	PY3	PY4	PY5	PY6	Responsible
Initial development of WMPs							
Selection of SWC, irrigation, spate sites in the identified watersheds/hotspots/Zoba							NPCO
Approval of detailed WMPs							
WUA establishment ToT							Zoba SWC specialists
WUA/watershed committee establishment							Zoba SWC and community specialists
SWC rehabilitation activities							Zoba SWC
Irrigation development activities							
WUA/watershed committee strengthening							
WUA exchange visits							

II.4: Component 2: Crop and livestock productivity and rural livelihood improvement

97. The Component targets supporting about 20,000 households to improve their production activities.

Table 7 indicates the Outputs of Component 2. Specifically,

a. About 13,700 farmers will be trained through FFS or AFS groups;

b. 700 para-vets trained and working with at least 4,200 households on animal health and vaccination, and national level vaccination outreach of at least 10,000 households;

c. 118,500 households will benefit from FNE activities, with an additional 700 caregivers trained at community level.

d. MIHAP packages will be provided to 5,000 households;

e. 250 seed producers;

f. 120 POs will be strengthened;

g. 20 aggregation centres will be established; and

h. 30 processing centres will be set-up or upgraded.

Table 7: Expected outputs of Component 2

	Mid-term milestones	End-line targets
Output 2.1: Climate-smart production technologies adopted at large-scale		
Number of persons trained though FFS/AFS	• 4,521 (33% of project target)	• 13,700 farmers or agro-pastoralists trained
Number of additional para-vets delivering livestock services	• 400 trained and delivering services	• 700 trained and delivering services
Number of farmers received FNE	• 59,250 households, directly and/or integrated through other activities • 300 caretakers trained at village level	• 118,500 households, directly and/or integrated through other activities • 700 caretakers trained at village level
Number of seed producers supported	• 100 Seed producers supported	• 450 Seed producers supported
Number of households receiving MIHAP packages	• 2500 (of various types)	• 5000 (of various types)
Output 2.2: Target farmers have access to inputs and appropriate technologies and have improved both production and post-harvest management		
Number of farmers received improved seeds of targeted crops and forage		
Number of youth supported to serve as as agricultural service providers		
Number of agricultural tools manufacturers supported		
Output 2.3: Rural organizations and cooperatives are better engaged in entrepreneurial activities and products transformation		
Percentage of POs and agribusinesses reporting an increase in sales	• Agribusiness coaching system established; • 35 existing POs have developed solid and practical business plan	• 120 POs supported • 75% of supported POs are operating viable businesses after one year of creation / technical support
POs are better engaged in entrepreneurial activities and products transformation	• 12 workshops of agricultural tools manufacturers established • Piloted youth service delivery groups	• 20 aggregation centres and/or sell points set-up • 30 processing centres set-up/upgraded • 30 working capital provided through revolving fund

II.4.1: Subcomponent 2.1: Access to advisory services

98. Support will be provided according to their geophysical area and according to their livelihoods system. All practices recommended will be under climate smart agricultural approaches with rotations and fallowing, including TLST, IPM and organic fertilizers. In some cases, mix-breed or improved local dairy cows may be recommended. A detailed justification for the interventions is in Annex 4. Background on farming systems in Eritrea, while the optimized production systems are presented in Table 8. The Subcomponent will target households in the areas targeted by Component 1, namely in the treated watersheds and surrounding irrigation schemes.

Table 8: Characteristics of optimized farming systems

<table>
<tr><th>Arid and semiarid lowlands (agro-pastoralists): dam construction area for water for livestock/ water points (0.75 ha per household)</th><th>Lowlands (part of Gash-Barka) with Spate irrigation (2.25 ha per household); Sedentary mix-farms and agro pastoralists:</th></tr>
<tr><td>• Sorghum/ finger millet production intercrop with mung bean (70/30)or other forage leguminous drought resistant (0.75 ha) with cover fallow for dry season;
• Improvement of rangeland management, natural grasslands and introduction of water points for the cattle;
• Agro-pastoralist Field Schools: Strengthening herders' capacities on herd management, animal health, rangeland management, etc.
• Introduction of leguminous and graminaceous drought resistant species (desmanthus, stylos, crotalaria, etc.) for natural grassland improvement (developed by NARI);
• Planting of forage trees (acacia, leucaena) and double purpose trees like moringa,
• Establishment of closed areas, especially of dry periods
• Improved animal health services through para-vets.</td><td>• Sorghum/ finger millet production intercrop with mung bean (70/30)or other forage leguminous drought resistant (1.25 ha) with cover fallow for dry season or/and;
• Sesame production with supplementary irrigation for oil production (1 ha);
• FFS and AFS
• Introduction of leguminous and graminaceous drought resistant species (desmanthus, stylos, crotalaria, etc.) for natural grassland improvement (developed by NARI);
• Planting of forage trees (acacia, leucaena) and double purpose trees like moringa,
• Establishment of closed areas, especially of dry periods
• Improved animal health services through para-vets.</td></tr>
<tr><td>Moist- lowlands (part of Gash-Barka) perennial river and shallow water availability (wells and irrigation), (1.5 ha per household). Sedentary mix-farms:</td><td>Highlands (0.2 ha per household) Sedentary mix-farms:</td></tr>
<tr><td rowspan="2">• Sorghum/finger millet production intercrop (improved seeds) with mung bean or other forage leguminous drought resistant (0.75 ha) with possible supplementary irrigation, cover fallow for dry season and
• Sesame production with supplementary irrigation for oil production (0.75 ha); horticulture production during dry season;
• Forage and wood trees, fruit trees;
• Introduction of leguminous and graminaceous drought resistant species (desmanthus, stylos, crotalaria, etc.) for natural grassland improvement (developed by NARI);
• Introduction of forage like elephant grass with supplementary irrigation around the plots;
• Planting of forage trees (acacia, leucaena) and double purpose trees like moringa,
• Small ruminants (max 6 goats) and animal health or a mix-breed cow for dairy
• FFS
• Poultry (25)</td><td>• 3 cycles of horticulture production (0.2 ha) with surrounding forage crop (no fruit trees due to land tenure issues, elephant grass); or
• Wheat production with irrigated horticulture production, including pulses during the dry season (0.2 ha);
• Sedentary beekeeping only for household consumption
• 1 oxen
• Sedentary beekeeping 2 Hives (traditional or Topbar) for household consumption
• Poultry (25)
• FFS</td></tr>
<tr><td>Midlands (0.5 ha per household) Sedentary mix-farms:
• Possible push-pull systems for striga and fall army warm tolerance: maize/sorghum intercropped with desmodium and elephant grass surrounding the plot if irrigated, or intercrop with pulses for HHs consumption (0.5 ha) or/ and
• Horticulture surrounded with elephant grass
• 1 mix- breed dairy cow or small ruminants (max 6)
• Poultry (25)
• Sedentary beekeeping 2 hives (traditional or Topbar) for household consumption
• FFS</td></tr>
</table>

Farmer Field School Programme

99. A Farmer Field School (FFS) approach, and the adapted Agro-pastoralist Field School approach (AFS) will be used as a tool for strengthening adaptive research and participatory learning, by using trained facilitators to support the learning process. Summarized information about the approach and its objectives can be found in Textbox 1 below. The project will support this system to be set up at national level, with the three main clusters of activities: i) training of national Master Trainers (MT), by an international expert Master Trainers, who will subsequently train and backstop the facilitators; ii)

Training of a hoard of facilitators, who can be agriculture experts / extension workers; staff of non-Government entities or farmers themselves; and iii) conducting actual FFS cycles by farmers.

Textbox 1: Principles behind the FFS/AFS approach

The farmer field school approach (FFS) along with its various adaptations (agro-pastoralist field school, youth field schools, farmer business schools, climate field schools, etc.) is a *learning* approach which differs from traditional extension approaches which focus on *teaching* through the "train and visit" approach. The FFS approach is participatory and gives emphasis to self-directed learning and puts the trainer in the role of a facilitator. The approach has evolved over time to capture various target groups (farmers, pastoralists, youths) and topics (focused originally on IPM but now covering a wide range of enterprises and topics). The objective of the learning is to make farmers better *decision makers* in their own farms, enterprises and within their own ecosystem. The learning follows a structured format: trained facilitators (trained to facilitate, not teach) structure each FFS section around a learning topic and an observation session, where farmers observe, record and discuss what has happened in the field. If the learning is about planting, input dealers might be invited to participate in the learning process. This encourages record keeping and trains the farmers in structured information processing and learning.

Each FFS is different – the farmers get together and decide on the topics at hand as well as the appropriate meeting interval – for seasonal crops like tomatoes, meeting twice a week might be necessary; for perennial crops like coffee, once every two weeks may be enough, based on crop phenology. The topics which a farmer wishes to learn will also change over time as he/she becomes a better decision maker and more empowered – it will no longer be sufficient to be able to manage a small backyard garden – he/she may want to move into selling to the market or other more commercially oriented activities. He/she may also decide that once he has learnt for a few cycles, he has learnt enough to manage on his own. Due to the increased social cohesion built up through the process, many schools do choose to stay together and engage in other activities, such as savings or value addition.

Unique monitoring and evaluation tools (Monitoring, Evaluation and Learning, MEL) have been developed specifically for the FFS approach. The FFS approach is being institutionalized and professionalized through the establishment of the Eastern Africa Field School Hub (EA FS Hub), under registration in each East African Country. The network is hosted by the African Forum for Agricultural Advisory Services (AFAAS) and supported by FAO.

More information can be found at:

- http://www.fao.org/farmer-field-schools/home/en/
- http://eafieldschools.net/

100. The below steps outline the roll-out of the programme.

a. Identification of international (possibly regional) master trainers (MT) to develop and roll-out the programme, to be recruited though a competitive process and/or in partnership with FAO[6] and EA FS Hub.

[6] Either individuals (1-2) can be contracted as individuals, or an institutional contract / service provider contract can be entered into with agencies such as FAO Eritrea, EA FS Hub or another company, who can then recruit the experts, support rolling out of the activities, procure inputs etc. This approach might put less

b. International MTs will develop a roll-out plan for the various training activities and take the lead in developing manuals (adapting to the extent possible existing manuals from Kenya, Ethiopia, Uganda and other places), and provide hand-on support in the field during the first cycles of FFS[7].

c. Basic information for incorporation in the guideline is presented in Annex 5. Guidelines for participatory extension and research. Sessions on the importance of promoting crop diversification for better nutrition through FNE will also be part of the FFS/AFS curriculum. The manuals are to be validated nationally, and it is recommended to have validation by FAO as well (including representations in Ethiopia and Kenya), where the strongest experiences with FFS lies and with the African Forum for Agricultural Advisory Services, AFAAS, who host the East Africa FFS hub. This validation process can be informal;

d. Quality assurance process of manuals by various technical experts from within MoA departments and from Zobas (both FFS but also topical, like nutrition, soil, etc.), with technical support from the EA FS Hub;

e. Procure the various services required for conducting the training programmes, including renting venue and land (possibly at NARI, NAPHL or another suitable venue with land available for experimental purpose for 1-2 seasons) and procuring inputs to be used (seeds, fertilizer, small tools, protective equipment etc.). In case of TA, it may be explored if inputs can be procured through that TA; otherwise this will have to be included in the general project procurement through the MCU, in which case planning has to be done accordingly.

f. Training of MTs will be conducted at national level. MoA identify trainers from national and Zoba level for the agro-pastoralist MTs and for the farmer MTs. Out of the 30 MTs, 20 will be for FFS and 10 for the AFS, and 26 of the MTs will be form the Zoba level. There will be 2 international MTs for the FFS and 1 for the AFS.

    i. MT course for FFS will last 6 months, during the rainy season and will include 10 practice FFS in parallel.

    ii. MT course for AFS will last 12 months, but will be carries out in parallel with Training of Facilitators (ToF). This way, costs are reduced and the AFS could be implemented starting year 2.

g. With technical support from the international MT, the MTs will take the lead in developing and conducting a ToF programme for staff from the Zoba and Sub-zoba levels.

h. The ZPCOs, supported by the NPCO will identify and train FFS facilitators in a 3 weeks residential training. The facilitators should be a mix between lower level government staff and lead farmers; for both categories, the individuals must be willing and eager to take on such a facilitator role. The first (pilot) round might be organized at National level, with subsequent trainings at Zoba or Research Station levels. Extension workers and farmers should be trained together. In the Project, the following has been budgeted for (see calculation in Table 9):

pressure on the NPCO to facilitate the roll-out of this programme, especially given that the approach is new to Government in Eritrea.

[7] Context-specific manuals in relevant local languages will be developed for different pastoral and agro-pastoral livelihood systems and per agro-ecological zone, prioritizing: Integrated Pest Management (IPM), climate-smart-agriculture, TLST, practices adapted for smallholders prioritizing organic agriculture, rangeland management and fodder production, healthy and sustainable livestock feed sources and nutrition education / home economics. It should be ensured that each element is captured in a site-specific manor.

i. For FFS 232 facilitators will be trained in 17 courses during the dry season, each supervised by a MT.

ii. For AFS, 112 facilitators will be trained in 7 sessions alongside the MT course and the 3 weeks training will be extended in time to cover more season variabilities.

i. List and updated contacts of the various individuals trained must be kept, and refresher trainings might be organized. For this the dashboard developed by EA FS Hub could be used.

j. Based on this initial training, the ZPCO can facilitate development of detailed plans in each Sub-zoba, identifying where groups will be rolled out and which facilitators will support which groups.

k. Roll-out of the FFS.

Table 9: Estimate of number of FFS for 12 Sub-zobas divided into the two main categories

	FFS Category	
	AFS: Agro pastoralist + nutrition	Classic FFS: Climate Smart Agriculture + nutrition
Lowlands	45	60
	68	15
	17	22
Mini-MIHAP	94	
Mid and Highlands		390
Total	**225**	**465**
Grand Total	**690**	

101. **Roll-out at village level.** The budget has been developed for running around 690 FFS (see detailed calculation in Table 9 below). A group lasts 2 years, with the support of one facilitator, either from the public extension system or from the trained farmers. Each facilitator can cover 2-3 FFS in the same village for the 6 years Project duration. A facilitator who is an extension worker can facilitate multiple groups at once, while a farmer from a local community might only be able to facilitate one group in his specific area, given time and travel constraints. In addition to the lead facilitator, an additional facilitator (e.g. from Extension or another farmer) could be assigned, and Subject Matter Specialists will be called upon for the various topics. The Kebabi and Sub-zoba extension workers will supervise and provide technical support to the farmer FFS facilitators, with support from the MTs, as well as facilitate some groups themselves.

102. FFS participatory planning meetings will be done at village level before the implementation of the FFS to present the approach, agree on the participants, on the plot where the field school will be set and on key issues they would like to discuss and learn. The groups will meet on a regular basis (to be determined based on the learning agenda or crops / livestock identified), where the facilitators will guide and structure the learning process.

103. Inputs for FFS (for demonstration) will be provided through the MCU with support from the Agriculture Experts, and should be included in the Project wide input demand analysis/estimate.

104. **Regular advisory and extension services**. It should be noted that regular extension activities will continue to be implemented as per the standard modalities. For sustainability, the FFS approach should be integrated and institutionalized in MoA policies and strategies. Capacity building activities (under Component C) will strengthen existing methodologies to make them more participatory and embrace innovation. See Annex 5. Guidelines for participatory extension and research.

Para-vet service development

105. The Project will strengthen rollout of these services by the Dairy Unit under AED, and implemented by the Dairy Unit at Zoba level, through the following steps:

a. Manuals will be developed to guide the business model for para-vets, including models for payment for services and cost recovery required for the services. The price for the service normal ranges from 50-150 Nakfa for AI. A normal daily working rate in 50 Nakfa, plus the actual cost of drugs cost/vaccine. For vaccine application, the current cost is around 80 Nakfa, but this will have to be re-calculated as it is currently subsidized.

b. In order to professionalize in a long term the para-vet service, AED will standardize the trainings by developing training modules and an official certification and course for the mid and long term development of the profession. The training modules and material will be developed by veterinary experts of AED, covering the main services that para-vets do. Lessons from the past para-vet will be taken into account by the AED. The training will be mainly practical with some theory. During the capacity building that will be given to the health clinics, the training and description of the para-vet training will be given, with adjustments during the course of the years as any new developed activity.

c. Procurement of input kits for para-vets will be done at national level and be stored at NAPHL until they might be distributed on a one by one basis to the relevant youth, through the respective decentralized animal health clinics. It will be critical to procure all the items at once, through this might be through separate steps, and a mix on national and international procurement.

d. Identification of interested youth at village level by Sub-zoba / Kebabi extension agents in agreement with the health clinics. The targeting criteria will be: young and interested in developing this profession, having some knowledge and experience on livestock management and health (for ex. From an agro pastoralist family), having basic school education;

e. 700 para-vets (see calculations in Table 10) will be trained to deliver services to the communities.[8] The trainings will be given by veterinary experts from each decentralized clinic, with the support of veterinary experts from AED who will also give them capacity building support. The AED will also facilitate the para-vet training with a marketing expert who will trained them on basic business management skills, for their work to be sustainable and lucrative.

f. Provision of kits to trained youth para-vets. Sub-zoba and Zoba health clinics and agricultural experts will monitor the performance of the para-vets and provide technical assistance.

g. MoA will develop a livestock certification scheme for para-vets.

[8] Vaccinations, dressing of wounds, pregnant diagnosis, primary health issues diagnosis, herd registration, information to framers on livestock issues, artificial insemination (in specific areas).

Table 10: Calculation of the number of para-vets to be trained

	Para-vets	Number of hhs	Animals per hh	Total animals	Villages*	Assumptions
Lowland	430	42,020	20	840,400	216	Sparsely populated with more animals: 5 para-vets per village
Mid/ highland	270	87,451	4	349,805	258	2 para-vets per village
Total	700			**1,190,205**	**474**	
Number of animals to be served per para-vet				746**		

Notes: (*) 2 Sub-zobas per Zoba selected for intervention; (**) though the para-vet needs might be greater, the Project will set a realistic target in terms of implementation capacity and quality of interventions, establishing a standard for future interventions to upscale.

Nutrition education

106. A wide range of activities directly targeting nutrition improvements in the rural communities at large will be implemented directly by the NPCO (Social inclusion officer), with partners. A technical assistance (consultant) should be recruited immediately - see draft ToRs in Annex 3. Draft TORs for Technical Assistance and Strategic Partnerships.

107. Three pieces of practically-oriented analytical work will be undertaken during the first project year, to inform the nutrition work, both nutrition activities as well as elements mainstreamed throughout the project, for example integrating nutrition into the FFS curricular (described above). The activities include:

a. Undertake baseline knowledge, attitude and practices (KAP) survey. If a partnership with FAO is established by the project, technical expertise can be drawn from there. Even if not, detailed guidelines and draft questionnaires exist and need only to be adapted to the Eritrean context, as well as translated. Guidelines for assessing nutrition-related Knowledge, Attitude and Practices are available here: http://www.fao.org/3/i3545e/i3545e00.htm. Although technical input from the TA is preferable, the exercise should be initiated in a timely manner, even despite procurement delays or similar. Development of the methodology can start immediately and field work conducted as soon as the Sub-zobas are identified (using the whole Sub-zoba as enumeration area). Data collection can happen through the Sub-zoba structures, relying on Home Economics or Agricultural Extension workers. In each area, the field team should be trained on proper interview technique to ensure that the voices of the beneficiaries are heard.

b. Carry out an assessment (simple study which can be carried out by the home economics unit under AED and/or in partnership with NEUW) of locally available foods in each of the selected Sub-zobas.

c. Conduct trials of improved practices (three day training sessions conducted at each Zoba with selected lead farmers)

108. Based on the above, manuals with improved recipes of locally available foods that can meet the nutrition requirements of the vulnerable groups, can be updated and finalized, along with training material for training both men and women at community level, as well as public staff. The TA will develop the manuals and support the NPCO to organize these various levels of trainings in years 3-5:

a. Establishment of community kitchens (one in each of 60 projected project Kebabis) and conducting food preparation demos and training of women will be led by the extension workers and home economics at the Zoba and Sub-Zoba levels. In the AWPB process, and for specific activities which they might not have capacity to implement, members of the NUEW at village level might be engaged as community level trainers to increase outreach,

improve targeting of the activities and women empowerment. Small per diems might be paid for the services;

b. Trainings at community level will be delivered to lead women and caregivers for improved nutrition (2 women per caregiver, per 44 villages). In project year 3 and 4, refresher trainings may be organized. 2 trainers from each Sub-zoba, will meet 2 days at Kebabi level (clustering 5 villages). A similar cascade training mechanisms, as the one used for offers at decentralized level, can be used at community level with the initial technical support and supervision of the nutrition assessment and education.

c. Training sessions should be organized to improve the capacity of MoA, Zoba and Sub-zoba staff, possibly using a cascade mechanism of training of trainers (ToT) and with the initial technical support of the nutrition assessment / education expert. Trainers from NUEW are to be included in the training programme, so as to increase their capacity to provide training sessions on a needs basis.

d. A nutrition awareness campaign will the undertaken in partnership with NUEW and other partners, using TV, radio shows and other such media.

109. Towards the end of the project, the KAP survey should be repeated. The MIHAP (with the various modified packages) should also be evaluated for its effectiveness in reaching nutrition outcomes.

Flowchart

Figure 4: Flowchart of Subcomponent 2.1

Activity	PY1	PY2	PY3	PY4	PY5	PY6	Responsible
Farmer Field Schools							
Master Trainers Course							International MT - AED
Training of Facilitators							AED
FFS implementation							Sub-zoba Extension Workers, Farmer Facilitators
Para-vet services							
Development of manual and standardized training modules							NARI
Procurement of kits							AED
Identification of youths							Sub-zoba
Training of animal health clinics staff							NAPHL
Training of para-vets							NAPHL
Provision of input kits							Zoba
Nutrition Education							
Recruit TA							NPCO
Undertake analytical work: - KAP baseline survey - Local food assessment - Improved recipe trials							AED – home economics or FAO
Undertake market assessment of locally available food							AED – home economics
Develop manuals and recipes							TA
Establishment of community kitchens and cooking demonstrations							Zoba
Trainings to caregivers							Zoba
Training of Government staff							NPCO – TA

II.4.2: Subcomponent 2.2: Sustainable access to inputs and technologies for enhanced production

MIHAP

110. MoA is currently reviewing the MIHAP programme, to assess the options of adopting differentiated packages for different target groups. The NPCO will support this analytical work and re-confirm the relevance of the packages they will distribute to the target groups. Tentatively, three packages are envisaged, however, these may be further modified or even more differentiated packages may be developed. The three proposed packages are:

a. **Full (traditional) MIHAP package:** subject to proximity and availability of perennial water sources and the willingness and farming capacity of rural households;

b. **Revised MIHAP** targets vulnerable households with limited access to water coupled with limited technical and human capacity to maintain livestock. Chickens are an important source of animal protein and drought resistant cereals and trees can be a source of food and wood for cooking and selling. The most suitable breeds and varieties will be identified jointly with NARI.

c. **Mini-MIHAP** targets agro-pastoral households in arid and semi-arid lowlands and arid parts of Gash-Barka. The package does not envisage provision of animals but rather the improvement of the conditions of those already owned by the households who experience scarcity of water and pasture. Due to geographical remoteness and isolation, these households are likely not to benefit from other project activities linked to water management and irrigation, and therefore require specific targeted actions to improve their food security and nutrition.

111. Table 11 provides a detailed overview of the contents of each of the three packages, as well as the proposed agro-ecological zones, farming systems and the tentative number of beneficiaries to be targeted. For each of the three packages, guidelines will be updated (traditional MIHAP) or developed (revised and mini-MIHAP) by the MIHAP focal persons in MoA, through a consultative process with implementers and the expert of nutrition assessments and education, to be contracted as TA for the project. Delivery of the MIHAP package will be done through existing and well-known channels, of Village Administrators and extension workers identifying vulnerable households who live up to the criteria. The extension workers will provide the required training to households including, to the extent possible, on food and nutrition education. Critical will be planning of availability and quality/variety of inputs to be provided to households, which will form part of the overall Project exercise of input planning through the MCU, as part of the AWPB exercise. The extension workers will ensure that business planning becomes a central part of the MIHAP support package to

Table 11: Overview of MIHAP packages per target group

Traditional MIHAP (targeting 1000 households) Moist low-lands- part of Gash-Barka) perennial river and shallow water availability (wells and irrigation) and mid-land (1000hh targeted out of the 2730 hh targeted by FFSs)
Cow - mix breed (1*hh) or Small ruminants (6*hh) (50% of households to receive either) Seeds - sorghum/millet , horticulture, forage, sesame - (50kg*hh) Fruit trees/ wood trees (seedlings) Chicken (25 * hh) Procurement of cages Energy-saving cooking stove- full installation cost, including training (1*hh)
Revised MIHAP (mid-land and highland) - (targeting 1000hhs)
Small ruminants (6*hh) Chicken (25 * hh) Procurement of cages Wood trees - seedlings (20*hh) Seeds - Sorghum/millet, horticulture, forage- (30kg*hh) Beehives (2*hh) - 50 % hh traditional Beehives (2*hh) - 50 % hh modern (for commercial purposes) Energy-saving cooking stove- full installation cost, including training (1*hh)
Mini-MIHAP Support to agro-pastoral households (arid and semi-arid lowlands, also part of Gash-Barka) (4000 hh, about 2067 of which will also be supported under FFSs)
Inputs, tools and equipment for home gardens Energy-saving cooking stove- full installation cost, including training (1*hh) Sesame-sorghum/leguminous seeds (25kg/hh) Forage/ wood trees seedlings (20*hh)

Note: Considering the great number of livestock of some families, livestock will be given out according to actual, assessed lack and need, taking into account the burden of providing feed and water for the animals.

112. About 5,000 households will benefit from the different MIHAP packages and a further 23,000 (outside those targeted by other project activities in which FNE is mainstreamed) will be targeted by actions of FNE, including cooking demonstrations and other community targeted actions. MoA estimates that the MIHAP package may provide sufficient food for a healthy and diversified diet to the participating farming households, as well as four other families. Thus, the indirect (secondary) number of beneficiaries of this action will be about 3000 more families.

Seed multiplication

The Project will support professionalizing and more efficient distribution, focused on key crops and forage seeds. Table 12 provides and overview of the analysis made, targeting a total of 675 seed multipliers.

Table 12: Seed multiplication targets

	Mid and highlands			Lowlands				Forage research	Total
Crop	**Wheat**	**Forage**	**Chick peas**	**Sorghum**	**Sesame**	**Millet**	**Mung bean**	**Forage (NARI)**	
Yield per ha	1500	150	700	800	400	700	400	400	
Ha per multiplier	0.1	0.1	0.1	0.5	0.75	0.75	0.75	0.75	
kg produced per multiplier	150	16	70	400	189	526	300	300	
Seed rate per ha (kg)	20	30	25	20	4	4	20	20	
Number of producers targeted by multiplier	37.5	8	56	44	63	263	50		12,400
Number of producers	3000	900	1500	3000	700	1300	2000		
Ha per producer	0.2	0.1	0.05	0.5	0.75	0.5	0.5		
Seeds requirement (kg) per producer	4	2	1	9	3	2	6	60,000*	
seed multipliers	**80**	**113**	**27**	**68**	**11**	**5**	**40**	**100**	**443**

*Notes: *) Kg of seeds for 1500 ha upstream and for agro-pastoralist*

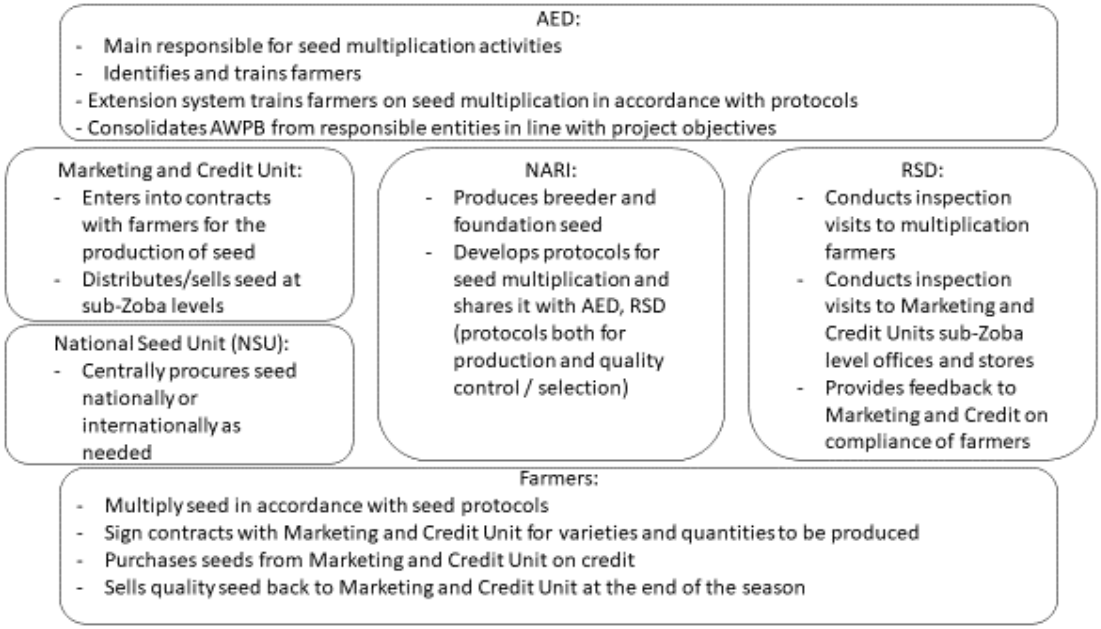
113. The implementation modalities will continue as per standard Government procedure: AED is overall responsible for seed availability, to be executed through: the Marketing and Credit Unit; the RSD and NARI. Each of the departments will develop an AWPB on the activities they wish to carry out, to be consolidated by the NPCO. Several changes are recommended to improve the process:

a. During the project start-up phase, a 3 year planning and prioritizing exercise for seed multiplication between each involved entity will be discussed, including modalities for support to the seed multipliers (e.g. strengthened focus on division of labor and mandates; improved coordination between the involved actors; and focus on increased retention of farmers for improved quality and productivity);

b. Upon receipt of the AWPBs, the NPCO will ensure that these are coordinated and in line with the respective mandates of the departments, and in-line with the principles promoted by the Project, as outlined in Figure 5 below; and

c. Hands-on support should be provided directly to seed multipliers, clustered into groups of 10 according to type of seed and location, by NARI/AED experts, once a contractual agreement has been entered into with RSD. Project financing has been earmarked for this.

Figure 5: Roles and responsibilities of each partner in a more professionalized seed multiplication system



Flowchart

Figure 6: Flowchart of SubComponent 2.2

Activity	PY1	PY2	PY3	PY4	PY5	PY6	Responsible
MIHAP							
Delivery of packages							AED
Seed multiplication							RSD
Development of protocols							NARI
Seed multiplication activities							NSU

II.4.3: Subcomponent 2.3: Producers' Organizations (PO) and Cooperatives Support

114. Subcomponent 2.3 seeks to build the capacity of producer institutions on various organisational, technical and business management aspects. The support to the producers' institutions will be aimed at ensuring that they are able to address the constraints/challenges faced by their members while, at the same time, exploit opportunities presented by the prevailing circumstances. Therefore, Subcomponent 2.3 will establish an agribusiness coaching system and strengthen existing (and possibly new) POs, while in the process learning and documenting viable business models and studying the market. The Project will pilot youth agricultural service delivery activities, with the dual purposes of increasing agricultural services available to producers, and generating youth employment. Aggregation and processing centres will be piloted. The approach behind the Subcomponent should be considered a pilot on how to stimulate private sector development and market access for farmers. At MTR, evaluation of the approach will be undertaken and activities either continued and up-scaled, or adjusted.

Textbox 2: The practical approach adopted to support producers organisations and cooperatives

In Eritrea, value chains are not well developed, and the roles of different partners within them are not clearly defined. In a vacuum with limited private sector development, POs tend to take on all functions of the value chain (aggregation, storage, processing, marketing and contract farming), often overwhelming the management and institutional capacity of the PO. In other cases, POs organize the bulking of produce, for example, but do not actively take on marketing functions (looking for buyers, organizing transport to larger collection centres, etc.) and are thus not able to pay better prices to their members, undermining the role of POs. Thus, the Project will seek to further develop the POs to take on different functions, as well as support the formation of new actors to take on some of these functions. For example, youth agribusiness could purchase from POs, transporting produce to the major centres, or providing services to the farmers (like weeding), to increase their profitability in a scenario where household labour is a limiting factor for production.

The entry point to achieve this development, is working directly with existing POs, to professionalize their operations (including enlarging the membership base; improve needs assessment, internal governance, marketing functions, operation management and increase their profitability) and place them strategically in the value chain. This can be done through both business plan development and management coaching, as well as with hard investments to support the functions which have been analyzed to be strategic, for example processing, cold storage or similar. The project will also actively support establishment of new POs and SMEs in the areas where gaps are identified. This could be both in marketing, service delivery, and in value addition. In addition, this activity can be targeted to support youth, women and other groups who need strategic support.

115. Subcomponent 2.3 implementation will be spearheaded by AED; coordinated by a full-time designated focal person in the NPCO (seconded from AED). A consultancy company will be recruited to support these efforts.

116. The subcomponent targets strengthening POs, a broad term used to cover associations, cooperatives and similar structures (see definitions in Part I of this manual). Youth employment will be explicitly targeted through piloting agricultural service delivery groups and establishing tools manufacturing workshops, as micro SMEs (registered or non-registered). It should be noted that this will happen in a landscape of very few SMEs and service delivery actors, and hence the approach should be flexible, monitored on a regular basis and adjusted accordingly.

Establishing an agri-business coaching system

117. The first sets of activities seek to build agri-business capacity in the country, to ensure that there are individuals available who can train and guide POs and subsequently SMEs. Given the limited private sector development of the country, this capacity is not readily available, and an international technical assistance should be recruited to support building this capacity.

118. **Recruitment of international TA.** An international (or regional) agency, centre or consultancy company (team of consultants) will be recruited to support AED build its capacity in agribusiness development and carry out TA missions to: (i) introduce the Project team, in particular staff from AED and the NPCO to international experiences and best practices in agribusiness; (ii) develop viable models of POs, and profitable marketing business models; (iii) draft an agribusiness manual, including case studies related to market and investment opportunities analysis, analysis of cooperatives and SMEs models, business plan preparation and follow-up, business management coaching, etc.; (iv) establish and train a team of agri-business Coaches to provide strategic support to Project

implementers; (v) organize international exchange visits. This will be a combination of desk/distance work and in-country missions. See Annex 3. Draft TORs for Technical Assistance for a more detailed TOR.

119. **National Trainers.** The NPCO Agribusiness Expert, through a participatory and merits-based approach, will identify individuals with experience and vision for agribusiness development. National Trainers are expected to come from EWAA; the Agricultural College and/or be individual consultants. They would be trained and affiliated to the Project as independent consultants on a needs basis. The TA will support AED to develop a training roll-out model and to conduct the actual training. It is envisaged to first train a cadre of National Trainers (6 national consultants, most likely based in Asmara). These will be trained both on technical issues and as Trainers of Trainers, and will then, train Agribusiness Coaches (12, 2 from each Zoba).

120. **Agribusiness Coaches.** The National Trainers will develop a curriculum, identify potential Agribusiness Coaches from each Zoba and develop a training programme, with support from the TA. The trainings would be carried out at national level for two Agribusiness Coaches per Zoba. If any of the identified 12 Agribusiness Coaches should drop out in the process, a substitute should be identified and trained immediately. Refresher trainings should be planned for the Coaches, and the NPCO should ensure that lessons and experiences and shared and that knowledge-sharing forums on agribusiness development are organized. At the end of the training, Agribusiness Coaches should be able to train the PO leaders and managers involved in marketing to prepare business plans, organize the related operations (aggregation, storage, marketing, processing, etc.), and promote post-harvest loss reduction, food quality and safety. They will also provide operation management coaching (follow-up by phone call and periodic visit).

121. **Development of sustainable and profitable models.** The Project will establish a working group to document, develop and improve the business models of existing POs and SMEs. The working group will be chaired by AED and comprise National Trainers, Agribusiness Coaches and selected board members of existing POs, as well as private sector representatives. The working group will undertake (i) self-assessment of their mandate and functions, organization and management, board roles, decision making, etc., (ii) inventory, needs assessment and prioritization of agricultural and marketing services to promote; (iii) market assessments to collect concrete guidance on where and what types of POs and SMEs to establish; (iv) international exchange visits to discover diversity of institutional set-ups; and (v) identification and development of tools for capacity development. The working group will be able to hire (through the NPCO) consultants to undertake analytical work in support of the TA, as required. The ultimate output of the working group will be the crafting of agribusiness manuals to be used by the Agribusiness Coaches in the work with the POs, as well as documentation of the various types of business models.

122. In terms of timing, the agribusiness manuals, based on the work of the Working Group, will take time to develop. The TA should early on prepare drafts to be used for the initial work, to be continuously updated as lessons are learnt.

Strengthening POs

123. Once the Agribusiness Coaches are trained and draft manuals in place, their first task will be identification of existing POs[9] to work with (SMEs are also eligible for the support, to the extent that they exist). Priority will be given to youth and women POs and those with an equitable representation throughout the structures. The TA will support AED

[9] It is not evident if clear eligibility criteria are required, given the relatively small number of existing POs in the country, and the limited private ownership. However, the NPCO may develop a profile for the typology of POs to be supported, if it is deemed necessary. This could seek to overcome any cases of opportunistic behavior observed. It is not evident that there would be many likely candidates at this early stage of the project roll-out and most POs are likely to be known to the Sub-zoba staff.

and the Agribusiness Coaches to develop a detailed workplan for what support to provide, when, how, etc. An overall plan should be developed, feeding into the AWPB.

124. The Agribusiness Coaches will use the scorecard methodology from the IFAD guidelines on rural institutional development to assess the degree of development of the POs, and provide hands-on support accordingly. The technical support provided to the POs (by the Agribusiness Coaches) will include:

a. **Business Plan preparation.** The Agribusiness Coaches will support POs to i) analyze off-taker and market needs; ii) clearly identify the services they need to provide to their members e.g. type and cost of local agricultural services, production aggregation functions, direct marketing or through partnership, processing, etc.; iii) set realistic business objectives; iv) plan the business operations; v) prepare credit requests to the revolving fund or banks and vi) a quantification, in monetary terms, of the available asset base, for the POs to demonstrate co-financing ability at a later stage (for example valuation of buildings constructed; materials such as bricks; and labor). Key Performance Indicators (KPIs) should be defined and the progress towards achieving them be evaluated on a regular basis. KPIs could include (i) clear management structure in place; (ii) by-laws developed and registered at the Sub-zoba; (iii) price mechanisms for bulking, sales etc., established; (iv) successful internship of the managers; (v) representation of women both as members and in managing capacities, etc. The Agribusiness Coaches should request practical peer review and fine-tuning of the business plans from similar, successful POs.

b. **Management coaching.** Once Business Plans are in place, the Agribusiness Coaches should provide hands-on coaching to board members and managers. This should be frequent and in person for about 3-6 months, and can then be quarterly visits and phone call follow-ups after that. The Agribusiness Coaches should support the managers to get internships (or undertake exchange visits) to other POs.

c. **Trainings and quick-fixes.** Depending on the issues observed, the POs can be supported with (i) the organization of management structures and supply lines; (ii) setting up financial management systems; (iii) training on post-harvest and technical aspects of marketing and processing, including food quality and safety; (iv) setting up linkages with private partners; (v) exchange visits for boards; (vi) national and international technical assistance as required. Textbox 3 shows an example of support which might be provided towards beekeepers. POs will be strengthened through increasing their membership base, with particular emphasis on

d. **International exchange visits** may be organized for POs, expected to last about one week for a group of 15 members.

125. New POs may also be created, however, this will be limited to the capacity of the Agribusiness Coach and his team in terms of time and technical capacity, as well as the market situation at hand. New POs could be formed based on existing farmer groups, or around an existing processing facility where the PO has disintegrated. The menu of support would be the same as described above.

Textbox 3: Support to the honey value chain

Small, commercial beekeepers could be an example of POs to be supported – sedentary beekeeping in Debub and migrant beekeeping in the highlands and eastern lowlands. Different types of support, at different stages of the value chain, could include:

- **Support to producers.** The Project could introduce the topbar beehives to small, sedentary, in line with the Government/FAO promotion. This could be supplemented by trainings to all targeted producers and POs on: Beekeeping and management, value addition and quality controls.
- **Support to potential PO members,** to incentivize them to organize, could be provided in form of a start-up kit including the initial registration and annual fees.
- **Support to the PO structures.** POs working in the honey value chain could receive capacity building on organizational and business skills and product transformation and quality control. Support will vary according to size and type of production or processing system: for e.g. for sedentary beekeeping, there are small groups at Kebabi level that could be supported in honey extraction, filtration and stocking barrels; and for the bigger POs that could centralized the smaller at Sub-zoba level could bulk, add value do the quality controls and sell at bigger scale. For migrant beekeeping, there is already an important association that bulks and sells the production, however they are lacking of certain organizational skills and need to advance more on value addition.

Youth employment

126. The Agribusiness Coaches will also facilitate the creation of youth agribusinesses. For this, they will work very closely with the Extension Workers (supporting the project elsewhere under this Component) to identify potential business cases. This could be a youth or women's' group who wish to start a small business. Careful targets should be set for this activity, with emphasis being on the quality and potential of the supported groups, not on the number.

127. The type of support provided by the Agribusiness Coaches would be similar to that to the established POs, except that they will have to work closely with Extension and Community works, in terms of group dynamics, governance and other membership related issues. Support should also be provided to formally register as a PO, for groups to get trading licenses or get a business license as an SME. Awareness creation amongst the communities will be an integral part of this work.

Textbox 4: Possible model for development of agricultural services enterprise

Agriculture in Eritrea is labour intensive, particularly during land preparation, weeding and on harvest and post-harvest activities. Traditional harvest and post-harvest practices are highly time consuming (up to 15 days per household), and generate high losses and product contamination. This is particularly important with seed multiplication, where quality is strictly required and there is now about 80% rejection rate. Small harvesters- threshers, land preparation tools and machinery (sub-soiler, harrows, etc.) can provide a solution in terms of reducing burden time and losses and increase quality. As these machineries can be expensive for smallholders to own for themselves and there might not be enough labour force in a household (for land preparation in some WHHs), encouraging youth to become agricultural service providers would be a viable alternative. The Project will support 25 groups of 5 young entrepreneurs, concentrated mainly on the seed multiplication cluster zones that the Project will develop. The steps of the activity will be:

a. Identification of interested youth groups by the AED. The main selection criteria will be an expressed willingness in starting an income generating activity and that they come from rural areas. Existing youth groups will be prioritized.

b. Training of business plan and management, mechanization use. The mechanization use will be done by AED, and will be a practical training. If these machines are even new for the agriculture experts, practical test will be done by them and together with the groups. They will start with a set of machines available for the AED, and planning of procurement of machines for the groups will be done after business plan preparation. Business plan and enterprise capacity building will be developed by the same service provider of this subcomponent.

c. Basic, simple machinery will be procured by the project and handed out to the groups. If the groups need more concrete investment, the can express their interest to be selected for investments, as described below. MoA will be responsible for procurement of the machinery and delivery to the groups.

128. Several non-traditional business opportunities exist which may serve the dual purpose of creating youth employment and overcoming labour shortages at farm level, as well as strengthen the agricultural sector in general. Extension Workers can actively look for youths to come together to form Service Delivery groups around a seed multiplier supported by the project, or near the MIHAP households supported. The project will actively support youths (or other groups like women, demobilized soldiers, people with disabilities etc.) to gain employment such as:

a. Service provision[10] such as land preparation, harvesting, threshing, organic fertilizer, etc.;

b. Setting up local tools manufacturing workshops;

c. Other types of businesses, such as marketing partnerships with POs for commodity sourcing (contract farming, aggregation, storage etc.), when the POs do not cover the downstream supply chains; value addition, for example SME-operated processing centres; or other innovate service delivery activities for example involving solar energy.

129. The first two bullet points above will be actively targeted by the project in the first phase (first three year planning cycle, prior to MTR), while other types of activities will be planned for following the MTR.

130. As this is a very new (and innovative) approach, the approach is not too descriptive, but Extension workers and others will be free to experiment and to get familiar with the approach. What will be critical is monitoring, follow-up and experience sharing (including

[10] Also known as "labour gangs."

across Zobas). A needs assessment for youth skills development could be carried out to further shape this subcomponent.

131. For the two start up activities, Textbox 4 provides and overview of how youth groups might become involved in agricultural service delivery, with limited hard investment or inputs, but rather with targeted business plan development support. The paragraphs below describe how tools workshops can be established.

132. **Tools workshops for youth.** As a pilot activity, the project will actively seek to set up tools businesses as an SME. To increase access to improved tools at farm level for land preparation, harvesting, threshing, hay, organic fertilizer, etc., MoA will enter into a partnership with the responsible Zoba level branches and especially the two main State agricultural tools manufacturers' workshops in Debub and Gash-Barka to support the development of 12 youth workshops (as a minimum) for agricultural tools manufacturing. The Project will support the two workshops to develop annual work plans and budgets including: (i) a tools manufacturing manual (curriculum and method for incorporating innovations from NARI and from farmers); (ii) business model in terms of establishing a tools manufacturing enterprise; the steps required for registration; price setting and awareness raising, etc.

133. Then, the Branch for Trade and Industry, in partnership with Agribusiness Coaches, will identify interested youths and train them through vocational training programmes and in partnership with NARI; provide business support services, such as organizing groups, registering them formally, identifying sites (in villages or around larger trading centres) for the workshops. Theses workshops and youth manufacturers will be linked with AED and NARI for the development and trials of TLST such as manual and draught animal power (DAP) no-till planters, manual weeders, chisel point ripper, etc.

134. Ministry of Trade (MoT), with the workshops, will develop annual work plans and budgets to reach (as a minimum) the number of youths targeted. The steps of the activities will be:

a. **Manual development:** AED, with support from the agribusiness Coaches and in partnership with NARI and possibly with technical support from MoT, will develop a concept for tools manufacturers, including curriculum and method for incorporating innovations from NARI and from farmers; business model in terms of establishing a tools manufacturing enterprise; the number of members and the various requirements; the steps required for registration; price setting and awareness raising, etc.

b. **Training of youths.** The Zoba, in partnership with extension workers and local schools/colleges will identify interested youths and train them through vocational training programmes and in partnership with NARI;

c. **Provision of business support services**, such as organizing groups, registering them formally, identifying sites (in villages or around larger trading centres) for the workshops; identify what business elements can be done by the group themselves (e.g. and develop concrete business proposals.

d. **Installation of workshops.** The Zoba level DG T&I will procure and install small workshops, including procurement and installation of small machinery, simple tools and electrical installations. Eligible investments will be:

   i. Generator

   ii. Drill press

   iii. Smoother/ polisher

   iv. Welder

   v. Angle grinders

vi. Chop saw wood
vii. Bench vice
viii. Workbenches
ix. Air compressor
x. Solar panels
xi. Minor construction works such as buildings, slabs and roofing's
xii. Other small tools
xiii. Initial stock of raw material (wood, metal)

135. MoT will assume responsibility for activities related to tools manufacturing, including the below bullet points, to be elaborated through an MoU:

a. Training of youths at workshops (Debub/Gash-Barka)
b. Liaising directly with NARI to ensure incorporation of research into tools design
c. Supporting selected youths to form groups and setting up small enterprises, including registration as associations or similar
d. Liaison with Zoba office to provide inputs (small workshops); and
e. Continuous mentoring of the groups to assist them develop their business model and possibly facilitate access to credit (SMPC or other)

Building agribusiness linkages

136. The project will establish a financial envelope to support aggregation and processing centres, in three rounds of investments. The rounds, rather than gradual investments one-by-one will allow of bulk procurement and implementation efficiency. The first investments will be implemented in year 3 of the project, following implementation of initial Agribusiness Coaching activities, and the successfulness of the approach will then be evaluated at MTR. Two more rounds of investments can then be made following MTR. About USD 975,000 has been made available in the budget for each round of investments, calculating 23 storage facilities at USD 15,000; 10 processing equipment sets at USD 60,000 and USD 10,000 of working capital to be made available to each recipient. These figures are based on an assumption that there are 83 existing POs supported with BDS, and about 40% of these (33) would be supported with a hard investment in the first round.

137. **Selection of POs.** The NPCO would select POs to support for with hard investments through a selection process. POs would express their interest through submitting a business plan to the NPCO, outlining the investments they would like to make, the rationale behind them (for example market analysis and enterprise viability), as well as document their own capacity to implement and manage the investment. The strengthening activities carried out initially will support the POs to be able to put together such a plan.

138. Both those already engaged with the Project and others are eligible to apply, including POs, SMEs, youth groups etc. Selection criteria would include: (i) sourcing of agriculture products in the Project targeted areas; (ii) provision of agricultural and marketing services in the Project area; (iii) have successfully completed agribusiness training including the preparation of a realistic and profitable business plan; (iv) run by an operation manager who will have successfully completed a management internship or another strong background/performance record; (v) achievement of KPIs; (vi) economic viability of the enterprise (as per EFA analysis); and (vii) proven surplus of production.

139. The project will support the selected POs in: (i) setting up management and bookkeeping systems; (ii) training on post-harvest, processing, food quality and safety; (iii) setting up or enhancing supply lines and agribusiness linkages; (iv) acquisition of

processing equipment for cooling, processing, drying, packaging, solar energy, etc.; (v) setting- up aggregation and processing facilities.

Processing and aggregation centres

140. For the hard investments, the PO must be able to show at least 10% co-financing for smaller investments and 30% for larger investments. Specific guidelines should be developed by the NPCO. The co-financing can be in-kind and be based on an assessment of existing asset base, for example a building. This in-kind contribution is meant to improve ownership but also ensure that only actually operational enterprises are actually supported.

141. The following types of investments will be eligible:

a. Provision of input kits (collection of small hand tools etc.);

b. Setting up aggregation and processing facilities (building refurbishment, electricity connection, cold storage etc.);

c. Processing equipment for milk cooling and cheese and yoghurt production;

d. The import and/or provision of post-harvest handling equipment such as cold boxes, containers, etc.;

e. Storage facilities;

f. Oil, vegetable, and fruit processing;

g. Solar energy and drying systems;

h. Packing; and

i. Up to USD 10,000 working capital (max 30% of the overall project cost)

142. **Implementation.** Government procedures will be followed. The Project will finance the whole business plan, which may include a mix of the above investment items. Machinery and equipment will be bought through bulk competitive procurements and contractors will be recruited to do the installation. The procurement will follow IFAD's Procurement Handbook and Standard Procurement Documents in lieu of the national system. Working capital will be provided through the MoA revolving fund mechanisms already established. The asset/equipment will subsequently be handed over to the respective POs. The POs must receive clear training on operations and maintenance of the machinery prior to hand-over.

143. Two TA consultants would be recruited to support the process:

a. An international engineer to support site identification, design and development of the aggregation/ processing centres. This will ensure that the facilities are of the right size compared to the produce quantities, the physical location etc. The Engineer will visit the site and design, develop BoQs, etc., for the structures, equipment, power supply and installations. The consultant engineer will supervise the process, and the Zoba will sign off on completion. The Engineer would also provide training to the PO on operation and maintenance of the equipment, prior to hand-over;

b. A national consultant to support membership mobilization and awareness raising activities, for example

144. Once the aggregation and processing operations start, the Agribusiness Coach will conduct regular monitoring and support monthly visits, supported by the National Trainer, as required.

145. **Access to finance.** On a pilot basis, the project will seek to link well-performing POs to other sources of credit, for example commercial banks or micro finance institutions; the EU-IFAD planned intervention in microfinance will come in handy for this particular purpose. The access to appropriate finance can be for acquiring assets, working capital,

increasing production or any other need that may arise. The project may have to engage directly with the financial institutions to support them to develop appropriate products which are suitable for the types of investments (in terms of loan size, repayment terms, collateral etc.). Short term consultancies could be recruited for this.

Flowchart

146. The Figure below presents an overview of the activities planned under subcomponent 2.3. Given the pilot approach, activities are only presented for the first three Project years, until MTR, after which the subsequent three years can be planned out.

Figure 7: Flowchart of Subcomponent 2.3

Activity	PY1		PY2		PY3		Responsible
Agribusiness Coaching							
Recruitment of international TA							NPCO
Intro mission to country							TA
Develop zero draft manuals							TA
Identify National Trainers							NPCO
Train National Trainers as ToT and on agribusiness concepts							TA
Develop curriculum for Agribusiness Coach training							National Trainers
Identification of Agribusiness Coaches							NPCO
Training of Agribusiness Coaches							National Trainers
International Exchange visits for National Trainers and Agribusiness Coaches							TA
Working group meetings on agribusiness model development							AED
Finalization of manuals							TA
Support to POs							
Identification of POs							Sub-zobas
Develop detailed workplan for support to each PO							Agribusiness Coaches
Delivery of business development services to POs							Agribusiness Coaches
International exchange visits for POs							NPCO
Youth employment							
Creation and identification of youth groups							Sub-zobas
Training and development of business plans for groups							Agribusiness Coaches
Setting up tools workshops							Zoba
Aggregation and processing centres							
Expression of interest of POs							Sub-zobas
Selection process of POs							NPCO
Technical support to POs							Agribusiness Coaches
Site selection and design							NPCO
Membership mobilization and sensitization							NPCO - TA
Procurement, construction and installation							NPCO - TA
Training of committees on operations and maintenance							Agribusiness Coaches, Sub-zobas
Handover of facilities							NPCO
Assessment of how to go about additional access to finance required by POs							NPCO

II.5: COMPONENT 3: PROJECT SUPPORT SERVICES

147. The Component will be directly managed by the Project Manager, with support from the full NCPO team.

II.5.1: Subcomponent 3.1: Institutional Capacity Building and Policy Support

148. The Subcomponent will provide institutional capacity to the IAs of IADP,including strengthening the various departments and their management functions in line with their mandates . Each of the specific areas of support are listed below; this may be modified over time as priorities or capacities change.

Strengthening MoA departments

149. Each partner listed below will develop their overall capacity building plan (to be integrated in the three year plan developed at start-up, and implemented through the AWPB process), supported by the Capacity Building Officer of the NPCO, and in coordination with the technical experts. Implementation of activities will follow standard Government procedures, with each department preparing requests for activities through the AWPB submission, which is consolidated at NPCO, and the departments are given the go-ahead to implement.

150. **AED** will be strengthened in several of its core functions:

a. Supervision of agricultural advisory activities: Training Zoba and Sub-zoba level agricultural staff on FFS/AFS approaches (done by Master Trainers), setting up experimental fields in a selected locations (by the Agricultural Experts), and procurement of bicycles for Sub-zoba extension workers;

b. Seed multiplication, in relation to capacity building of seed specialists and extension workers through undergoing specialized training at the Agricultural College, and to undertake exchange visits to international institutes. FAO is a potential partner to support the engagement with international organizations (see also Annex 3. Draft TORs for Technical Assistance and Strategic Partnerships);

c. Breed improvement support, including procurement of semen, artificial insemination tools and ear tags; and financial support to the Poultry Production and Multiplication Centre for mixed-breed and development of indigenous breeds. The targets for these activities should be set in line with the targets of inputs being distributed under Comp A.

151. **NARI** will be strengthened in several of its core functions:

a. Seed multiplication, specially development of seed protocols (to be done internally, with technical assistance and / or national and international peer review as required), capacity building of relevant staff, and provision of funds of increasing the quantity of foundation seed produced;

b. Research on CSA and organic farming, through financing the work of the researchers and providing them with operational budgets for action-oriented research;

152. **RSD** will be supported to increase the frequency of their inspection visits to seed multiplying farmers.

153. **NAPHL** will receive financial support to continue the efforts to produce vaccines nationally; to procure drugs and vaccines for Sub-zoba level animal health clinics, and to train both NAPHL and animal health clinic staff, in particular to be able to train and support para-vets and on implementation of vaccination calendars. NAPHL, with support from the Project, should undertake a needs assessment of the decentralized animal health clinics and develop a detailed capacity building programme. The Project will support the procurement and distribution of vaccines to the decentralized clinics and will financially

support any activity which is deemed to ensure that at nationally produced vaccines are in use by MTR.

154. **NSU** will be financed to procure increased quantities of seed.

155. **PSD, AFD, and OHR** may receive support as required.

156. **Implementation.** The activities will be implemented through a budget support modality, where each of the departments will develop an AWPB, to be consolidated into the Project AWPB. No specific mechanisms will be developed for this Subcomponent, but rather Government systems will be followed. When deemed necessary, the NPCO will support the Departments in the recruitment of short or long term consultants / technical assistance (see Subcomponent 3.2). The NPCO will support each Department in ensuring that the activities are strategic, in line with the Departmental mandates and the priorities are handled in a sequenced manner.

Strengthening Project implementation structures

157. A Capacity Needs Assessment of all the Project implementation structures will be undertaken to identify the training and capacity building needs. The activity will be commissioned based on ToRs that will be developed by the NPCO and shared with IFAD for the provision of a No Objection. The structures include: NPCO and ZPCO staff as well as Governance Structures. Several different training modalities will be used including: specially organized sessions with IFAD or MoA trainers; short term training courses at training institutions or universities; short term TA (Subcomponent 3.2) providing mentoring or on-the-job training, etc. The Capacity Needs Assessment will be translated into a Capacity Building Plan, which will be implemented through the AWPB.

Metrological capacity

158. As it stands now, there is no institution responsible for meteorology in Eritrea. To this end, the Government is currently working to establish the national meteorological agency. Since MoLWE, which is leading this process, and the MoA are the ones closely related to this activity, they will be the focal entities with whom the Project will work in the meantime. They will draw up specifications and designs for first class metrological equipment, as well as oversee the work of the service provider. MoLWE will be responsible for the design, developing bills of quantities (BoQs), etc.

Figure 8: Targets for metrological activities

Activity	Unit	Qty.	Notes
Metrological support			
Install 1st class meteorological instrument	Unit	6	Benefits national and Zoba level water resources, irrigation and agriculture offices
Install bubbler operated hydrological instrument	Unit	3	
Staff data management and communication capacity built	Staff	8	

159. Once watershed sites have been selected, the project will procure and install instruments (incl. construction of associated buildings and offices) to measure, analyze, communicate and archive hydro-meteorological information shall take place in the selected watersheds of the selected Sub-zobas. Budget has been provided for one set of metrological equipment per Zoba (six in total) and three sets of bubbler operated equipment, suitable for major drainage systems. A technical assessment exercise will have to be carried out to determine the best suited locations, and the procurement should be in bulk (all at once), for efficiency. International bidding is likely to be required.

160. As installation is on-going, the NPCO will recruit a consultant (international if the expertise is not available locally), to train staff on usage of the equipment, including management of the systems as well as timely data/info collection, analysis, archiving and

communication/dissemination. Eight MoLWE staff will be trained (2 from national level and 6 from the Zobas).

The MoLWE technical staff, supported by the Environmental Officer, seconded from MoLWE to the NPCO, will support the development of an MoU with IGAD's Climate Prediction and Application Centre (Nairobi). Although Eritrea is a member of both the World Meteorological Organization (WMO) and IGAD, it will be more practical to develop a partnership through a MoU to be signed for the specialized assistances with the MoLWE playing the lead role. Developing the MoU might take time and involve visits between the two agencies, as well as Management and Technical officers meetings, respectively.

Land-use planning support (GIS and remote sensing)

161. Site selection and the matching of site and beneficiary characteristics to best options in terms of Project interventions will be supported in part by building on a nascent capacity within the MoA to undertake surveying, mapping and geographical information system (GIS)/remote sensing based planning. The required technical assistance will be mobilized through a capacity-building focused institutional contract with a highly qualified specialized regional or international non-profit entity to ideally be pre-identified.

162. In addition, remote sensing data analysis for monitoring of the prioritized watersheds will be introduced, and the capacity of MoA and MoLWE to both analyze, use and interpret this data will be build.

163. To prepare for the activities, the Project will access earth imagery and purchase basic computing equipment including large monitors for on-screen digitization, ruggedized tablets for field use, color printers / supplies. This will happen in year 1+2. The concept is further described in Annex 3. Draft TORs for Technical Assistance and Strategic Partnerships: Land use planning support .

164. The Project will procure the services of a non-profit specialized institution, through a restricted international bidding process, i.e. with a Request for Proposal being detailed and issued only after an Expression of Interest helps us better define the options, technical choices and costs as well as narrow down to the most viable service providers. An institutional contract could be developed, and give better value for money as a long term partnership.

165. The TORs would be developed through a one week technical mission to country, organized by IFAD. The activities will focus on in-country training for MoA at national and Zoba level. The selected institution will develop a training programme, focusing on GIS, to which can be added analysis of remote sensing data and combination of data-types, the multi-criteria decision-making for site selection. The first target audience of the exercise will be MoA staff who have experience on GIS, subsequently a broader group of MoA and Zoba staff.

Environmental education

166. The project targets supporting 250 schools with environmental education and demonstrations. The NPCO, with input from AED and MoLWE, will develop a draft MoU to be signed between the project and participating schools; prepare typical/revised school club formation byelaws; develop curriculum for environmental school clubs; develop standard designs for rainwater harvesting structures; and procure simple hand tools and seeds to be distributed to schools (NB! This activity will likely be coordinated with the NSU and input requirements to be fed into the national seed plan; see Part III: Project Procedures). After this they will organize a training of Zoba SWC experts on how to roll-out the support.

167. The AED will call upon Ministry of Education to i) develop selection criteria for schools and 2) agree on a selection of schools. Once the schools are identified, Zoba SWC experts will develop detailed action plans on how to carry out the activities, including:

a. Signing of MoUs between the participating schools and the ZPCO;

b. Establish and strengthen environmental clubs, following the given curriculum;

c. Distribute inputs to the schools for construction of energy saving stoves (following regular Government procedure for this activity); and

d. Construction of roof catchment rainwater harvesting based on the NPCO standard design, and through the contracting of local artisans (masons).

II.5.2: Subcomponent 3.2: Project management

168. The objective will be to ensure achievement of activities in a timely manner, which can be measured through disbursement levels and the overall M&E Framework. The project will be implemented in accordance with Government procedures and guidelines, including related to salary and per diem allowances, policies regarding leave, use of vehicles, etc. Institutional arrangements, knowledge management and monitoring and evaluation are described elsewhere in this manual.

169. A number of different modalities will be used to implement the project:

a. Supervision visits will be carried out continuously and planned through the AWPB process are implemented following Government systems and covering expenditures such as staff DSA, vehicle hire, fuel and stationaries;

b. Studies undertaken by procured consultants include: baseline, socio-economic assessment, PCR, impact assessments;

c. Studies undertaken by Government internal structures include annual outcome surveys (M&E) and KAP surveys (nutrition). Agricultural Experts or Village Administration staff will be trained by the NPCO as enumerators; the costs are thus mainly related to DSA, fuel and stationaries;

d. Knowledge management activities (preparation of brochures, organizing events, public awareness etc.) will be implemented using regular Government modalities;

e. Training activities fall in four categories as below. The NPCO Capacity Building officer and Project Manager should spearhead the development of an NPCO/ZPCO Capacity building plan, including if required, staff from MoA departments (draft template in Annex 6. Draft Capacity Building Plan). The plan should cover the whole duration of the project, and its implementation be through AWPBs. A needs assessment will have to be done initially.

   i. Internal trainings, e.g. workshops on AWPB development, teambuilding, review workshops etc. will be undertaken using Government systems, with internal trainers, where the main costs relate to participants' travel and stationaries;

   ii. External trainings for (i) NPCO and ZPCO staff related to project management and (ii) trainings on Public Relations will be defined in a NPCO capacity building plan at start-up, and further detailed out in each AWPB. Depending on the nature of the trainings required (also based on the actual experience of the relevant staff), the NPCO may choose to recruit trainers (consultants); enroll staff into training programmes; or develop MoUs with training institutions such as Universities or vocational training centres; or any combination of the above. The trainings are expected to be national, and may last 3 months or more;

   iii. IFAD organized trainings including on FM, procurement, M&E etc., as well as the annual Regional Stakeholder Workshops; the NPCO staff will be invited to these directly by IFAD over time, and the project will in most cases be expected to cover staff participation costs;

iv. Short courses and exposure visits abroad, e.g. To enhance the inspection capacity of inspectors to properly discharge their duties; To enhance administrative, planning and office management of RSD and Regional Inspectorate;

f. Software systems and related installation and modifications (e.g. M&E system, financial management software etc.) are procured along with the consultancy services to install them.

170. Project staff are seconded from MoA/MoLWE to sit in the NPCO full time, but continue to be financed by Government according to the relevant salary scales. Operating costs for the NPCO (refreshments, car rental, vehicle operating costs, telephone and internet costs, as well as office running costs including computers and stationaries) are financed under the project.

Figure 9: Flowchart of Subcomponent 3.3

Activity	PY1	PY2	PY3	PY4	PY5	PY6	Responsible
Appointment of project staff							HRD
Procurement of office equipment							ADM
Supervision visits							NPCO
Baseline/end-line study							NPCO- M&E Senior Officer
Socio-economic assessments							NPCO – Social Inclusion Officer
Outcome survey							NPCO – M&E Senior Officer
Mid-term Review							NPCO – Project Manager
Project Completion Report							NPCO - Project Manager
Impact Assessment							NPCO – M&E Senior Officer
Installation of M&E system							NPCO – M&E Senior Officer
Installation of FM systems							NPCO – Financial Controller
Project Implementation Capacity Building							
Internal trainings							NPCO – Capacity Building Officer
NPCO staff capacity building							NPCO – Capacity Building Officer
Public relations trainings							NPCO – KM Officer
Communications activities							NPCO – KM Officer
Short courses and exposure visits abroad							NPCO – Capacity Building Officer
IFAD-organized trainings							IFAD

II.6: MTR

171. The project will undertake a rigorous Mid Term Assessment (MTR) to ensure efficient project spending, leading towards the intended outcomes. It should be agreed between the Project Manager and IFAD, early in PY3 which modality will be used to conduct the MTR, e.g. an internal exercise conducted by MoA and validated through an IFAD Supervision Mission, or recruitment of consultants, either by MoA or IFAD. Some of the critical elements to be assessed during MRT are:

a. Assess FFS approach – how is the uptake, are facilitators and farmers enjoying it, any visible results;

b. Approach to private sector engagement;

c. Impact and relevance of capacity building activities;

d. Efficiency and effectiveness of Subcomponent 2.3 interventions at individual level, and the approach as a whole;

e. Adequacy of implementation arrangements, including allocation of human resource towards the project, and efficiency of planning processes;

f. Performance of the M&E system, including baseline studies and others conducted in a timely manner; and

g. Performance in procurement and financial management, including assessing the effectiveness of the TA.

172. The output of the MTR will be a revised PDR, or a long Aide Memoire, depending on the extent of changes to be made. This will include a revised budget to guide utilization of the remaining funds; revised recommendations for the use of TA; and an updated PIM. The exercise should be followed up by development of a second 3 year plan for project implementation.

II.7: PROJECT CLOSURE

173. Project closure must be planned for early and well in advance of IFAD loan closing dates, to ensure that various assets are handed over, and that all studies, including PCR, are completed on time. Major infrastructure and equipment is expected to be handed over to the communities, with a management plan or following comprehensive operational and management trainings. A detailed project closure plan will be developed at MTR or subsequently.

PART III: PROJECT PROCEDURES

III.1: PLANNING AND AWPB DEVELOPMENT

174. To ensure a clear chain of results (activity-output-outcome), a secure financial resource commitment (MoA budgeting process and IFAD procedures) and to anticipate procurement and implementation capacity, the Project will adopt multi-year planning (3 years), in particular for watershed and irrigation related activities. This document is the basis on which the AWPBs will be developed. The AWPB will be the key instrument for implementation and operational control.

175. **Activities prior to effectiveness.** The Project will build on the NAP, including the implementation structures. Critical start-up activities (see full list above) may be financed under NAP, which formally closes in June 2020. This includes: (i) re-appointment of all staff in accordance with updated TORs; (ii) purchase of a financial management system and other related software; (iii) preparation of the first AWPB including initiation of major procurement, as a minimum finalization of bidding documents; (iv) finalization of MoUs with intra-Government and other strategic partners; and (v) recruitment of TA to be ready at project start-up

176. **Principles.** The document which guides implementation and identifies activities required to each the Project objectives is the AWPB. The AWPB follows the calendar year, as per planning systems in Eritrea. The AWPB development process is expected to start in August of the previous year, and be submitted to IFAD at least 2 months before the year starts (by 1 November). The Sub-zoba is the centre for the planning exercise by engaging with beneficiaries; this is consolidated by Zoba, then submitted to NPCO level.

177. In particularly in the Eritrean context, the NPCO must careful plan how to secure budget (foreign exchange and funds availability) for implementation. The authority to incur expenditure on the project emanates from an approved AWPB and as such, the detailed cost tables prepared during design indicate the costs to be incurred over the six years of the project, but may be altered. Table 13 indicates the critical importance of the AWPB not only as a planning tool, but also as a financial control tool, and as such the basis of financial management of the Project.

Table 13: The critical importance of the AWPB in financial control

During day-to-day financial management, an approved AWPB is the most important document, and the principal guide on what to do and how to use resources. The AWPB is more than a guideline. It represents:

a) a commitment of NPCO and its implementing agencies to carry out a set of activities, produce specific outputs and achieve certain targets; and

b) Agreement between government and IFAD that the planned activities are appropriate in light of the Project objectives and approval to spend the necessary money as specified in the annual budget.

c) GoSE and IFAD will have provided **"prior approval"** to implementers to spend resources on the activities included in the AWPB. It should be taken so important; ***any expenditure incurred outside the AWPB will be declared ineligible for IFAD financing.***

d) The AWBP is also a performance measure, therefore, the AWPB should set challenging targets but not ***unrealistic*** ones. All targets should especially consider the RUFIP III's performance will be assessed, among other ratings, by the extent of AWPB execution.

178. **Top-down planning processes.** To enhance the efficiency of planning and preparation of the Zoba AWPB, the NPCO will provide the ZPCOs with clear guidance regarding multi-annual output targets and budgetary planning, based on the three-year plans developed at start-up and the performance of the previous year. This provides guidance to the implementing entities and agencies on the project priorities and objectives for the coming year and includes: project and Zoba-level targets for each critical set of activities; status of implementation of activities of the previous year, ensuring that

uncompleted activities are given priority and finalized; and any changes made to the PIM (to be done at least on a six month basis by the NPCO planning officer) or other operating procedures or guidelines of the project. More guidance can be found in IFAD's Guidelines for Preparation of Annual Work Plans and Budgets and Progress Reports,[11] and in Annex 7. AWPB outline. The timelines are presented in Table 14.

179. The AWPB will contain detailed tables for each of the IAs, primarily each of the MoA Departments, the NPCO and ZPCOs, as well as the six Zoba administrations and outside ministries. It should be noted that the exact actors involved in a given year might change, depending on the activities undertaken. A draft outline of the AWPB is included in Annex 7. AWPB outline and a standardized format should be shared and used by all parties.

180. The AWPB consists of inputs from IAs:

a. MoA internal departments of HDR, ADM, PSD, AED, NARI, NAHPL and RSD for activities to be carried out at central level, or through the Zoba research stations / regional offices, as well as the NPCO activities;

b. Per Zoba, covering activities to be carried out by the Zoba, Sub-zoba, village administration staff and the ZPCOs; and

c. Other ministries, mainly MoLWE;

181. The two Component Coordinators, supported by the technical experts of the teams, and in coordination with the IA Directors, will set the framework for the activities to be planned. The inputs of Subject Matter Specialists will be required. This process will ensure a more holistic and results-oriented planning process.

182. **Bottom-up planning processes.** The project promotes a participatory and community-driven approach in terms of targeting and activity selection, meaning that the Communities have an important role to play as an institutional layer of the Project. Communities must identify and prioritize their problems and define development actions to address them; the project will develop specific guidelines on this targeting process (see PART II: DETAILED IMPLEMENTATION MODALITIES: II.1: Start-up. In practice this starts in the Village Development Plans, general for the village across all its projects and activities, which is then consolidated into a Kebabi IADP Plan at the PIC. The PIC would receive technical support from the Sub-zoba line agencies and be responsible for implementing the guidelines and consolidating the list of priority activities, matching the pallet of project activities to the needs of the target groups in the area. The Project will provide financing for workshops and training as may be required and for capacity enhancement through training and payment of community development agents to be appointed by the council.

183. The Kebabi plans are consolidated at SPC, with technical support from the ZPCO to ensure that needs are prioritized and proposals aligned with the Project objectives and long-term work plans. This work plan covers all areas of work in the Sub-zoba, across the various units and braches. The main branches will be those for soil, water & irrigation; Animal Resource; and Crop Development, but any activities handled any other Branches are also to be included at this level (for example Agricultural Infrastructure Unit).

184. **Consolidation of the AWPB.** From each Sub-zoba, the consolidated plans are sent to the Zoba. First, they are reviewed by the various technical units of each Branch, and then submitted to the ZPCO. The ZPCO has the responsibility to ensure that the activities are in line with the Project objectives, that they are feasible and within the budgets and targets to be achieved per Zoba, and that they represent the priorities of the communities involved, in line with the targeting guidelines. This might include physical meetings both within the ZPCO and with the Zoba staff and omitting of activities not aligned to the Project objectives. Finally, the NPCO consolidates the plans from all Zobas and other IA's, into one overall AWPB. Any adjustments and changes are to be clearly

[11] https://pmetools.com/files/AWPB%20guidelines.pdf

communicated to the implementers, and all IAs are to be introduced to the activities of others, to ensure that there is an understanding of the *project* activities.

Table 14: AWPB preparation and approval schedule

Step	Activity	Time schedule	Responsibility
1	Evaluation workshop of the past year performance	Early April	NPCO
2	Briefing on AWPB development including guidelines, formats, specific targets to be achieved per partners, timelines and issuance of call letter	Last week of April	NPCO
3	Each IA initiates consultative process and establishes AWPB team	Mid May	Head of IA
4	AWPB development by IA, including lower levels	Mid May – Mid July	IAs
5	Submission of draft AWPB from IA to NPCO	25 July	IAs
6	Workshop to consolidate AWPBs	30 July	NPCO
7	NTC reviews and endorses AWPB	25 August	NTC
8	NCS approves AWPB	25 September	NSC
9	Submission of AWPB to IFAD for No Objection	25 October	NPCO
10	Comments and clearance by IFAD	25 November	IFAD
11	Preparation of final AWPB	1 December	NPCO
12	Dissemination of approved AWPB to IAs	7 December	NPCO

185. **Estimating input requirements.** A critical part of the AWBP process, will be to consolidate and estimate the input demand across the Project, to be provided as input to the NSU who are overall responsible for developed the national annual seed plan and ensuring that requirements are met through timely bulk procurements and deliveries. For each activity, across the components, it should be visualized which inputs are required, in which Zoba, and at what time, and provided to the NSA within the AED.

Table 15: Matrix of input requirements

Input required	Total quantity requirement	Project activity	Delivery date and quantity required per Zoba											
			Maekel		Debub		Gash Berka		Northern Red Sea		Southern Red Sea		Anseba	
Livestock Vaccine		A.2: Livestock services												
Foot and mouth disease	Number													
Seeds														
Sorghum	MT													
Sunflower														
Breeding stock														
Etc….														

III.2: MONITORING AND EVALUATION

186. **M&E system.** The project will develop a results-based M&E system to support decision-making and knowledge management, grounded in lessons learnt from ongoing IFAD projects in Eritrea. The system will be based on: (i) a clear results chain, based on the logical framework and economic and financial analyses; (ii) clear profiling (breaking down) of each target to act as an outcome prediction system based on output monitoring; (iii) fine-tuning of the qualitative and quantitative data collection (survey included), processing, digitalization, storage and information sharing; and (iv) quantified analysis of project results and approaches. The system should be based on automated Excel sheets (using formulas and cross-referencing), together with an electronic library for storing files, documents, progress reports, pictures etc. It should be based up regularly using off-line options should as USB drives, hard disks and rewritable DVDs.

187. **Log-frame.** The log-frame includes Core Indicators as proposed by IFAD; indicators which might be aggregated across projects for corporate reporting; therefore the Project should ensure to be able to report on them. As a start-up activity the logical framework should be reviewed, internalized by all parties, baseline and target figures be established if they are not there, and any final modifications may be made. For subsequent evaluation purposes, it is not recommended to further change the log-frame after this.

188. **Indicators.** In addition, as a start-up activity, the M&E team should review, further develop and possibly add indicators useful for project monitoring. This includes defining additional indicators useful for progress and results monitoring. All indicators should be profiled, ensuring that they are SMART, gender and age disaggregated, that clear data collection responsibilities have been assigned and that they are broken down per year, per Zoba. This will assist results-based planning. For outcome level indicators, the contribution of each of the outputs should be established, so that achievement/non-achievement can be predicted, based on the outputs achievement, during each period.

189. **Data collection.** The NPCO could consider introducing the below steps to improve data collection systems:

a. The administrative forms used to get ZPCO clearance to carry out activities could be updated to include M&E information;

b. Regular Government implementation structures can be used to carry out surveys, by training Agriculture Experts (extension workers on ground) and Contact Farmers to act as enumerators;

c. Develop simple monitoring tools and templates to track data over time;

d. Piloting of GIS tools for data collection;

190. **Progress reporting.** The main source of information for the NPCO will progress reports from Implementing Entity and Agency each month. Standardized formats should be developed and used consistently. The NPCO will validate the information and provide a consolidated progress report based not only on figures but on detailed, sophisticated analysis, linking the physical with the financial; estimating overall achievement of the objectives of the project and forecasting performance. The NPCO M&E team will produce consolidated six-monthly and annual progress reports, to be approved by the PSD, to be used in-house for planning, and for forwarding to IFAD, not later than 60 days after the end of the reporting period. This will, amongst others, feed into the ORMS and COSOP M&E reporting exercises. A standardized template, mirroring the AWPB should be developed.

191. **Baseline and impact evaluation.** The NPCO will, as a start-up activity, determine the impact evaluation methodology of the project; this methodology will for example determine the statistic tools to be used, the use of control groups, the questions to be assessed, the sampling framework (e.g. to be representative at Zoba level), the various different target groups to be represented etc. This methodology will form the base for the TOR to recruit a company for both the baseline survey, and later the end-line (impact) survey. It will be critical to ensure that the methodology is well-developed and that all data and analysis is well documented and stored well both on and off line, to enable analysis.

192. **Annual outcome survey.** To supplement the outcome forecasting, and to monitor likely achievement of outcomes prior to the end line survey, annual outcome surveys will be undertaken. These should be quick surveys, asking only a handful of questions, and be easy to administer. The surveys should be carried out by agriculture officers on ground and be consolidated by M&E officers at the ZPCOs and NPCO. It is recommended that a group be selected at random (e.g. 20 individuals from each Sub-zoba supported) and then followed up upon every year, similar to a longitudinal panel method. The questions are likely to be more qualitative in nature and, when analyzed together with the quantitative

output monitoring, will give a good indication of the trend towards achievement of the project results.

III.3: KNOWLEDGE MANAGEMENT, LEARNING AND COMMUNICATION

193. Knowledge management and learning (KM&L) and communication will consist of:

a. Knowledge gap identification and prioritization of knowledge products to be developed to increase uptake of effective approaches for agricultural development (see Table 16);

b. Regular internal experience-sharing and reflection workshops, reviewing the draft consolidated progress reports, as well as focus group interviews annually;

c. Case studies to ease the upscaling of best practices in Eritrea or repackaging of innovative approaches developed elsewhere;

d. Documenting lessons learned for innovations and creativity;

e. Dissemination of knowhow based on available communication tools (including video documentaries);

f. South-South Triangular Cooperation (SSTC) in terms of exchange visits for innovations discovering

g. Refreshment and upgrading training to and with Projects and training centres in other countries.

194. The eLibrary (as discussed above) will be the basis for KM&L, to be accessible online (intranet or internet) to the extent possible. A detailed workplan should be developed.

Table 16: Knowledge Management Theory of Change[12]

IMPACT	**Improved quality of Projects and stronger knowledge base lead to expanded impact**
	• Knowledge is assembled and transformed, including through partnerships, better development results for poor rural people and greater impact towards the 2030 SDGs
OUTCOMES	**Greater synergies in knowledge-intensive work create a learning culture that has a positive impact on Project's development outcomes**
	• Higher quality Project and country programme results • Scaled up development results • Enhanced use of evidence-based and experiential knowledge • Greater visibility • Stronger learning culture
OUTPUTS	**Adequate resources are available; knowledge flows are maintained**
	• Interventions designed using best available knowledge • Approaches and tools maximize learning and knowledge flows • Evidence, best practices and lessons are documented, searchable and available • Knowledge products developed and learning events organized • Integrated systems for capturing, storing and sharing knowledge • External knowledge leveraged through partnership and SSTC • Incentive structure for learning, sharing and innovative behavior in place • Capacities of staff and implementation partners and beneficiaries improved
ACTIVITIES	• Knowledge generation • Knowledge use • Enabling environment

195. **Communications.** Substantive training budget has been made available to support trainings on media-related activities, which may be utilized to help the project

[12] IFAD KM Strategy/May2019/p.4/*EB*2019/126/*R.2/Rev.1*

gain visibility and interest from stakeholders, and to support the knowledge dissemination work.

196. **Knowledge topics.** The following issues have been identified as critical areas for the knowledge management initiatives to create knowledge and disseminate within the Project context and beyond:

a. South-South Triangular Cooperation. The SSTC would facilitate the formulation of strategy & regulatory framework for rural financial services and SMEs. Exchange visits will also be actively used by the Project.

b. Sector Coordination. The NPCO will support MoA to conduct regular sector coordination meetings, e.g. quarterly meetings between MoA PSD and relevant development partners. This will be critical since an increasing number of partners have expressed willingness to support the agricultural sector in Eritrea. Sector coordination will support MoA to ensure a coordinated response, both in terms of geographical areas and in ensuring that consistent approaches are being used.

c. Research and Extension support services: generation of knowledge from the field (e.g. through collection of stories from farmers) on approaches which work for IPM, increasing yields or other innovations, often in the way of applied research. Such stories will be collected on a regular basis and from different agro-ecological zones; areas with varied rainfall and from within different production systems. The information should be stored and organized and actively shared with research and extension services to feed into the knowledge and curriculum development activities. For example, a partnership with the agricultural college could be explored. It should be documented what CSA, IPM etc. practices work, where.

d. Indigenous crop production and food preparation (nutrition practices)

III.4: POLICY DIALOGUE

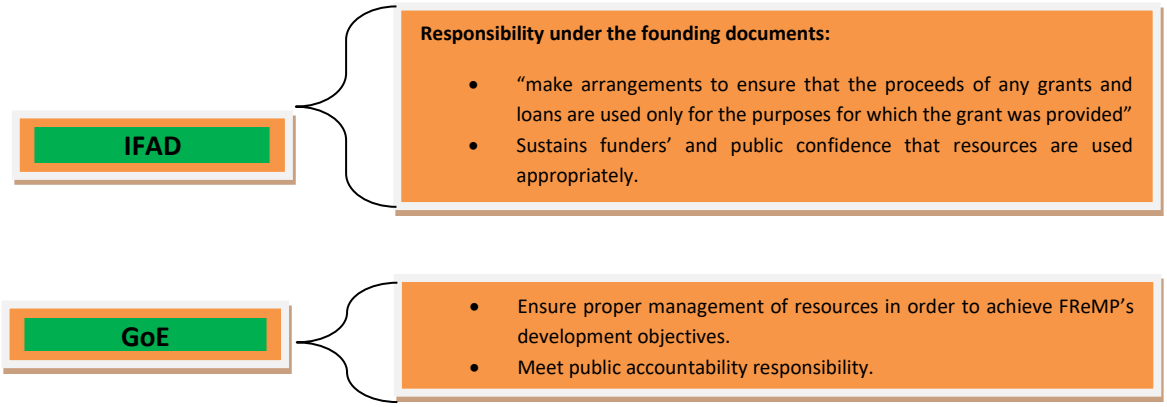
197. As the NPCO is directly embedded into the MoA structures, and headed by the Director PST, it will have a clear avenue for policy engagement. The NPCO will support this work with technical, evidence based analysis and possibly contract short term consultants to collect and disseminate best practice. The Director PST will be the main actor responsible for policy dialogue, based on project experiences.

III.5: FINANCIAL MANAGEMENT

(i) Introduction

198. **Fiduciary Responsibility** – The key players in the IADP financial management have fiduciary responsibility to ensure that IADP funds are used exclusively for intended purposes. Poor financial management in the implementation of IADP could result in failure to achieve its intended impacts. IFAD will undertake supervision missions that will include a review of all fiduciary aspects, will undertake review of audit reports, and may commission own audits/reviews. The GoE as well has systems and structures to ensure that public funds are used for intended purposes.

Fiduciary Responsibilities



199. IFAD will undertake thorough supervision missions that will include a review of all fiduciary aspects, will undertake in-depth review of audit reports, may commission own audits/reviews, etc. while the GoE has a number of systems and structures to achieve its mandate.

200. **Transparency, Governance, Anti-Corruption** – The IADP Governance and Anti-Corruption Framework to mitigate the risk of corruption and promote effective utilisation of resources includes the following:

- the provisions of this financial management manual articulating the type of internal controls and administrative systems to be established towards transparency and accountability;
- the programme will continue working with the Laccie accounting system that will substantially reduce the scope for human error, but because it was noticed that this accounting software have some drawbacks as long as IADP is concerned. The programme have a plan to procured an appropriate licenced not only financial but also Project Management, Monitoring & Evaluation and Procurement applied software.
- the risk-based implementation reviews of programme financial management and staff;
- the back-up procedures kept on the NPCO's computer server to avoid the loss or damage of financial data;
- IADP will also include a systems audit in the TORs of the auditors and in the supervision plan; and
- Internal audit will be provided by the MMR internal auditor.

201. IFAD zero tolerance policy for corruption and fraud urges persons observing concerns of irregular practices in IFAD-funded Projects to report to the IFAD Office of Audit and Oversight through any of the following means:

- By telephone: +39 0654592888
- By confidential fax: +39 0654597888
- By confidential email: anticorruption@ifad.org or by using the online complaint form
- In person or by mail to: IFAD - Office of Audit and Oversight (AUO): Investigation Section - Via Paolo Di Dono, 44 - 00142 Rome, Italy

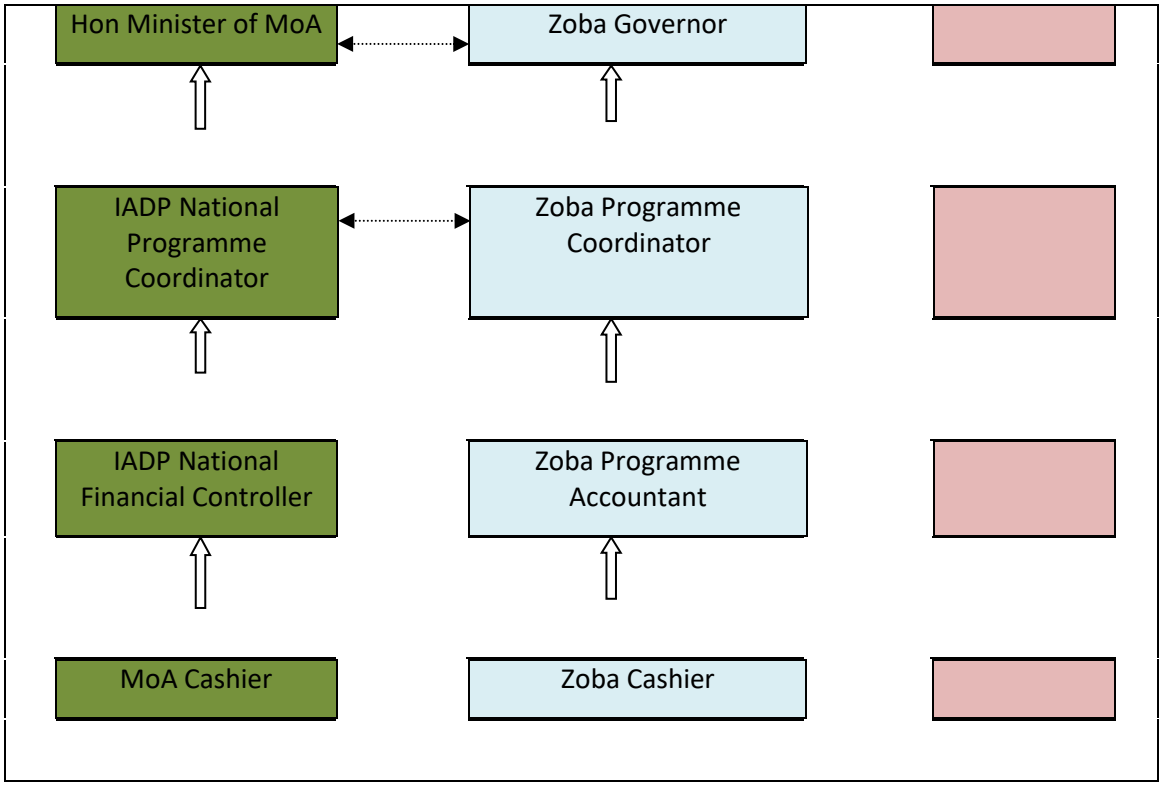
202. **Supervision of Fiduciary Aspects** – IADP IADP will be jointly supervised by GoE through MoA and IFAD. In the first two years, it is proposed that there should be at least two IFAD Missions supplemented by a third FM implementation support/follow-up Mission to ensure FM systems and tools are put in place and implemented. Timing of the Supervision Missions will be coordinated with the production of interim financial statements

in accordance with IFAD interim financial reporting guidelines. This will enable Supervision Missions to measure the progress at the specific cut-off dates.

203. Supervision Missions will have a variable composition, but fiduciary reviews will be a recurring element in each. The fiduciary specialist will be tasked with both the identification of problems as well as with finding or initiating solutions to problems encountered. The aim will be to resolve all accumulated issues in finance and procurement during or shortly after each supervision mission. Terms of reference for the supervision missions will be prepared by the IFAD Country Programme Manager.

204. **Users of the Manual** – Within the NPCO, the finance team will include the following: Programme Coordinator; Financial Controller, MMR Cashier, Zoba Programme Coordinator, Zoba Programme Accountant and Zoba cashier. The reporting structure below will assure the required segregation of duties. With this structure, no single officer is allowed to originate process, approve or sign off payments or to certify the receipt of any related goods and services all by him/ herself. Non-finance staff will be involved, in their capacities as users, providing technical inputs in expenditure justifications. The Procurement officer will play a special role in contractual certification of payments before these are passed on to the financial controller for payment processing.

Chart 1 NAP Financial Management Organisational Structure



205. IADP will pursue a team work approach as part of integrated programme management. Under the integrated programme management approach the segregation of duties for financial control will need to be maintained. The finance team will work closely with the non-finance staff to have a sound financial control system. This illustrates that even non-finance staff should internalise the contents of the financial management aspects of this manual because they also have a fiduciary responsibility to ensure IADP funds are used only for intended purposes.

206. With respect to organisation and staffing, IFAD Supervision Missions will be interested in:

- Adequacy of organizational structure to meet functional needs of the Programme. Therefore, the structure above should not be changed without IFAD concurrence;
- Availability of clear job description for key Programme positions, including fiduciary positions;
- Adequacy of Programme financial management staff (numbers and skill) matching functional needs of Programme;
- Availability and adequacy of operating manuals and guidelines for staff;
- Existence of a performance-based evaluation system in place and timely completion of performance evaluation for all staff;
- Adequacy of health insurance coverage for all staff;
- Timely payment of social security fees; and
- Staff adequately informed about IFAD's national and anti-corruption policy and relevant contact details.

207. The chart below demonstrates how the different staff, with a direct involvement in the Financial Management function will link together, with clear segregation of duties, to support IADP in its pursuit of its development objective.

Chart 2 Using the IADP Staffing Complement to Achieve Segregation of Duties

Hon. Minister MoA ➢ Overall Controller and Accountable for IADP funds ➢ Chair- Programme Steering Committee. ➢ As overall controller, the Minister enforces agreed financial management actions as agreed with Auditors, supervision missions and institutes action for non-compliance areas. ➢ Clears all Withdrawal Applications to IFAD. ➢ Clears all withdrawals from the designated/ account; ➢ Signatory to designated and operating account **National Programme Coordinator (NPCO)-** ➢ Overall Coordination including financial management matters and supervises the work of the Financial Controller ➢ Coordinates planning and budgeting processes ➢ Together with the Financial Controller (FC) approves all payment requisitions ➢ Ensures sound budget control ➢ Approves bank reconciliations **National Programme Financial Controller (NPFC)** • Responsible for overall financial Administration functions of the Programme • Raises vouchers, ensure they are well supported- making use of the checklist in this manual. • Keeps & maintains proper financial records (chronological filing system).	• Updates entries in the accounting system for MoA transactions • Prepares Bank reconciliations • In charge of Consolidation of the accounting software based returns / reviews the online postings of transactions into the accounting software • In charge of preparation of consolidated withdrawal applications to IFAD consolidating transactions of MoA • Treasury Management ensuring that the replenishment cycle is not clogged • Preparation of financial reports as required by all stakeholders • Prepares financial accounts and facilitates Audits • Ensure accurate costing for the AWPB etc.	

(ii) Flow of Funds, Cash, Bank Account Management and Disbursement Procedures

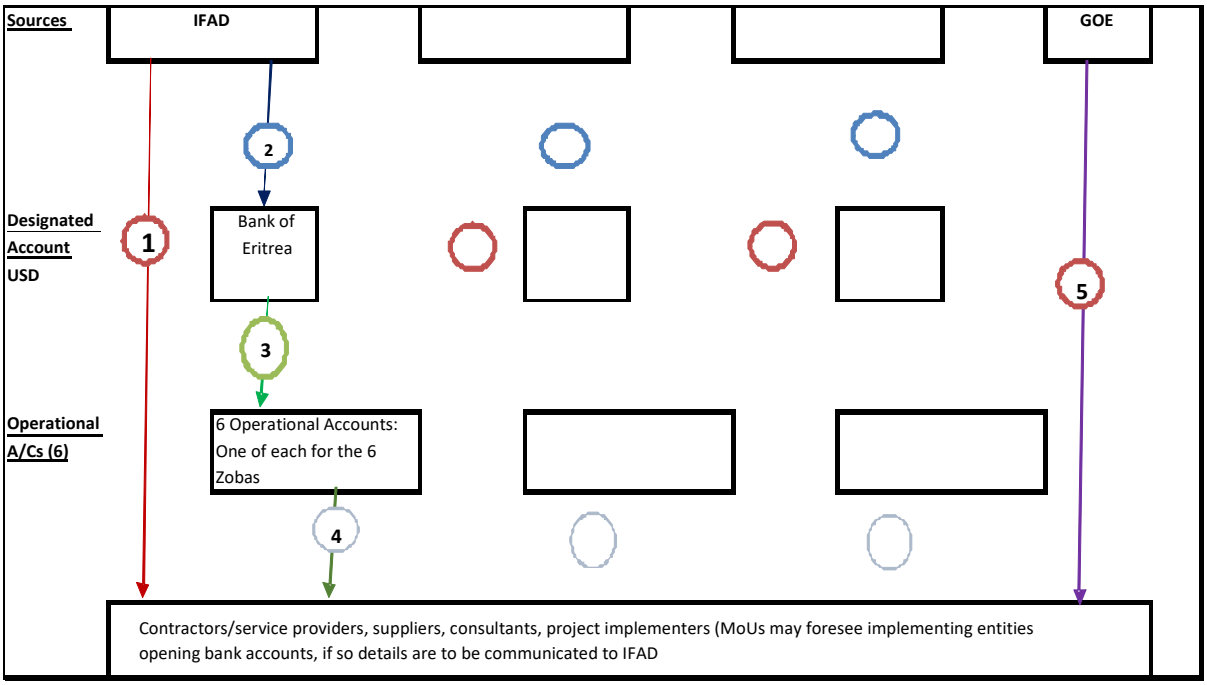
208. **Designated and Operating Accounts** – A designated bank account in USD will be opened in the Central Bank of Eritrea to receive IFAD loan and grant resources for IADP. Seven operating accounts (one for each Zoba) and one managed by the NPCO (with XXXX (details to be finalised at start-up) and the Head of Finance and Administration being the key principal signatories), will be opened also in a commercial bank in Eritrean Nakfa.

209. **Disbursement Procedures** – Disbursement procedures are detailed in the project's Letter to the Borrower, issued upon signing of the Financing Agreement. A sufficient authorised allocation (initial advance) will be provided in the amount indicated in IADP's Letter to the Borrower and/or its revisions. With a sufficient authorised allocation, the key payments will be through the designated account. Direct payments from IFAD and other funders will be minimal, limited only to very large payments over the equivalent of USD 200,000 or as the other funders may specify. Some specific disbursement situations are specified hereunder:

- Where NGOs or Community organisations will be involved in disbursement process, clear contracts/Memoranda of Understanding (MoUs) will be required. These contracts will include the financial management arrangements and reporting requirement between the NPCO and the service provider. Safeguards, such as the opening of specific bank accounts for IADP funds, will be given due consideration as part of drafting the contracts with service providers; bank accounts opened for IADP shall be communicated to IFAD
- Downstream funds flow monitoring and documentation – Each participating Zoba will necessarily open IADP specific bank account (s). These bank accounts will be operated in a cascading imprest basis as an inbuilt incentive for the Zobas to make expenditure justification in a timely fashion.
- Transactions at sub-Zoba and lower levels will be managed through working imprest to implementers.

210. The GoE systems are strong in terms of following up un-retired working imprest. The funds flow Chart 3 below arising from the above banking arrangements is presented below. The implications from an accounting perspective of the above funds flow arrangement are discussed below the chart.

Chart 3 Funds flow chart



211. Accounting implications of the above funds flow chart are as follows:

- Traceability of funds will be assured through specifically identifying activities under each fund separately from those fundable under other funders right from the AWPB.
- Even if joint withdrawal applications are submitted to cover both IFAD loan and grant, the SOEs/ WA forms will be separate items under IFAD loan and grant. Similarly, the instruction under form 100 of the withdrawal applications will show what amounts are chargeable under IFAD loan and grant;
- Once the funds are remitted into the designated account by the respective funder, the NPCO will request the Minister to transfer the respective amounts into the respective operational account; and
- Payments from the respective operational accounts will be done on parallel basis to allow for the required traceability of the funds.

212. Bank reconciliation,-the financial controller must reconcile all the designated and Operational account(s) on a monthly basis and have the signed by the Program Coordinator(The format of the reconciliation is illustrated in IFAD disbursement handbook)The signatories to the bank accounts will be as follows:

For a payment to go through it must have two signatures; one from Panel A and another from panel B	**PANEL A Signatories**	**PANEL B Signatories**
Designated account One account will opened for each parallel fund	Minister of Agriculture Ministry -Head of finance and administration	National programme Financial Controller
Operational accounts		
At NPCO level	National Programme Coordinator	National Programme Financial Controller
At zoba level	Zoba programme coordinator	Zoba Financial controller

213. **Journal Entries for Non-Cash Transactions** – The funds flow chart above shows the following as non-cash items and not flowing through the NPCO. The respective approaches as to how these amounts will be journalised into the accounting system are presented below:

- GoE waivers/in-kind contribution – This amounts to the equivalent of … USD, according to the project design. The Programme will enjoy a tax waiver. Any taxes waived by the Eritrean Revenues and Customs Authority (ERCA) will be valued in monetary terms, journalised and posted into the accountings system the same way as if the tax had been paid in cash. The entries will be to debit the respective expense code as per software chart of accounts and credit GoE contribution as income. This will be similar for other in-kind contributions such as office space;
- Beneficiary contribution will be captured through a monitoring system that is to be agreed with the Programme Monitoring and Evaluation Officer and to be detailed here below at IADP start-up in a dedicated section.

214. **Petty cash account –** In addition to the bank accounts, the NPCO will operate a petty cash account in local currency up to the equivalent of **USD 500** to allow payments for low value items (e.g. minor repairs, small supplies, newspapers, taxi fares, and other sundry expenses) in a quick and efficient manner**.** The Petty cash will be operated by the MoA Cashier. Payments through petty cash will only be allowed for amounts up to the equivalent of **USD 50** for a single transaction. The cash will be placed in safe kept in the NPCO.

215. The petty cash disbursements may be in the form of an advance or a reimbursement (when the staff member has personally advanced the funds). In both cases, the requesting staff fills out a petty cash request form. The payee name, the description of the goods or services, the estimated (or actual) cost and the transaction coding are indicated on the form, which is forwarded to the Financial Controller for approval and to the MoA Cashier for processing. A weekly reconciliation and cash count will be performed by the MoA Cashier and reviewed by the Financial Controller.

216. **Accounting Systems, Policies and Procedures** – An off-the-shelf accounting software shall be procured for IADP at start-up and customised to the project's specific reporting requirements. The software will have multi- site capability, but may be installed only at the NPCO if internet coverage is not sufficiently strong for automatic consolidation; this will be assessed at start-up based on system tests. In case the assessment concludes that it is not practical for the zobas to input transactions directly in the IADP software, simple reconciled manual cash books will be sufficient for the ZPCOs to retire activity tagged advances received from the NPCO. Once advances are retired with sufficient paper based and field based evidence, these data will be processed at the NPCO in the accounting system.

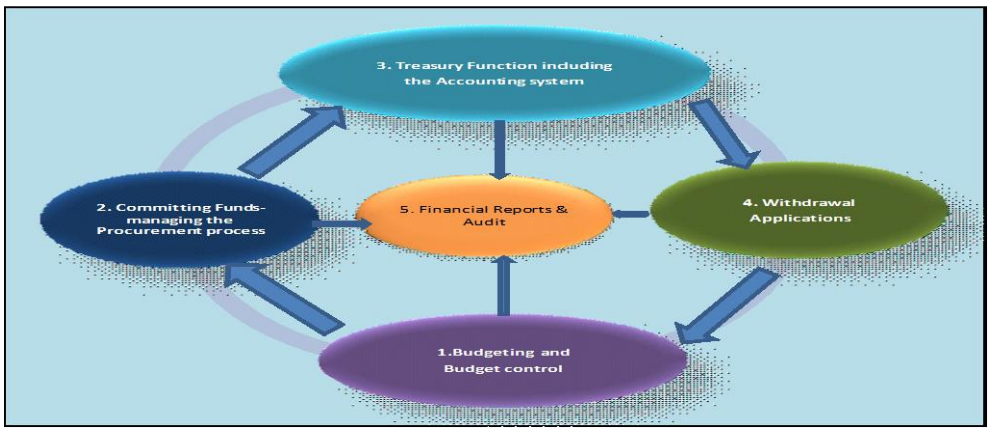
217. With respect to funds flow, IFAD Missions will always be interested in the following aspects:

- Timeliness of funds disbursed by different sources (and co-financiers funding if applicable);
- Timeliness of counterpart funds disbursed;
- Efficiency of the funding channels. Timeliness and traceability of funds flows;
- Special Account(s)/Dedicated Account(s) Management, Disbursements:
  - Adequacy of the authorized allocation to ensure a smooth flow of funds;
  - Appropriateness of disbursement methods used;
  - Adequacy of documentary support for Statements of Expenditure (SOE) disbursements, reimbursements, directs payments and Special Commitments;
  - Timely preparation and accuracy of Withdrawal Applications (WA);
  - Authorization of WA preparation;
  - Status on expenditures withdrawn from Designated Account but not yet claimed for replenishment (old cases will be queried);
  - Regularity of Designated Account(s) monitoring and monthly reconciliations signed by the Programme Coordinator. Missions will always review and assess the reconciliations;
  - Disbursement rate compared to the AWPB and whether satisfactory given the remaining implementation time.

(iii) The IADP Financial Management Cycle

218. Financial management in Government Programmes such as IADP is to be established as a routine and highly standardised process and will follow an annual cycle of inter-dependent steps. It will start with planning and budgeting. In financial control, any expenditure incurred outside the approved budget will be declared ineligible for financing. After the AWPB is approved together with the procurement plan, the next step is the process of committing funds. While this largely is a procurement function, the finance team will have a role to play. Following on from commitments will be the treasury functions, payments to eligible contractors, service providers, suppliers. The finance team will have to exercise efficiency in turnaround of withdrawal applications to IFAD to ensure liquidity challenges do not hamper implementation. The final routine in financial management is financial reporting and auditing. This manual has been arranged as to cover each of these aspects of the annual financial management routine as presented in Chart 4 below.

Chart 4 IADP Annual Financial Management Cycle



219. ***Step 1: IADP Annual Work Plan and Budgeting*** – Annual Work Plan and Budget (AWPB) shall include an Introduction and brief background, ii) Strategic focus and outputs, iii) Major risks and mitigation actions, iv) Budget and Financing plan, v) Procurement plan, vi) Training and technical assistance schedule and vii) PIU staff development plan.

220. The AWPB will be a key instrument for IADP implementation and operational control. The NPCO, therefore, gives particular attention to budget preparation and control. During day-to-day financial management, an approved AWPB is the most important document, and the principal guide on what to do and how to use resources. In the context of IADP financial management, the AWPB is more than a guideline. It represents:

e) a commitment of NPCO and implementing agencies to carry out a set of activities, produce specific outputs and achieve certain targets; and
f) Agreement by GoE and IFAD that the planned activities are appropriate in light of the IADP objectives and approval to spend the necessary money as specified in the annual budget.

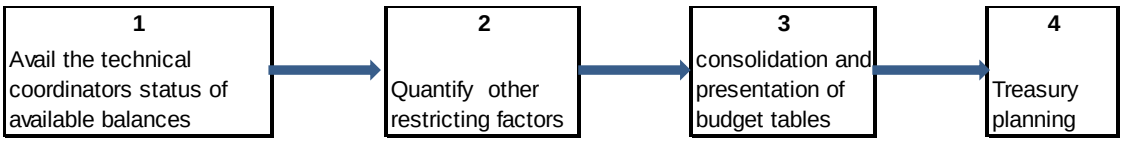
221. The AWPB is a means by which GoE and IFAD would have provided **"prior approval"** to NPCO to spend resources on the activities included in the AWPB. It should be taken very seriously, as any expenditure incurred outside the AWPB will be queried by auditors, supervision missions and will be declared ineligible for Programme financing.

222. The detailed steps to be followed in the preparation of the AWPB are included in the IFAD guidelines for preparation of AWPBs and progress reporting. The Procurement planning aspects are covered under the Procurement Manual.

223. Timing: The draft AWPB should reach IFAD within two month before commencement of the year in question, that is, by 31st October of each year. It is equally important that AWPB preparation schedule be in tandem with Government budgetary process since IADP budget should pass through Government budgetary approval process and IADP must be included in the GoE printed budget estimates. The AWPB preparation schedule (see Section IV A. Planning) is provided for guidance. It should be reviewed and modified as may be necessary in consultation with the Ministry of Agriculture and other key stakeholders.

224. **Role of Financial Controller in the AWPB Preparation Process –** In the planning and budgeting stage, the IADP Finance Officers will perform the following four functions below:

Roles of IADP finance staff in budgeting process



225. *Role 1: Avail IADP Budgeting Teams the Status of Available Balances* **–** Technical coordinators will play an important role in facilitating budget preparation for activities in their respective realm. This does not however imply that they can solely dispose the of component budget as the respective subcomponents are interrelated with others. IADP is adopting an integrated team work Programme management approach.

226. Prior to the start of the planning and budgeting exercise, the Financial Controller (FC) provides each of the above budget holders the respective sub-component status of available balances and overall category-wise implications. The FC does this by making extracts from the accounting system and obtains from IFAD a status of funds balances available category-wise. From the accounting system, the FC also obtains balances component-wise, including up to the major activities as described later in the manual. The status of funds available should be adjusted by deducting commitments, WAs in the pipe line and projected expenditure for the remaining part of the current year. The adjusted information about the status of funds is provided to the above named budget holders so that they are aware of budget ceilings. A working form that can be used

in Ms Excel to determine the available balance is as given below. The software can assign historical expenditures to each of the planning units as described above and in the tables below.

Table 17 Working Form to Determine Status of Available Balances Category-wise Analysed Separately for IFAD loan and grant

Category	Available cash balance)[13]	Less Commitments[14]	Less WA's in Pipe Line	Less Projected Expenses to the end	Net Available Balance
Works	x	x	x	x	X
Salaries and allowances	x	x	x	x	X
Trainings	x	x	x	x	X
Consultancies	x	x	x	x	X
Equipment and materials	x	x	x	x	X
Operations and maintenance	x	x	x	x	X
Vehicles	x	x	x	x	X
Total	x	x	x	x	X

227. The net available balance should also be broken down according to components, sub-components and major activity headings so that planners are able to determine the relative weights for each component/ sub-component in the AWPB as illustrated in the table below. It is important to keep a relative balance between components so that some components do not lag behind.

Table 18 Working Form to Deduce Status of Available Balances Budget Units Analysed Separately for IFAD Grant and Other Financiers

Budget unit	Available cash balance)[15]	Less Commitments[16]	Less Projected Expenses to the end	Net Available Balance

228. *Role 2: Other Disbursement Restricting Factors* **–** Whereas available balances may set the ceiling of what to include in the AWPB, there are other restricting factors. The FC will need to quantify these and communicate to the budget holders/ sub-component heads at the start of the planning season; examples will include:

- The realistic amount that can be replenished from IFAD;
- Time lag between commitment and disbursement; and
- Existing obligations to complete on-going works.

229. *Role 3: Consolidating the IADP AWPB* **–** In the AWPB there is a number of finance tables that have to be consolidated by the FC and his or her team, working closely with the PM&E Officer. While the consolidation of the AWPB into one document will be led by the Planning and M & E Officer, the finance tables will be a responsibility of the FC. These tables will include:

[13] IFAD Flex cube Statement of Funds (convert to Nkfa) plus balances for domestic financiers well reconciled to the computerized accounting system to be installed by IADP.
[14]Take care to roll-over commitments into next year's budget.
[15]This will be as per IADP accounting system
[16]Take care to roll-over commitments into next year's budget

- Past year financial performance and cumulatively;
- Consolidated Annual Budget Summary;
- Component-wise summary;
- Category-wise summary;
- Category-wise summary by financier;
- Component-wise summary by financier; and
- Detailed Activity based annual Work Plans and Budgets for each budget responsibility centre.

230. The formats for each of the above summary are available in the IFAD guideline for AWPB preparation and progress reports and were already adapted by FDP, the preceding Project.

231. *Role 4: Treasury Planning* – This will be part of the AWPB preparation. The FC, as part of AWPB processing, will earmark the bigger items that can be paid for through direct payments and those that have to be paid for from the operational bank accounts. This will be translated into a monthly cash flow forecast to ensure there is sufficient liquidity even in peak periods.

232. Under Work plan and budgeting IFAD supervision missions will always be interested in:

- Timely preparation and approval of AWPB;
- AWPB in line with expenditure categories in Financing Agreement Schedule 2;
- Financing sources and implementing agencies for each category in the AWPB are identified; and
- Linkage between AWPB and Procurement Plan.

233. ***Step 2: Committing Funds*** – Commitment of funds is largely a procurement function covered under a separate procurement manual. The finance team will have a role to play in the procurement cycle including:

- Providing the status of available balances ahead of each procurement launch to avoid over-committing IADP eMP/GoE. This will require NPFC to maintain a detailed analysis of commitments;
- This means contracts cannot be signed off without the NPFC entering them into his/her system;
- The authentication, custody and execution of any financial instruments, such as performance bonds, advance guarantees will be a responsibility of the Financial Controller; and
- The financial progress elements of the contracting monitoring forms will be a responsibility of the Financial Controller.

234. ***Step 3: Treasury Function including the Accounting System*** – IADP's financial reporting will be in accordance with the International Public Sector Accounting Standards (IPSAS) - cash basis as already adopted in Eritrea. An accounting software will be procured for IADP to facilitate financial control.

235. *Setting the Chart of Accounts* **–** This will be a critical start up activity, a chart of accounts closely linked to Programme cost tables in the IADP Design Report will be set up to capture the Programme financial data under the appropriate headings for the various Programme financial reports. The structure of the chart of accounts shall cater for:

- The IADP components, subcomponents and activities;
- Expenditure items under each component and sub-component;
- The IFAD expenditures categories for the Programme;
- Sources of funding; and

- Cost Centres.

236. Coding of the Charts of Accounts, the accounting software will have provision for 5 fields/filters that will direct the coding of the chart of accounts as shown below:

Data filter	Digit	Programme data
Control Code	First	The Programme component but through the subcomponent
Subsidiary Codes	Second	Principal Activities
Expenditure Code	Third	GoE Expenditure Categorisation
Cost Category	Fourth	Expenditure Categories according to the Financing Agreement
Donor	Fifth	Financiers (e.g. IFAD, GoE, Beneficiaries, etc.)

237. ***Records Management*** – Financial records must be created and preserved for every financial transaction performed under the Programme. Financial records are defined as any financial information including written, computer data, internal forms, e-mails, or any other form of storage information originated from the PCOs (National and Zobas), such as internal forms, journal vouchers financial reports (Monthly and quarterly) copies of cheques and withdrawal applications etc. It can also be information received by the PCOs, such as supplier invoices and receipts, bank statements, IFAD documents etc. within the framework of the Programme's official activities. The objective of this procedure is to preserve the financial records and files for further official use by the PCOs, for financial audit and for review by the Fund during the supervision Missions. It is important to note that the Programme's financial records are the property of the MoA; accordingly, they cannot be removed or destroyed. In fact, according to the IFAD general conditions, the GoE has to maintain the original records for a minimum of 10 years after IADP completion.

238. Filing of the Financial Records – The Finance team will maintain chronological files in which the financial documents have to be filed for future reference. Filing should be performed daily to prevent the accumulation of papers and to ensure that the financial records are maintained in an up-to-date manner at all times. Each financial record should be filed under its code in a chronological order, with a sequential number assigned to every document. Any kind of additions or amendments to the financial document should be filed in a chronological order immediately following the principal document. A separate series of vouchers will be filed for each operational account opened; separately for IFAD loan and grant from the documents of other financiers.

239. Storage of Financial Records – The financial records of the Programme should be stored at the NPCO and/or MoA for a minimum of 10 years after Programme completion. The data should be stored within the accounting software, as paper copies, as scanned copies and as computer disc copies. The Financial Controller should allocate an appropriate storage area for the financial records in paper format and maintain them in locked cabinets, safe from water and fire, to which access is controlled and limited. The Financial Controller should also classify the financial records as "Confidential", or "General". All-important correspondences should be filed.

240. Archiving of Financial Records – In order to prevent an unnecessary pile-up of files in a limited office space, the Financial Controller should make sure that the financial records are archived on a regularly basis. Once a year, the Financial Controller should make sure that the completed or inactive files are archived in a manner that will allow for easy retrieval of the files in case they are required at some future date.

241. Backup Procedures – To avoid the loss or damage of financial data, the information should be kept in two copies: a) at the computer server of the NPCO; and b) in the locked cabinets of the NPCO. Only authorised personnel should be allowed to access the financial records. The access of external persons is prohibited except for authorised persons such investigators, auditors and IFAD staff/consultants with prior arrangement.

242. Under the area of accounting system, IFAD Missions will be looking out for the following aspects:

- Basis of accounting – IADP should comply with the cash basis of accounting with the required disclosures;
- Adequacy and reliability of accounting system – The Programme should ensure to comply with the internal controls around the accounting system;
- Recordkeeping (including documentation and filing/archiving);
- Fixed assets register maintained and reconciled;
- Adequate documentation and controls for Information Systems, including documented accounting procedures, backup of financial records, integration of all sub-systems;
- Adequacy of Chart of Accounts for IADP accounting purposes;
- Timeliness of recording transactions, regularity of performance and approval of reconciliations, controls on erroneous recordings; and
- Appropriate/adequate accounting and reporting of counterpart funds contributions (including tax and tax exemptions) as well as beneficiary contributions.

243. **Internal *Controls***– Maintenance of a strong system of internal controls will be an integral part of the financial management function. Internal financial controls will aim to ensure efficiency, reliability, of financial reports and compliance with applicable laws and regulations including the financing agreement. Internal controls will include authorisation, verification, segregation of duties and reconciliations as further detailed below.

244. Expenditure verification, *Payment Documentation* – For all payments, the Financial Controller should ensure that the following steps are performed:

- A payment request voucher should be prepared for each payment;
- Validation of invoice – the following validation checks should be performed by the Financial Controller on invoice: a) invoice arithmetically correct; and b) quantity and price recorded on invoice should be checked back to contract, order, and certification of completion/delivery. If there is any discrepancy identified, it should be raised with the vendor prior to proceeding with invoice processing; and
- Supporting documentation – the following documents should be attached to the payment voucher to support validation: a) copy of invoice; b) required approvals; c) purchase order, goods received note and contract; if applicable; and d) copy of required guarantees.

245. *Minimum Documentation* – To ensure that the finance unit collects all the supporting documents, the following checklists are provided; they should be ticked-off carefully and attached to each payment voucher.

Standard Goods	(Tick)
Complete Written Voucher, duly approved	
Confirmation by Procurement Officer that the Procurement was properly done in accordance with GOE and donors' procedures	
Attach Copies of relevant No Objections from donors, where applicable	
Availability of supporting documentation	
Contract	
Invoice	
Evidence of payment	
Bank guarantee	
Delivery notes/reports (Make Cross Reference where bulky)	
Fund availability in	
Budget-Ensure Laccie budget controls have been updated	
Category(ies)	
Accuracy of Computations/footings	
Reviewed optimality of the disbursement method	
Banking instructions	
Correspondence bank	
Percentage of financing	

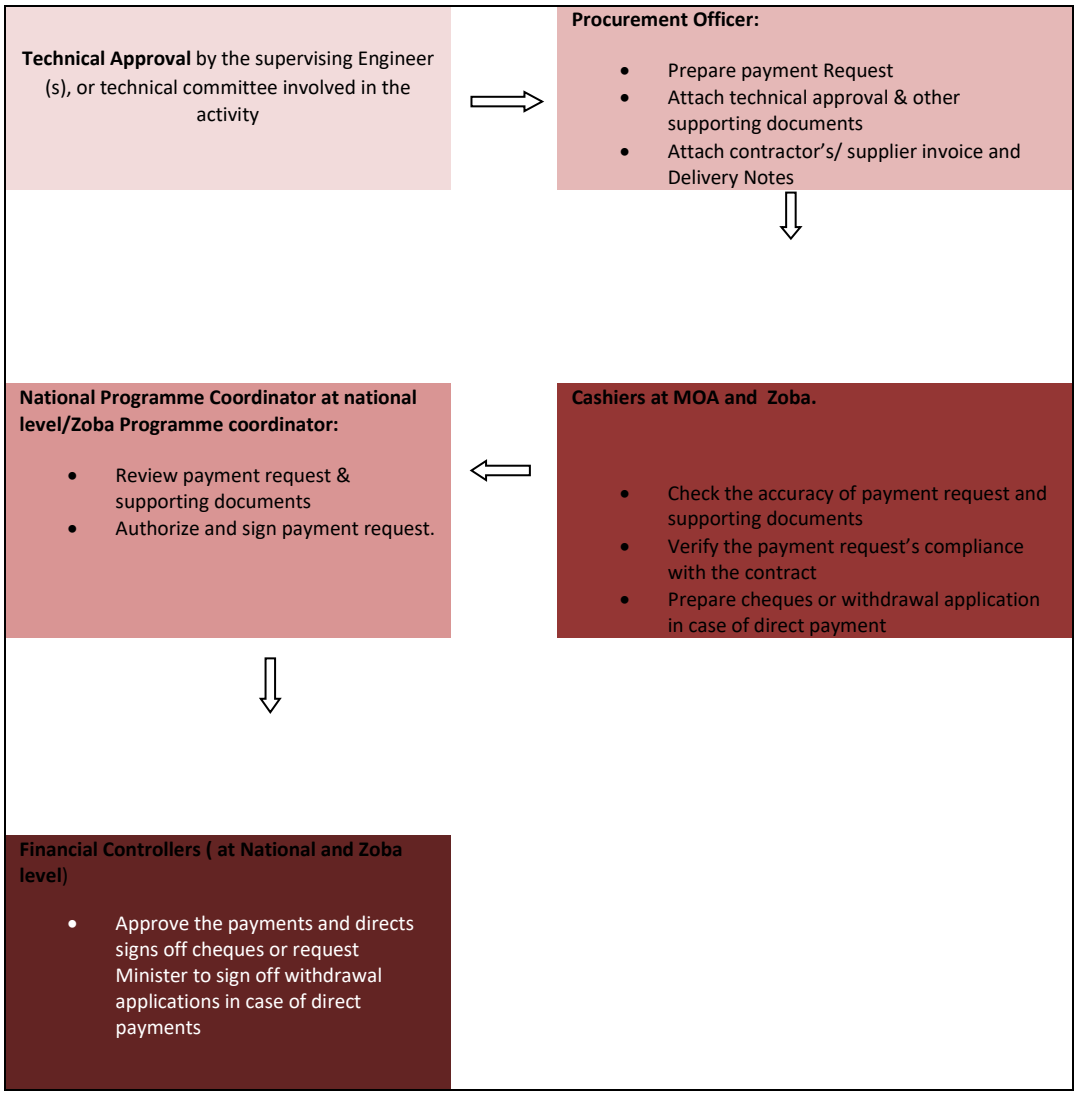
In-Country Workshops	(Tick)
Attendance sheets	
Attendance sheets should be reconciled to DSA paid	
Availability of supporting documentation	
Training report	
Hotel Receipts/ bills for meals and accommodation(should be reconciled to attendance sheets)	
Procurement record on how the venue was selected	
Justification for any fuel refunds and related support	
Fund availability in	
Budget-Ensure Laccie budget controls have been updated	
Category(ies)	
Accuracy of Computations/footings	

Workshops- Abroad	**(Tick)**
1. Invitations and related IFAD's No Objection	
2. Availability of supporting documentation	
a) Boarding passes reconciled DSA days taken	
b) Back to Office Reports	
3. Fund availability in	
a) Budget-Ensure Laccie budget controls have been updated	
b) Category(ies)	
4. Accuracy of Computations/footings	
Consultancies	**(Tick)**
1. Timesheets in comparison with the work done; 2. Attach Copies of relevant No Objections from IFAD, where applicable 3. An acceptable report 4. Availability of supporting documentation a) Contract b) Invoice c) Evidence of payment d) Bank guarantee for advances 5. Fund availability in a) Budget-Ensure Vote Book has been updated a) Category(ies) 6. Accuracy of Computations/footings 7. Banking instructions Correspondence bank	

246. Adequate *Segregation of Duties* – The IADP financial management system will be designed to ensure that no individual can originate, process and complete the payment cycle for works and

goods will follow specified patterns. It is the Coordinator's responsibility to ensure that preparation, authorisation, execution, custody, recording and the operation of systems are segregated under the Programme.

247. The Expenditure Cycle for works and goods at each cost centre (i.e. at NPCO and ZPCO level) is detailed in the chart below:



248. *Payments for Consultant Services* – There are two types of consultants' services: a) consultants with a lump sum contract; and b) consultants with a time-based contract. For type (a) consultants, payments will be made against the delivery of outputs as detailed in their contracts. For type (b) consultants, payments will be made against the submission of a time sheet, a report on activities performed and the assurance (by a technical coordinator) of the adequacy of services rendered. Both time sheets and reports will need the technical approval of the technical component head before the payment can be honoured. At each cost centre, the payment process for both lump-sum contracts and time based contracts is illustrated hereunder.

Type A: Consultants with a Lump Sum Contract

Type B: Consultants with a Time-Based Contract

249. Similar arrangement as above will apply for regular office supplies and travel related expenditures as a way of assuring segregation of duties.

250. ***Fixed Assets Control*** – Fixed asset management is an important process that seeks to track fixed assets for the purposes of financial accounting and to ensure preventive maintenance, and theft deterrence. Adequate Fixed asset maintenance also increases the sustainability of the Programme/Project. The key controls in asset management will include maintenance of comprehensive asset register, regular physical verification and maintenance and restricted access by un authorisation persons.

251. *Asset Register* – The Accountant/Cashier must maintain a register of all (material) IADP equipment. The asset register should record the following information for each individual piece of equipment: a) Asset description; b) Asset number; c) Serial number of the item; d) Officer responsible for the asset; e) Funding of asset (IFAD, Government, etc.); f) Location, and date of purchase; and g) Estimated life span.

252. *Asset Verification Review* – The Financial Controller must ensure that an inventory of all equipment recorded in the fixed asset register is performed at least once a year. This should include the following checks:

- Verify that all equipment is still held in the location recorded on the register;
- Check that equipment is still in a reasonable state of repair;
- Discrepancies between the verification exercise and the fixed asset register should be investigated. Where assets are missing or seriously damaged, they should be removed from the asset register.
- The removal should be formally documented and approved by the Programme Coordinator and
- notified to procurement team; and
- The inventory must be performed by different staff from those who use the equipment, to ensure adequate segregation of duty.

253. *Vehicle Maintenance and Fuel* – The drivers are required to record all trips and fuel refills in a logbook and collect all the supporting documentation (different if fuel cards are used). The vehicle logbook provides control over the use of the vehicles as well as fuel consumption. For official field trips, a special cash provision is given to drivers to allow them to purchase fuel during the trip.

254. The safety of cars is the responsibility of the recipient staff members and drivers assigned to the vehicles. Consequently, they must ensure that the cars are parked in a secure area when not in use or outside working hours. The drivers are required to monitor the maintenance of their assigned vehicles under the supervision of the administrative assistant. The drivers must notify the administrative assistant of maintenance needs (including periodic servicing) so that the cars can be serviced on a timely basis.

255. The Financial Controller should, on a monthly basis, review the mileage and fuel usage as well as any undertaken service as reported in the log book of each car and compare these with the official invoices and travel authorizations etc. to make sure the numbers are accurate.

256. An insurance policy must be taken by the NPCO to ensure all cars and passengers against all risks, including damage, theft, and fire, as well as injury and property damage to third parties.

257. Under internal controls, IFAD Missions will be keenly interested in the following aspects:

(i) Segregation of duties – are the following functional responsibilities performed by different units or persons: a) authorization of a transaction; b) execution of a transaction; c) recording of the transaction; and d) custody of assets involved in the transaction;

(ii) Clarity and adequacy of decision processes and sequence of events for control functions in Programme implementation reflected in the Financial Manual (or equivalent thereof);

(iii) Adherence to Programme Management Manuals;

(iv) Effectiveness and efficiency of internal controls over inflows of funding sources other than IFAD;

(v) Adequacy of contract management (use of contract register and monitoring form) and filing thereof;

(vi) Effectiveness and efficiency of internal controls over expenditures (full cycle from commitment, payment, receipt of good and services, approval of payments, classification, etc.);

(vii) Documentary evidence to confirm delivery and acceptance of contracted goods, works or services;

(viii) Physical controls over cash, documents and records. Adequacy of filing systems. Missions will review the petty cash subject to monthly reconciliation as well as surprise checks; custody of cash box and control of keys;

(ix) Adequacy of physical management of cash;

(x) Timely payment to suppliers and consultants;

(xi) Eligibility of expenditures with respect to Financing Agreements;

(xii) Legality/eligibility of advances from Programme funds and timely justification for use thereof;

(xiii) Compliance with financial management covenants in the Financing Agreements and Letter to the Borrower/Recipient (LTB/R);

(xiv) Adequacy of up-to-date record keeping for fixed assets and inventories;

(xv) Adequacy of controls concerning Programme assets including: a) vehicle and other assets management (assets should be property tagged and a physical inventory count done on a regular basis); b) fuel management (Drivers should maintain a vehicle log book); c) travel authorisations (including Daily Subsistence Allowance (DSA) paid to staff); and d) adequacy of vehicles and assets insurance;

(xvi) Workshops: a) availability of list of participants; b) DSA paid to participants; and c) receipts for workshop expenditure;

(xvii) Adequacy of controls and authorisation process for use of funds (payments, transfers, Cash/Bank balance management) and other operational accounts;

(xviii) Banking arrangement and controls (reconciliation of bank statements with financial accounts); and

(xix) Existence of a proper IT support unit in place.

258. ***Step 4: Withdrawal Applications*** – IADP will have parallel financing and each fund will require separate withdrawal applications and its own series of payment vouchers.

259. The Letter to the Borrower and IFAD Disbursement Handbook provides all the guidance and forms needed for the preparation of withdrawal applications, including replenishment applications. Those forms and guidance are not reproduced in this manual.

As stated in the LTB/R and the LDH, four standard disbursement procedures may be used for withdrawal of financing. The disbursement of the parallel financing shall follow IFAD disbursement procedures unless the other funders specify their required procedures. For each fund the following procedures will be followed in application for funds:

- **Procedure I –** Advance withdrawal (using imprest account with replenishment designation account in a commercial bank). The initial advance ceiling is set at USD 8.3 million;
- **Procedure II –** Direct payment. This modality is used for eligible IADP expenditures to be paid directly by IFAD, generally for large contracts, to suppliers, contractors or third parties, as authorised by the GoE over USD 100,000 and to be reviewed by IFAD depending on assessment of the fiduciary risk;
- **Procedure III –** Reimbursement. This is applicable when eligible IADP expenditures, reimbursable under the financing, have been pre-financed by the GoE. Such reimbursements are expected to be claimed not later than 90 calendar days from the date of payment by IADP.

260. The finance team must be efficient in submission of the Withdrawal Applications (Was) to the financiers; otherwise liquidity can be a hindrance to implementation. A tool that can be used to measure the efficiency of a replenishment process is the designated account reconciliation for each parallel fund as shown below. Thus the designated account reconciliation should always be prepared for inclusion in WAs and should be used, on a monthly basis, as a performance measure as illustrated below.

Illustrating that Designated Account Reconciliation to be prepared for each parallel fund used as a good Treasury Management Tool

		USD	Management Tips
1	Total initial advance by the Fund	xxx	This reconciliation should give the whereabouts of this advance and the FC should always on a monthly basis be interested to know the whereabouts of the initial deposit.
2	LESS: Amount Recovered by the Fund	-	
3	Outstanding Advance to Designated Account	xxx	
4	Balance of the Fund Designated Account as per Bank Statement from the Commercial bank	xxx	If less than 50% of the initial deposit can be traced to bank statements, this can always alert the FC and IADP Coordinator of lingering cash flow problems by looking at lines 4 and 5
5	Balance on the Fund Programme Operational Accounts as per Bank Statements	xxx	
	Total of Bank Balances	xxx	
6	Plus Total Amount claimed in this Application No.	xxx	If this amount is materially higher than 30% of the initial deposits it would point at laxity in the replenishment system. If for example, this amount is twice or more than the minimum amount for replenishment, It would tell PC that the FC could have lodged a WA when expenditure reached the minimum amount of 30% of the initial deposit and there could be over bulking/ inefficiency.
7	Plus Total Amount withdrawn from bank accounts not yet claimed	xxx	This should cause the IADP Coordinator to demand why money to this magnitude has been withdrawn but is not being included in the WA. The PC should always demand for a schedule of this amount—it reflects inefficiency and results in cash flow problems to have large amounts of money from bank accounts and take a long time to be replenished back. Secondly care should be taken that this figure is not only inserted as a *balancing figure*, which would reflect that the designated account is not well managed.
8	Plus Amounts claimed in previous Applications not yet credited at date of Bank Statement	xxx	The WAs in the pipeline, if they take long to be processed, could reflect that funder raised many queries on the quality of the WAs, in which case the IADP Coordinator could request for staff training; or it could be delays on the side of IFAD and in which case the PC would still have to initiate follow-up from IFAD. It is advisable for the FC to always follow the status of the WA on IFAD's Withdrawal Application Tracking System (WATTS).
9	Minus Interest Earned		
10. TOTAL ADVANCE ACCOUNTED FOR		xxx	If this total does not equal to the outstanding initial deposit, the PC should demand explanation. It is so serious to fail to reconcile the initial deposit

261. It is key for the FC to know the IADP treasury position at all time in order to better manage the Programme's liquidity position in a timely and efficient manner. The key goals are to ensure that: a) there are sufficient funds in treasury to meet IADP's field activities for implementation; b) the disbursement rate of the Programme closely follows the physical activity progress; and c) **i**ncrease in the performance level of IADP and meeting its objectives as in the PDR.

262. The key elements on Programme treasury position are:

a) Status of Designated accounts balances (Using the cash books as at reporting date);

b) Status of the operation accounts balances (Using the cash books as at reporting date);

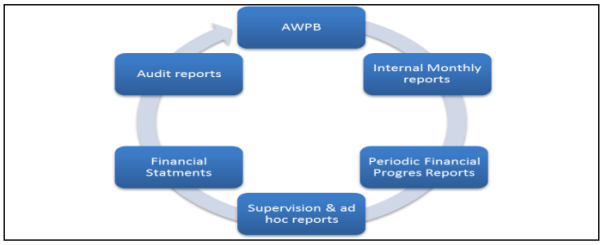
c) The status of cash in hand (Using the cash book as at reporting date);

d) The money value of WAs with funders for reimbursement; and

e) The money value of WAs to be submitted to the funders.

263. The FC should prepare regular cash and expenditures rolling monthly cash flow forecasts. This will help to detect periods of liquidity gaps so that appropriate adjustments in work scheduling or any other remedial actions can be taken proactively.

264. ***Step 5: Financial Reports and Auditing*** – Periodic financial progress reports are a requirement of the IFAD Financing Agreement. Sufficient information must be made available about what the money is spent on, how much is spent and what the results are. The major financial reports include the following: AWPB, monthly financial reports, periodic financial progress reports, supervision reports, annual financial statements and audit reports. IFAD has now developed guidelines for Interim Financial Reporting (IFR) to guide the progress reporting. These have been included in the resource pack. The resource pack includes guidelines for each of the following aspects.



265. Under financial reporting IFAD Missions will be looking for:

- Completeness, accuracy, usefulness, and timeliness of financial reports;
- Interim FM reports and linkage to progress reports - timely preparation and submission to IFAD;
- Preparation of reports showing actual versus budget income/expenditure and AWPB execution rate;
- Follow up of previous Aide Memoirs' fiduciary recommendations; and
- Reasonable alignment between disbursement rate of recurrent versus investment cost categories.

266. ***Grant completion and Closing –*** The closing of the grant will be due six months after the Programme completion date. Both the completion and the closing dates of the grant have financial implications on the Programme management such as development

and submission of a recovery plan, ensuring eligibility of expenditures and submission of the necessary documents outlined below.

267. ***Recovery plan –*** To ensure that the designated account is completely and timely justified, the NPCO will develop and submit to IFAD a recovery plan outlining the percentages per withdrawal application that will be recovered and paid respectively. The recovery plan will be submitted to the fund around six months before the completion date or when the outstanding balance (amount still undisbursed by IFAD) is less than double the authorized allocation.

a. AUDIT OF IADP

268. It is a requirement of all IFAD funded Projects to have an *ex-post* review of their books of accounts, records of transactions and financial and other systems maintained by a Programme coordination unit for the purpose of executing the Programme, and of the financial statements prepared by a PCU reflecting Programme operations during a given period. Under IADP, audit will examine the adequacy of accounting systems and procedures, capacity to maintain appropriate accounts and documentation of the grant expenditures. The objective of the Programme audit will be to:

- give credibility to the financial statements and other management reports;
- identify weaknesses in internal controls and financial systems;
- verify compliance with loan covenants relating to financial matters; and
- make recommendations for improvement to provide credibility and assurance of accountability.

269. *External Audits* – In the case of the IFAD portfolio in Eritrea, the Office of the Auditor General (OAG) will undertake the audits, including that of IADP. Notwithstanding that it is the OAG to undertake the audit; the Terms of Reference for external audit should be cleared with IFAD on an annual basis. Under the area of external audits, IFAD Missions will be looking out for:

- Adequacy of scope and ToR;
- Adherence to ToR;
- Timeliness of audit report; and
- Quality of audit.

270. *Internal Audits* – The MOA internal auditor will include IADP in the rolling internal audit plan. Under the area of internal audit, IFAD Missions will be looking for the following:

- Existence of Internal Audit arrangements;
- Adequacy of internal audit arrangements (organization - staff capacity);
- Adequacy of internal audit scope of work and quality of reports; and
- Assessment of matters raised in audit reports.

271. The IFAD general procedures governing Project audits such as appointment of auditors, assessment of auditor's capacity, submission of reports, minimum scope of audits, ToRs and sample of engagement letter are include in IFAD guidelines for project audits, and therefore there is no need of reproducing them in this PIM.

III.6: PROCUREMENT

272. At national level, the overall responsibilities for implementation and coordination will be assigned to MoA. The National Project Coordination Office (NPCO) will ensure day-to-day management of the Project, headed by a full-time Project Coordinator fully dedicated to IADP and under the strategic oversight of the PSD. The IADP-NPCO will have

an administration team consisting of a Senior Procurement Officer and Financial Controller and accounts assistants, supported by 3 procurement assistants and an accountant.

273. The overall responsibility for procurement is with the Administration and Finance Department (AFD) of the MoA, while the Finance units of the ZPCOs will be responsible for the procurement at the Zoba level. The Senior Procurement Officer will be responsible for training the Finance units of the ZPCOs on IFAD procurement requirements and, to that end, he/she will submit a detailed training plan to IFAD.

274. The NPCO seconded staff will be supported by externally identified TAs (minimum one junior and one senior expert) who have the necessary skills, qualifications and experience in Procurement in accordance with defined ToRs. The entire team will receive adequate procurement training and regular implementation support both on compliance with IFAD procurement processes and procedures and best international practices in procurement and IFAD will provide its No Objection to the shortlisting of individuals for all IADP procurement positions. The ToRs will detail specific requirements for coaching of MoA staff and skills transfer.

275. The Zoba level DG T&I will procure and install small workshops, including procurement and installation of small machinery, simple tools and electrical installation. Eligible investments will be:

a. generator
b. drill press
c. smoother/polisher
d. welder
e. angle grinders
f. chop saw wood
g. bench vice
h. workbenches
i. air compressor
j. solar panels
k. minor construction works such as buildings, slabs and roofing
l. other small tools
m. initial stock of raw material (wood, metal)

276. Given the weaknesses of the current legal and regulatory framework, IFAD's Procurement Handbook (available here: https://bit.ly/2QDqXN6) and Standard Procurement Documents will be adopted in full and shall be followed for all procurement processes. Proposed methods of procurement of goods, works, and non-consulting services and related IFAD prior-review thresholds are laid out in the Letter to the Borrower/Recipient.

277. The Senior Procurement Officer will participate to the preparation of the AWPB, ensuring that the final document is realistic, reasonable and results-oriented. To ensure smooth planning and implementation of the AWPB, the budget estimate shall be done after completion of market research particularly for procurement related activities. The Senior Procurement Officer shall also ensure a realistic procurement plan and prepare the procurement package (specifications, ToRs, etc.) prior the start of the new fiscal year. The Senior Procurement Officer will prepare the procurement plan and training plan together with the AWPB and all documents will be sent together to IFAD for No-Objection 60 days prior the beginning of the new fiscal year.

PART IV: ANNEXES

ANNEX 1. POVERTY ANALYSIS

1. According to data from 200317, 66 percent of Eritreans (meaning 2.36 million) were considered as poor and unable to obtain sufficient food (in terms of calories) and other essential goods and services to lead a healthy life and among these, approximately 37 percent live under extreme poverty, i.e., below the food poverty line. In Asmara, the capital city, the incidence of poverty is about 56 percent and the incidence of poverty is higher in smaller urban centres.

2. The report highlights traits common to the poor and extremely poor in the population that are summarized as follows:

a. Poverty incidence shows significant variation among Zobas with the Northern Red Sea and Anseba having the highest poverty followed by the Southern Red Sea.

b. Poverty is strongly related to lack of access to basic services such as education (especially literacy level of head of household) and health care

c. Land tenure systems, especially in the highlands and Western midlands, discourage long-term improving investments in the cultivable land and make it difficult for poor rural households to graduate from poverty

d. In rural Highland areas, the poor households cultivate only 0.9 hectares of land, less than the average of 1.1 ha for each household; they are less able to diversify their agricultural production and make them resilient to economic and climate-related chocks

e. The poor, in particular the rural poor, have larger families (average of 6 persons) compared to only 4.2 persons for the non-poor. The average family size in Eritrea is 5.1 persons

f. About 30 percent of households are headed by women[18] (of which 18 percent are widowed); on average female employees earn less than half that of males and a majority of the poor women in the rural areas are engaged in low-paying manual labor in construction and agriculture. Furthermore, female-headed households, have fewer household assets including livestock than male-headed households. Rural women are less likely to be literate and numerate about 40 percent leave school at an early stage due to marriage[19]. Rural women often do not receive antenatal care and suffer from poor nutrition

g. Poverty is concentrated in rural areas, and is most severe in arid zones. About 67 percent of the poor live in rural areas and rely on low- input low-output agriculture and animal herding. The incidence and severity of poverty among rural inhabitants depend on the agricultural endowments of the region in which they live. Those living in chronically arid areas, such as the coastal plains and the northwestern lowlands are on average much worse off than those living in the wetter eastern escarpment, western escarpment, and central highlands. About 36 percent of the nation's people live in the arid areas.

h. The greatest number of poor live in the highlands. While poverty is more pervasive among people living in the arid regions, the greatest number of poor people live in the more densely populated highland regions.

[17] LSMS,2003

[18] More updated data from EPHS 2010, women headed households are 47% of the total with the proportion higher in urban areas (53%) than in urban areas (44%)

[19] The literacy rate has been improving in recent years and is now much higher for younger women compared to older women: In 2010, about 77% of women age 15-19 years were literate compared to women 45-49 which literacy rate was about 30% (EPHS, 2010)

i. Income is distributed unequally. The ratio of share of consumption by the richest quintile (top 20 percent) to that of the poorest quintile (bottom 20 percent) is 6.8, which is relatively high

j. The poor not only have low levels of income and expenditure, but they also have more limited access to public infrastructure and basic social services including education, health, clean drinking water, and proper sanitation. Such limited access undermines their capabilities and severely limits their potential to secure gainful employment, and results in income poverty

Table 19: Poverty incidence (head count)

Location	Population (%)	Poor (%)	Of which Extreme Poor (%)
Rural	68.8	64.64	38.90
Urban	31.2	70.32	32.65
Overall	100.0	66.40	36.97

Source. Living Standards Measurement Survey and Dimension of Poverty, National Statistics Office, 2003
Note: The Poverty Line is Nakfa 240 per capita/month; Extreme Poverty line: Nakfa 150 per capita per month

ANNEX 2. TERMS OF REFERENCE OF NPCO AND ZPCO STAFF

Project Coordinator

Duties and reporting lines

The Project Coordinator (PC) reports directly to the Director of PSD and is directly accountable to the Minister of Agriculture. The PC serves as secretary of the National Steering Committee (NSC) and is also the Chairperson of the National Technical Committee (NTC).

Tasks and responsibilities

- Responsible for overall coordination, planning, management, reporting, monitoring and evaluation of the Project;
- Ensure that Project implementation is results oriented, efficient and in compliance with relevant documents (financing agreement, project design report, project implementation manual, annual workplan and budget and other related documents);
- Coordinating and supervising the preparation of a consolidated annual workplan and budget and its timely submission to the Minister for Agriculture;
- Mobilizing the required international and national technical assistance and overseeing their work;
- Ensuring recommendations of supervision missions are implemented and maintaining the general relationship with IFAD;
- Providing technical support to the NPCO and ZPCOs and other implementing agencies;
- Continuously assessing viability, profitability and targeting efficiency of the activities proposed by the project;
- Managing the NPCO staff on a day to day basis.

Qualifications and Experience

- A Master's Degree in Economics, Agricultural Economics or a similar degree from a recognized university;
- At least 10 years work experience in managing agricultural or rural development projects;
- Knowledge of Programme Management cycles with emphasis on results-based work planning and budgeting;
- User efficiency of the Microsoft Office package (Word, Power Point, Excel);
- Fluent in English (written and oral) and good report writing skills;
- Demonstrated advocacy, communications and negotiations skills and ability to work both as a team member and as a team leader;
- Working knowledge of GoSE policies, operations and reforms;
- Experience of working with a multilateral partner an added advantage.

Technical Team (NPCO, ZPCO)

Component 1 Technical Coordinator (Watershed Management and Soil Conservation Engineer)

Duties and reporting lines

Accountable to the Project Coordinator and based at the NPCO, he/she will be responsible for the overall coordination of the irrigation aspects of the Component's activities planning, execution and quality management.

Tasks and responsibilities

- Guide the planning, development and implementation of the water resources management and NRM activities, their link and correct phasing as an integral part of the watershed approach water centreed planning;

- Coordinate the water resources management and the NRM aspects of the Project at National Level with the Zobas;
- Support the Project coordinator, to coordinate and unify the AWPBs from the Zobas into the National one;
- Closely work with and support the MoLWE as well as MoA in the planning and execution of their respective activities; and
- Closely work with the Technical Assistant assigned for the Component.

Qualifications and Experience

- A Bachelor or higher degree in water resources planning and watershed management;
- Extensive experience on water resources planning and watershed management;
- Proven skills in technical coordination.as well as familiarity of working with the MoLWE and MoA;
- Computer literacy is a prerequisite, as a very good command of spoken and written English
- Awareness and on crosscutting issues of gender, youth, and poverty targeting

Component 1 Technical Specialist (Irrigation Engineer)

Duties and reporting lines

Accountable to the Project Coordinator and based at the NPCO, he/she will be responsible for the overall coordination of the irrigation aspects of the component's activities planning, execution and quality management.

This position will be mirrored at Zoba level.

Tasks and responsibilities

- Guide the planning, development and implementation of the irrigation development activities and their link and correct phasing as an integral part of the watershed approach water centreed planning.
- Coordinate the irrigation activities at National Level with the Zobas.
- Support the Project coordinator, to coordinate and unify the AWPBs from the Zobas into the National one;
- Support the organization and planning of establishing/strengthening WUAs.
- Closely work with the Technical Assistant assigned for the component.

Qualifications and Experience

- A Bachelor or higher degree in irrigation or agricultural engineering;
- Extensive experience on irrigation development and irrigated agriculture, including capacity building of WUAs;
- Proven skills in the civil works contract management and technical coordination.as well as familiarity of working with MoA;
- Computer literacy is a prerequisite, as a very good command of spoken and written English
- Awareness and on crosscutting issues of gender, youth, and poverty targeting.

Component 2 Technical Coordinator (Agronomist)

Duties and reporting lines

Under the responsibility of the National Project coordinator, the technical coordinator will be based at the NPCO and be overall responsible of the Component's activities planning, execution and quality.

This position will be mirrored at Zoba level.

Tasks and responsibilities

- Guide the planning, development and implementation of the Component 1ctivities and their link and correct phasing under a territorial and landscape management approach.
- Coordinate the Component 1t National Level with the Zobas.
- Support the Project coordinator, to coordinate and unify the AWPBs from the Zobas into the National one;
- Support the organization and planning of the FFS programme roll-out.

Qualifications and Experience

- A Master's Degree in agricultural agronomy or agricultural science;
- Extensive experience on agriculture, including knowledge on agro-pastoralism;
- Proven skills in the management and coordination of agricultural/agronomic initiatives and Projects within the MoA;
- Computer literacy is a prerequisite, as a very good command of spoken and written English
- Awareness and on crosscutting issues of gender, youth, and poverty targeting.

Component 2 Technical Specialist (Agricultural Research/Extension)

Duties and reporting lines

He/she will be responsible for the technical quality implementation of the sub-component, and it links and phasing between implementing state-agencies.
He reports to the Component Coordinator.

This position will be mirrored at Zoba level.

Tasks and responsibilities

- Support link between the Subcomponent 1ctivities in the Zobas, and at national level
- Support communication and linked work between different state implementing agencies for the correct implementation of activities:
  - NARI, AED and National tools workshops;
  - NAPHL, health clinics and AED;
  - AED, NARI and RSD for seed multiplication;
  - Support and actively participate on the planning and design of the FFS and technical material
- Joint work with the responsible of Subcomponent 2.1/2 technical specialist and under the overall supervision of the Component responsible, on a correct territorial and landscape approach implementation and phasing;
- Joint work and collaboration with other NPCO specialists on the linked activities and areas for value addition and agricultural service providers.

Qualifications and Experience

- A Bachelor or higher degree in agricultural agronomy or agricultural science;
- Extensive experience on agriculture and research, including knowledge on agro-pastoralism;
- Proven management skills inside NARI;
- Computer literacy is a prerequisite, as a very good command of spoken and written English;
- Awareness and on crosscutting issues of gender, youth, and poverty targeting.

Component 2 Technical Specialist (Agri-business Expert)

Duties and reporting lines

Reporting to the IADP coordinator, the Component 2.3 Technical Specialist will be in charge of: (i) piloting of Component 2 intervention and upscaling of its results, (ii) innovations and capacity development enabling agribusiness profitability, (iii) promotion of value addition of prioritized commodities. On ground, the Specialist will work closely with the agri-business Coaches.

It will be assessed at MTR, if this technical expertise is needed at Zoba level, in which case staff may be recruited.

Tasks and responsibilities

- Guide the planning, development and implementation of the subcomponent 2.3
- Support the Project coordinator to unify the AWPBs from the Zobas into the National one, develop synergy with the Component 2.1/2 according to market chain approach
- Coordinate the subcomponent 2.3 implementation at National level with the Zobas,
- Structure learning (innovations included) and capacity building efforts related to marketing chain, agribusiness development and value addition promotion
- Manage the international technical assistance and national trainers
- Establish working groups to document, develop and improve the POs and SMEs business models, BDS, as well as marketing chain and value addition approaches (under the international TA support)
- Manage the selection of POs to be supported by the project
- Provide specific support to youth and women marketing POs and SMEs start-up
- Coach and monitor the piloting of aggregation and processing centres
- Identify and launch the strategic studies supporting the implementation of Subcomponent 2.3 (market opportunity analysis, pricing system, etc.)
- Organize international and domestic exchange visits
- Contribute to reports drafting, M&E KM, communication activities

Qualifications and Experience

- A Master's Degree in marketing, accounting, or agronomy
- Extensive experience (more than 10 years) on marketing, agribusiness, POs and SMEs development, BDS, rural finance
- Proven skills in the management and coordination of agricultural/agronomic initiatives and Projects within the MoA;
- Computer literacy is a prerequisite, as a very good command of spoken and written English

Component C Technical Coordinator (Capacity Building Officer)

Duties and reporting lines

The officer will assume responsibility for Component C.1, in particular development of a comprehensive Capacity Development Plan addressing all the needs of Project stakeholders, including organizations, institutions and individuals, at all levels of implementation. S/he reports directly to the PC.

Tasks and responsibilities

- Support all Project actors in identifying institutional capacity building needs and develop detailed and precise action plans on how to ensure this;
- Develop a detailed, long-term capacity development plan focusing on the areas of capacity strengthening needed per implementation agency and assuring that individuals are assigned accordingly.
- Support active learning and dissemination of innovations and knowledge amongst AED and NARI to build the capacity of extension workers on ground.

- Identify best practice from abroad and support its implementation, for example through nominating NARI staff to participate in international fora on IPM.

Qualifications and Experience

- Masters level degree in English literature, education or a related field.

Planning Team (NPCO)

M&E Senior Officer – Team Leader

Duties and reporting lines

IADP will develop a results-based M&E system embedded into PSD/NPCO/ZPCO, at National and Zoba levels, for decision-making and learning. The M&E system will track, store, process and analyze the data related to implementation in order to measure the progress of the programmed activities and provide with useful information for the project management. The M&E functions will also include the following cross cutting issues: KM, social inclusion, capacity building, environment, and nutrition.

Under the supervision of the IADP Coordinator, the M&E Senior Officer will be responsible for: (i) M&E tools development, (ii) implementation of planning, targeting, monitoring, evaluation and reporting related activities, (iii) training and coaching of the team in charge of M&E, (iv) mainstreaming of cross cutting issues, (v) field visits to check on result achievement.

Tasks and responsibilities

The senior M&E officer at the NPCO will lead the planning and monitoring interventions of the Project, including managing the staff involved in these activities at both NPCO and ZPCO levels, as well as ensuring timely and results-oriented planning and implementation of the Project. He/She will perform the following specific tasks:

- Promote the adoption of a results-based management: streamline approaches and tools and provide training and coaching to M&E team;
- Ensure the alignment and contribution of the M&E system to the GoSE and IFAD requirements (DSP monitoring system, ORMS, COSOP M&E, etc.)
- Orient and support the integration of cross cutting issues activities (KM, social inclusion, capacity building, environment, and nutrition) into project's interventions
- Design baseline, mid-term and end-line assessment methodologies, including data capture at outcome and impact levels
- Fine-tune and simplify into Excel-sheets the project result forecast (rule of indicator calculation) developed in the theory of change, logical framework, COSTAB, and EFA
- Develop and standardize templates for activity tracking as well as result consolidation and reporting based on the IADP logical framework indicators; and train implementers in their use
- Ensure the information flow from local implementers, ZPCOs, up to the IADP Coordination
- Take the necessary measures to ensure that the M&E will be participatory and the indicators disaggregated as much as possible by gender and age
- Manage the AWPB preparation process and annual targets setting
- Guide the process of project progress and performance assessment, evaluate the relevant indicators and ratios of effectiveness and efficiency, match and follow-up the financial disbursement against the output and outcome achievement, adjust certain targets if required
- Identify capacity-building needs; implement training and coaching of key M&E staffs and implementers, including the beneficiaries especially for the participatory aspects (stakeholders' feedback)

- Organize consultancy missions to support technically the M&E team in term of tools development, training, and project result trend analysis
- Draft progress, results, and closing reports; and provide the necessary and essential information to the steering committee, MoA, MoF, IFAD, ZPCOs, producer organizations, and other partners.

Qualifications and Experience

- Master's Degree in statistics, or economics, agronomy, veterinary.
- At least, 7 years of experience in M&E, KM&L, and capacity building
- 3 years of relevant experiences in terms of information management, data processing and analysis
- Excel and IT skills
- Result focused, planner, organizer, and good writer
- Must possess excellent communication skills, both written and oral in English language

M&E Assistant

Duties and reporting lines

Under the supervision of the M&E Senior Officer, the M&E assistant will undertake: (i) day to day work of information management: data collection, storage, consolidation, processing, analysis, and sharing, (ii) organizing surveys: baseline, mid-term and end-line assessments, (iii) report writing.

Tasks and responsibilities

- Implement the forecast system of outcome and impact on the target groups (result achievement prediction)
- Set-up and run the data consolidation mechanism at national level, automate data processing related to the most relevant/used indicators
- Organize baseline, mid-term and end-line assessments, including data capture at outcome and impact levels
- Contribute to the AWPB preparation process
- Collect and consolidate monitoring data from ZPCOs at national level
- Set-up an appropriate data storage and archive, update regularly and secure the data back-up
- Export data, information, results into maps (GIS)
- Analysis result achievement trend, and share information needed for management, KM, and learning
- Contribute to reports drafting, in particular provide necessary inputs, tables, graphics, etc.
- Support those responsible for components and sub-components to prepare monitoring dashboards,
- Carry out regular field visit to support the ZPCO M&E & Km officers in term of templates for activity tracking as well as result consolidation and reporting use, data collection and processing, and project progress assessment.

Qualifications and Experience

- A Bachelor or higher degree in computer science, economics, or statistics.
- At least, 5 years of experience in M&E
- 3 years of relevant experiences of information management, data processing and analysis
- Excellent skills of coding, database management, GIS, Excel and IT

Planning Officer

Duties and reporting lines

The Planning Officer reports to the Senior M&E Officer and assumes responsibility for:

(i) custodian of the IADP 3 year planning cycle document, (ii) AWPB development (including forecast of contribution to outcome achievement and AWPB integration to MoA budget and fund mobilization), (iii) periodic evaluation and analysis of the outcome and impact achievement

Tasks and responsibilities

- Conduct 3 year planning cycle preparation and update processes
- Prepare the catalog of related indicators: definition, calculation method, etc.
- Extract the AWPB preparation orientation from the 3 year plan, facilitate the setting up of annual output and outcome targets and ensure a logical linkage between all activities, lead the AWPB consultative and approval process
- Check budget availability with the financial controller, confirm with technical leads the priorities within each area
- Bridge MoA budget and IADP AWPB preparation process to secure the commitment of financial resource for the planned activities
- Follow-up activities and budget expenditure through the years, and take the lead on AWPB adjustments, including the non-objection process within Government and IFAD in this regard
- Carry out a participatory process of development and refinement of the results matrices (input, output and outcome) with all the actors of implementation
- Assess outcome and impact achievement, in participatory manner, with implementing partners and beneficiaries
- Lead the process of defining the content of activity reports, develop progress reports, MTRs, etc.
- Identify and launch the strategic studies supporting the implementation of the 3 components of the project
- Enhance the capacity of the Zobas and related Governance structures in planning and budgeting;

Qualifications and Experience

- Master's Degree in economics, statistics, agronomy, or veterinary.
- At least, 5 years of experience in planning
- 3 years of relevant experiences of M&E or information management
- Must possess excellent communication skills, both written and oral in English language

Targeting, Gender and Social Inclusion Officer

Duties and reporting lines

The officer supports all the relevant technical officers in planning of their interventions, including making sure that issues of targeting, gender, social inclusion etc. are adequately handled in the Project.

Tasks and responsibilities

- Ensure effective targeting of the Project's beneficiary groups in accordance with the defined Project targeting criteria and the Gender and Social Inclusion (GESI) strategy
- Contribute to the planning, monitoring and reporting of the Project and integrate GESI throughout the Project cycle in accordance with the GESI, youth and nutrition action plan
- With the technical support of the expert on nutrition assessment and education, plan, organize, conduct and report on baseline, mid-term and end-line surveys on GESI, youth and nutrition as defined by the Project workplan and activities
- Explore the collected and analyzed data particularly in relation to define access to economic and employment opportunities for women and youth and better nutrition outcomes; this information will constitute the base of evidence for planning, monitoring and evaluation for achievement of GESI and nutrition outcomes;

- Identify, in collaboration with the M&E and nutrition specialists and the relevant institutional partners, a list of key GESI, youth and nutrition related indicators, disaggregated by sex, age and socio-economic status, to be included in the Project M&E plan;
- When and if necessary, assist the Project implementing partners to develop gender sensitive and gender responsive monitoring mechanism;
- Coordinate all Project activities related to GESI, youth and nutrition as defined in the Project work plan and budget;
- Identify gaps in GESI, youth and nutrition knowledge and capacity within the Project implementing team and partners and institutional counterparts limiting the successful implementation of Project activities and propose solutions to address these gaps;
- Based on the above assessment, support the organizing and delivery of trainings, including the identification of specific subject matter expects, including for the mobilization strategy and effective identification of target groups according to targeting criteria and outreach outcomes;
- Provide regular orientation and advise on GESI, youth and nutrition related activities to the Project implementing team and partners to achieve the proposed Project objectives and targets;
- Ensure good communication and dissemination of resource materials addressing GESI and nutrition and reflecting the activities performed within the Project;
- Facilitate policy dialogue on Project promoted issues on GESI, youth and nutrition within government and other relevant stakeholders;
- Document lessons learned and best practices in order to strengthen evidence-based in GESI and nutrition in the areas and beneficiary groups targeted by the Project
- Based on the Project collected evidence and lessons learnt, conduct desk review of existing policy documents and legal frameworks (legislations) to identify areas for improvement on GESI, youth and nutrition related issues, in collaboration with Government counterparts;
- When necessary, define ToRs for specific technical assistance, to ensure that GESI, youth and nutrition are effectively taken into account in all relevant Project activities capacity at local and national level and to contribute to knowledge on GESI, youth and nutrition at global level;
- Perform other works necessary for the successful implementation of Project activities.

Qualifications and Experience

- An advanced university degree (Masters or equivalent) in gender study / development studies / social science or in any relevant area is required OR a university degree (Bachelor's degree level) with a combination of 2 years of relevant professional experience in gender study / development studies / social science may be accepted in lieu of an advanced university degree.
- Five years of experience directly relevant to the area of gender and social inclusion as well as nutrition
- Extensive knowledge in gender and social issues in the context of Eritrea, including knowledge of national policies strategies and implementing institutions;
- Familiarity with IFAD targeting, GESI and youth policies and implementing guidelines is desirable.

KM&L Officer

Duties and reporting lines

The officer will implement the knowledge management and learning activities of the Project, aiming to analyze knowledge, improve, and generate knowledge for achievement of higher level results. The officer will ensure that relevant strategies are implemented in the Project, and work to build the knowledge base, its access to and use and re-use of existing knowledge and best practices and develop/promote a culture of learning and knowledge sharing.

Tasks and responsibilities

Implementation of the Knowledge management strategy

- Ensures that the KM&L and Communications strategic plans are incorporated into the Annual Work Plan and Budget and well executed
- Supports the M&E officer in analyzing data and documenting impact of the Project
- Documents best practices and lessons from the M&E data recorded
- Provides guidance to the M&E officers at ZPCOs

KM&L Monitoring and reporting

- Reports the activities on bi-annual basis to the National Coordinator
- Reviews and monitors the KM&L budget
- Prepares KM&L analytical reports
- Supports the M&E officers in impact assessment reporting

Management of knowledge activities, Dissemination of knowledge needs and SSTC

- Identifies knowledge needs of Project staff, implementing agencies and beneficiaries in collaboration with the M&E officers at NPCO and ZPCO level
- Organizes reflection meetings at NPCO, ZPCO, implementing agencies and beneficiaries level
- Supports the development and dissemination of knowledge and experience through enhanced communication, strengthened knowledge products and publications
- Works in collaboration with the Public Relations unit of MoA and the Ministry of Information to disseminate knowledge products and communications materials
- Identifies South-South exchange visits according to the knowledge needs and knowledge sharing purposes

Qualifications and Experience

-

Environmental Monitoring Specialist

Duties and reporting lines

The officer forms part of the Planning Team, reporting to the PC through the M&E Senior Officer. The officer is responsible for

Tasks and responsibilities

- Support all Project actors in identifying institutional capacity building needs and develop detailed and precise action plans on how to ensure this;
- Develop a detailed, long-term capacity development plan focusing on the areas of capacity strengthening needed per implementation agency and assuring that individuals are assigned accordingly.
- Support active learning and dissemination of innovations and knowledge amongst AED and NARI to build the capacity of extension workers on ground.
- Identify best practice from abroad and support its implementation, for example through nominating NARI staff to participate in international fora on IPM.

Qualifications and Experience • Environmental Sciences or similar.

Zoba Level (ZPCO)

Zoba Project Coordinator (ZPC)

Duties and reporting lines The Zoba Project Coordinator (ZPC) reports directly to the Zoba Governor, but engages with the NPCO PC for day to day matters. The ZPC is responsible for the overall coordination of planning, implementation, monitoring and evaluation activities of the IADP in the Zoba, and acts as the Secretary to the ZPCC.
Tasks and responsibilities • Manages the Zoba Project Coordination Office (ZPCO); • Coordinating project planning, implementation, management, reporting, monitoring and evaluation within the Zoba; • Ensuring that project activities are results-oriented, efficiently executed and implemented in line with guiding documents and procedures; • Organizing and facilitating meetings of the ZPCC, monitoring visits from Asmara, IFAD supervision missions etc.; • Approving expenditures and signing contracts on behalf of the Zoba; • Submitting Statements of Expenditures in a timely manner; and • Any other duties as assigned by the Governor.
Qualifications and Experience • A Bachelor or higher degree in computer science, economics, or statistics. • At least, 8 years of experience in managing agricultural or rural development projects • Computer literacy, communication skills and English at an operational level are requirements;

M&E, Planning, and KM&L Senior Expert

Duties and reporting lines The Officer will be based at the ZPCO (Zoba-level) and report to the ZPCO Coordinator. He/She will be in charge of: (i) 3 year planning cycle document at zoba level, (ii) day work of information management, (iii) capture of lessons learnt and dissemination of best practices.
Tasks and responsibilities • Conduct 3 year planning cycle preparation and update processes at Zoba level • Extract the AWPB preparation orientation from the 3 year plan, facilitate the setting up of annual output and outcome targets and ensure a logical linkage between all activities • Proceed data collection, storage, consolidation, processing, analysis, and sharing • Follow-up activities and budget expenditure through the years • Assess output and outcome, in participatory manner, with implementing partners and beneficiaries • Identifies knowledge needs of Project staff, implementing agencies and beneficiaries • Documents best practices and lessons from the M&E data recorded • Contribute to reports drafting, in particular provide necessary inputs, tables, graphics, etc. • Reviews and monitors the M&E, KM&L budget

Qualifications and Experience

- A Bachelor or higher degree in computer science, economics, or statistics.
- At least, 5 years of experience in M&E
- 3 years of relevant experiences of information management, data processing and analysis
  Excellent skills of coding, database management, GIS, Excel and IT

Social Inclusion, Mobilization and Home Economics Expert

Duties and reporting lines

The Officer will be based at the ZPCO (Zoba-level).

Tasks and responsibilities

- Coordinate all activities related to gender, community mobilization and home economics (including nutrition) at Zoba, Sub-zoba and community level;
- Coordinate and supervise the work of community mobilization officers, including the preparation of the terms of reference, facilitation of recruitment and monitoring of work/results;
- Ensure effective targeting of the Project's beneficiary groups at Zoba, Sub-zoba and community level in accordance with the defined Project targeting criteria and local implementing partners and in close collaboration with the targeting, gender and social inclusion expert at NPCO;
- Contribute to the planning, monitoring and reporting of the Project at Zoba, Sub-zoba and community level;
- Under the technical supervision of the expert on nutrition assessment and education, contribute to the planning, organization and implementation of the baseline, mid-term and end-line surveys on GESI, youth and nutrition at decentralized level;
- Provide regular orientation and advise on GESI, youth and nutrition related matters to the Project implementing team and partners at decentralized and community level
- When and if necessary, assist the Project implementing partners at Zoba, Sub-zoba and community level to develop gender and youth sensitive and responsive monitoring mechanisms;
- Lead needs assessments at decentralized level to inform programme development and implementation
- Identify gaps in GESI, youth and nutrition knowledge and capacity within the Project implementing team at decentralized level and support the NCO to address them;
- Based on the above assessments, supervise the preparation and delivery of training plans for Project ream, community organizations, leaders and/or focal points, including the identification of specific subject matter expects at decentralized level
- Ensure effective and regular liaison with local partners to facilitate the implementation of community activities;
- Analyze collected information at Zoba, Sub-zoba and community level and prepare summaries, briefing notes, implementation plans and roadmaps;
- Based on the analyzed information, prepare and implement a coordinated response to the needs of the communities;
- Ensure the integration of community mobilization activities into communication and advocacy campaigns and initiatives;
- Ensure that all the plans and indicators of the community mobilization team are realistically set and oversight their achievement;
- Analyze ongoing experience for lessons learned, best practices, and shares with Project management for use in knowledge sharing and planning future strategies

- Provide input for stories, articles and other resource material to communicate and disseminate the activities and achievements of the Project;
- Perform other duties as required.

Qualifications and Experience

- Bachelor's Degree or equivalent in Social Sciences, Gender related studies, Community nutrition or other relevant areas;
- 5 years of relevant experience, including 2 years of practical experience in a field related to community mobilization, community nutrition, gender and home economics or related area;
- Experience in community development, and civic engagement is essential;
- Proven experience in preparation of the methodologies, guidebooks, analytical reports;
- Previous experience with a multilateral or international technical assistance, particularly with IFAD funded Projects, or development organizations would be an asset;
- Fluency in English

Administration Team

To be developed.

Financial Controller and Accountant (NPCO and ZPCO levels)

To be developed.

Procurement Team

Senior Procurement Officer

Duties and reporting lines

The Senior Procurement Officer will work under the direct supervision of, and be accountable to, the Project Coordinator. The Senior Procurement Officer will be responsible for the entire procurement cycle from the identification of the need to the completion of the contract. The Senior Procurement Officer will provide support to the National Project Coordination Office (NPCO) in managing the entire procurement process and be ultimately responsible for the delivery of the entire procurement plan. He/She will supervise a procurement team consisting of three procurement assistants and endorse the preparation of the Procurement Plan to ensure compliance with IFAD requirements. In close coordination with different procuring entities of the project, he/she will be responsible in guiding all procuring entities in the conduct of procurement short of award to ensure timely and efficient implementation of the Procurement Plan. During contract implementation, he/she will provide authoritative technical support to implementing units in enforcing and monitoring timely compliance by suppliers/contractors/consultants with contract provisions in close coordination with different project technical specialists.

Tasks and responsibilities

Specific Functions

- Prepare, review and consolidate a detailed annual procurement plan in line with the directives of proposed and approved AWPBs and in accordance with the IFAD format, in consultation with the other functions of NPCO. In close coordination with end user units and project technical experts, ensure that proposed timelines are realistic.

- Provide project procuring entities with guidance on the conduct of procurement short of award to facilitate timely implementation.

- Ensure compliance by different project procuring entities with the timelines for the conduct of procurement activities provided in the Procurement Plan. For this purpose, he/she will be responsible in coordinating with Bids and Awards Committees of the different project procuring entities.

- Regularly update the Procurement Plan and seek IFAD No objection for upgrades to the Procurement Plan.

- In close coordination with end user units and project technical experts, provide technical assistance in the review and finalization of technical specifications for goods, bills of quantities and scope of work/specifications of the planned civil works, and terms of reference for consulting services to ensure that bidding requirements allow competition and will be conducted in a fair and transparent manner.

- Ensure timely conduct of procurement activities.

- Provide technical guidance to the NPCO in the evaluation of bids and preparation of Evaluation Reports to ensure that bid evaluation conforms to Instructions to Bidders and the IFAD Procurement Handbook.

- Where required under the applicable Letter to the Borrower/Recipient, submit all relevant documents to IFAD for No Objection.

- Overall responsible and accountable for maintaining a project wide procurement filing system.

- Prepare/review/update and consolidate the Project's Procurement Status and Contract Register/Monitoring Form.

- Provide technical assistance to project implementing units during pre-delivery and delivery inspection to check conformity of deliveries with bidding requirements.

- Acquire sufficient familiarity with General and Special Conditions of Contract provisions and other project specific bidding requirements in assisting different implementing units in contract management issues with awarded suppliers, contractors or consultants.

- Review and recommend draft contracts for signature by the Project Coordinator.

- Periodically review implementation of works, goods and services contracts to ensure compliance with procurement provisions and general and special conditions of contract, in close collaboration with the Project technical experts at all levels. Follow up and report on any observed discrepancies.

- Respond to inquiries from staff regarding scope of work/specifications requisitions, purchase orders, contracts and pricing information.

- Take part in the provisional and final acceptance of works including the preparation of the respective committees and the acceptance of the works/professional services/equipment delivered.

- Prepare and submit to IFAD a detailed training plan to train the Finance units of the ZPCOs on IFAD procurement requirements.

General/Stakeholders Engagement

- Recommend necessary adjustments in the procurement section of the Project Implementation Manual (PIM);
- Conduct field/site visits as part of procurement/contract monitoring effort;
- Ensure project actions are governed by the highest standards of personal and business conduct;
- Contribute to maintaining teamwork, discipline, sound work relationships and productivity;
- Participate in project events to maintain effective working relationship with stakeholders as well as other partners including government institutions; and
- Perform other tasks as may be assigned by the Project Coordinator.

Competencies

Functional Competencies:

- Possess competencies in government Procurement and office/contract management;
- Possess the ability to give sound advice on Procurement issues that would impact on the project's financial and physical performance;
- Good communication and interpersonal skills required;
- Strong personal management and communication skills;
- Excellent knowledge of MS Office, internet use and procurement databases.

Corporate competencies:

- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Highest standards of integrity, discretion and loyalty.

Qualifications and Experience

Education:

- Bachelor's Degree in Procurement/Supply Chain Management/Economics/Accounting/Finance or other relevant degree;
- Master's Degree in Procurement or any related field is an advantage;
- Professional qualification in procurement from an internationally recognised and accredited institution (i.e. CIPS).

Experience:

- At least 7 years of experience in procurement with the Government of Eritrea and/or international organizations, preferably with international development partners;
- At least 5 years' experience in effectively managing teams;
- Extensive knowledge of IFAD procedures is an advantage.

Language requirements:

- Fluency in written and spoken English.

Subject Matter Specialists

To support the NPCO, Subject Matter Specialists will be nominated from various internal MoA Departments – more than one may be appointed, to cover the wide range of technical aspects covered by the project. These will assume the below roles and responsibilities:

1) Act as a liaison person between the respective departments on day to day matters;
2) Provide technical support to the NPCO and ZPCO staff whenever called upon;
3) Provide critical review of reports, manuals, guidelines, etc.
4) Assess technical feasibility of interventions as proposed in the AWPBs;
5) Monitor and supervise activities on ground, in collaboration with the NPCO M&E team; and
6) Provide rapid and hands-on problem solving in the field when and as required.

About 10% of the subject matter specialists' time is expected towards the project. Experts may be related to livestock, dairy, beekeeping, irrigation, watershed management, agribusiness and cooperative development, etc.

ANNEX 3. DRAFT TORS FOR TECHNICAL ASSISTANCE AND STRATEGIC PARTNERSHIPS

Procurement

Senior Procurement Expert

A. General tasks and responsibilities

1. The Senior Procurement Expert will provide procurement support to both the NPCO Procurement Team and the procuring entities at Zoba level. General tasks and responsibilities include:

- Ensure all prior and post review requirements from IFAD are complied with in a timely manner;
- Ensure that goods and services financed have been procured in accordance with the FA and the provisions of the IFAD Procurement Handbook;
- Ensure that all the due tendering processes are adhered to: sufficient publications, strict adherence to deadlines, transparency in communications, publication of bid results, etc.;
- Establish a simplified procurement tracking system to monitor project procurement activities and train staff to track procurement, to analyze recurrent weakness and strengths and to develop and implement mitigation measures;
- Provide direct support and hands-on technical assistance to the procurement staff;
- Support handling of project procurement related complaints, including logging and recording, notifying IFAD, and preparing responses to complaints, including in the preparation of qualitative justifications for settlement of disputes with consultants and suppliers;
- Oversee preparation and consolidation of inputs to the annual procurement plan in line with the AWPB;
- Develop ways of streamlining procurement function to efficiently procure regularly requested and recurrent goods and services such as training venues, catering for trainings, hotels and accommodation etc.;
- Ensure acceptable record keeping in procurement with complete procurement files for each procurement from start to contract finalization. Maintain all procurement records in a form appropriate for regular auditing and spot checks by supervision missions; and
- Carryout other related activities as and when requested by the NPCO.

B. Required Qualification, Skill and Experience

- Bachelor's Degree in Procurement/Supply Chain Management/Economics/ Accounting/Finance or other relevant degree;
- Master's Degree in Procurement or any related field is an advantage;
- Professional qualification in procurement from an internationally recognised and accredited institution (i.e. CIPS).
- At least 10 years of experience in procurement with international organizations, preferably with international development partners;
- Fluency in written and spoken English;
- Prior experience with similar assignments;
- Extensive knowledge of IFAD procedures is an advantage.

C. Deliverables

2. The Senior Procurement Expert will submit monthly reports summarizing the activities undertaken and results achieved, as well as a final report at the end of contract.

D. Reporting Line/Communication

3. The Senior Procurement Expert will report to the Senior Procurement Officer and to the Project Coordinator.

E. Duration of the Assignment

4. The duration of the assignment will be for one year, but renewable depending on the satisfactory performance.

Junior Procurement Expert

A. Summary of Duties and Responsibilities

5. The Junior Procurement Expert will assist the Senior Procurement Expert in providing procurement support to both the NPCO Procurement Team and the procuring entities at Zoba level.

B. Required Qualification, Skill and Experience

- Bachelor's Degree in Procurement/Supply Chain Management/Economics/ Accounting/Finance or other relevant degree;
- Master's Degree in Procurement or any related field is an advantage;
- Professional qualification in procurement from an internationally recognised and accredited institution (i.e. CIPS).
- At least 5 years of experience in procurement with international organizations, preferably with international development partners;
- Fluency in written and spoken English;
- Prior experience with similar assignments;
- Extensive knowledge of IFAD procedures is an advantage.

C. Deliverables

6. The Junior Procurement Expert will submit monthly reports summarizing the activities undertaken and results achieved, as well as a final report at the end of contract.

D. Reporting Line/Communication

7. The Junior Procurement Expert will report to the Senior Procurement Expert and to the Senior Procurement Officer.

E. Duration of the Assignment

The duration of the assignment will be for one year, but renewable depending on the satisfactory performance.

Financial Management

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Nutrition Assessment and Nutrition education

- Provide technical guidance for the implementation of the baseline, mid-term and end line surveys on nutrition (KAP and Women Dietary Diversity Score- WDDS)
- Advice on the selection of relevant nutrition indicators for the Project reporting system
- Provide technical support to the adaptation of training material, delivery and follow up on trainings on nutrition and nutrition education for the Project implementing partners and national counterparts
- Review all training material, including for Framers Field Schools and other training workshops for extension services and communities, on nutrition and nutrition education to adapt them to the local context

- Support the design and organization of the delivery mechanisms for nutrition related activities (including appropriate and efficient targeting of nutritionally most vulnerable groups)
- Perform other duties as requested by the targeting and GESI expert in order to ensure successful implementation of the nutrition activities;

QUALIFICATION AND EXPERIENCE

- An advanced university degree (Masters or equivalent) in nutrition or public health or in any relevant area is required OR a university degree (Bachelor's degree level) with a combination of 2 years of relevant professional experience in nutrition assessment/ nutrition education/ community nutrition may be accepted in lieu of an advanced university degree.
- Five years of experience directly relevant to the area of nutrition assessment and/or nutrition education;
- Demonstrated experience of designing and conductive quantitative evaluations in the field (across any subject area), an added advantage
- Extensive knowledge in gender and social issues in the context of Eritrea, including knowledge of national policies strategies and implementing institutions;
- Familiarity with IFAD targeting, GESI, youth and nutrition policies and implementing guidelines is desirable.

Senior Natural Resources Management and Irrigation Engineer

F. Summary of Duties and Responsibilities

1. The Senior NRM and Irrigation Engineer will be based in the MoA Office, and report to the National Project Coordinator (NPC). He/she will be responsible for coordination and provision of technical backstop on all NRM and irrigation related issues to the MoLWE and MoA at the national and Zoba offices.

2. He/she will play the lead technical role to enrich (in case there are gaps) and make effective use of the NRM and irrigation technical guidelines and implement related capacity development processes at all levels. In particular, he/she will provide guidance and technical support to the two technical staffs at the national level, i.e. (i) Water Resources and NWM specialist and (ii) Irrigation Engineer, as well as the corresponding technical staffs at the Zoba level, to ensure that all interventions are identified, planned, designed, implemented and managed maintaining quality standards and in a timely manner.

G. General tasks and responsibilities:

- Provide advisory support towards making effective use of and/or preparing appropriate technical tools for effective and efficient implementation of water resources management, the NRM and the irrigation development interventions. The later include, not limited to, preparing engineering technical guidelines and user-friendly (simplified) field manuals as needed.
- Provide training (ToT) and capacity building (incl. mentoring) support to the national and Zoba level engineering staff to identify/select, prepare feasibility studies, detailed designs as well as supervision of all NRM and irrigation development interventions.
- Review, analyze and provide technical guidance on all engineering related papers, studies, designs and reports and advise the PC in making appropriate decision.
- Support the national and Zoba engineers to prepare training programs, access and make effective use of appropriate engineering guidelines, manage contracts and produce quality reports.
- Provide rural infrastructure related technical, methodological and managerial advisory support to the NPC.

- Provide technical support and mentoring service to the Water Resources Management and NRM specialists as well as the Irrigation within the NPCO.
- Liaise with the MoLWE and MoA in perusing the activities in their respective Sub-components.
- Assist the PC to produce rural infrastructure engineering related reports and communication papers as required. This include the support to improve and strengthen the monitoring capacity of the PCU and monitoring missions.
- Ensure sustained communication is established with the Zobas as well as between the professional at national level on technical matters.
- Pay periodic field visits to Project sites and provide practical solutions to critical engineering problems faced on the ground.
- Prepare periodic reports and undertake critical review of all engineering related papers, documents.
- Carryout other related activities as and when requested by the NPCO.

H. Required Qualification, Skill and Experience

- MSc/BSc degree from an accredited college or university in Water Resources, Irrigation, Civil or Agricultural Engineering.
- Minimum of 10 years' service after BSc or five years after MSc degree or three years after PhD in relevant fields with proven experience in planning/design, implementation, monitoring and evaluation of water resources planning and NRM activities as well as small-scale irrigation development as an integral part of conservation based and holistic watershed management intervention.
- Extensive experience in managing small-scale civil works contracts involving significant community participation and in kind contributions.
- Flexibility to travel to rural areas and work with rural communities of diverse origin.
- Experience in terms of IWRM modeling, in particular with the SWAT model (Soil and Water Assessment Tool).
- Must possess excellent communication skills, both written and oral in English language, the ability to represent on high-level meetings including good interpersonal skills with team spirit.
- High degree of initiative, integrity and accountability.
- Computer application skills.

I. Deliverables

3. The Senior Engineer will submit monthly, quarterly and yearly reports summarizing the activities undertaken and results achieved in relation to annual plan and M&E framework prepared for the Component 1. She/he will follow up together with the Water Resources/NWM expert and the Irrigation engineer the planning, implementation, effective delivery, timely reporting and verification of achievements based on result oriented implementation process.

J. Reporting Line/Communication

4. The Senior Engineer shall report to the NPC, but can also provide a report to the IADP- M&E.

K. Duration of the Assignment

5. The duration of the assignment will be for one year, but extendable depending on the satisfactory performance.

L. Work plan

6. The National Senior Rural Infrastructure Engineer will enhance the development of different action plans and Balance Score Card within the framework of the Project development goal.

M. Responsibility of the employer

7. The employer will avail office furniture, office Equipment, vehicles, communication and other materials required by the Senior Engineer.

N. Place of Work

8. Asmara with frequent travel to Project regions and words.

O. Remuneration

9. Packing will include international travels, residential provisions, basic salary, DSA while traveling outside of Asmara details to be determined.

Agribusiness International Company

Context

Strengthening market chains and developing agribusiness (SubComponent 2.3) represent a new area of work for MoA. This will require significant structured learning (innovations included) and capacity building efforts, which should be supported by an international (or regional) technical assistance.

The technical assistance will: (i) share relevant international agribusiness development and marketing knowledge, (ii) customize the related models, approaches, and tools to the Eritrean context; (iii) draft an agribusiness manual; (iv) set-up, train and mentor the IADP agribusiness team.

Main Tasks

- Analysis the Eritrean context, experience in the field of agribusiness development and marketing, and stock take the related challenges
- Facilitate the preparation of the agribusiness development road map
- Support the set-up of the agri-business trainers and coaches
- Transmit international experiences and best practices in agribusiness, contract farming and marketing to the agribusiness project team, in particular staff from AED and the NPCO
- Organize international exchange visits, knowledge customization and dissemination
- Draft the agribusiness manual, including case studies related to market and investment opportunities analysis, analysis of cooperatives and SMEs models, business plan preparation and follow-up, business management coaching, financing of business plan, PPP, contracted farming, etc. (depending on the approaches and tools required by the road map)
- Organize training, coach and mentor the IADP agri-business team according to a learning by doing approach
- Provide strategic support to project implementers in term of agribusiness development and marketing
- Capitalize IADP agribusiness and marketing results and support case studies drafting for result replication and upscaling

Profile of International Technical Assistance

- Agency, Centre, Consultancy Company, or team of consultants
- Has undertaken at least 7 assignments related to international assistance in market chain and agribusiness development, BDS, etc. in the last 5 years
- Experience in capacity development and knowledge management is an asset

Duration of assignment

The Agribusiness International Technical Assistance will be a combination of desk/distance work and in-country missions during the first 2 years of project. The total duration of intervention will be 8 months.

Advisory Services Support

10. **Food and Agriculture Organization (FAO)** is a potential implementing agency for activities related to Project monitoring and data collection (institutionalizing tools such as RIMA and KPI in MoA and conducting these analyses on behalf of the Project), as well as in the institutionalization and roll-out of the FFS and AFS approach and activities. The implementation of SubComponent 2.1 would be coordinated with the ongoing FAO Technical Cooperation Programme (TCP) with Government, related to banana and citrus, as well as the MoA/EU/ILRI initiative on dairy value chain development. FAO and World Food Programme (WFP) are developing a resilience strategy for Eritrea in partnership with the MoA, Ministry of Marine Resources (MMR) and MoLWE. UNDP, in partnership with FAO, will implement a USD 40 million programme in agriculture to be financed by EU, which will be an opportunity to develop synergies. In addition, strategic partnerships with regional/international research institutions will be established as required.

11. NPCO should request FAO to develop a detailed proposal and budget for development of activities, to be agreed upon in principles by both MoA and IFAD. After this, FAO will go through its own Project approval procedures to develop the so-called PRODOC. This document will lead to a financing agreement to be signed by MoA, following regular Government approval processes. It will be established if funds will be transferred directly to FAO from IFAD, or if this will pass through GoSE sources.

12. Several areas have been identified where Government requires technical support to build capacity within MoA and to institutionalize approaches across the extension system. FAO is a potential partner to support Government on this, which could include technical assistance and/or implementation of part of the activities related to:

a. Strengthening data collection systems including measurement of resilience and other development impact indicators: MoA is currently implementing projects to strengthen their data collection systems to be able to report to the Comprehensive Africa Agriculture Development Programme (CAADP) /Malabo Indicators, agreed upon under the African Union, as well as working on a project, in collaboration with FAO and WFP to improve field level data collection on resilience indicators, under the Resilience Index Measurement and Analysis. This work needs continued support and roll-out.

b. Farmer and agro-pastoralist field schools. While GoSE in principles have agreed to work to continue the demand-driven and participatory reorientation of extension and advisory services, technical support will be required to set up and roll-out the training Programme, especially in relation to Training of Trainers. FAO is currently supporting the EA FS hosted by AFAAS and it should be explored, through dialogue with the parties, who is better positioned to carry out which activities, and which type of partnership modalities can best support efficient project implementation (e.g. direct contracting of AFAAS or subcontracting of AFAAS by FAO, etc.)

c. The Ministry needs to build institutional capacity on mainstreaming nutritional aspects into their work; this could be training on the Knowledge, Attitude and Practices (KAP) survey and other food-based measurement methodologies. This will also be important for baseline and end line survey surveys of the project.

CGIAR partnerships

13. The Project will support AED and NARI to establish partnerships with relevant CGIAR institutions in the regions to strengthen technical knowledge and capacity. This could be for example exchange visits, participation in international workshops and seminars, in-country visits by technical experts and researchers, publication of analysis. Jointly with NARI, AED will actively disseminate knowledge and existing guidelines, possibly exchange visits. The Capacity Development Officer, jointly with AED and NARI officers will actively support the institutions to build this capacity. The FAO would be responsible of organizing, linking and identifying knowledge needs between AED and NARI with relevant CGIAR institutions to strengthen technical knowledge and capacity.

Land use planning support

14. Land use planning will form part of the capacity building activities to further institutionalize GIS and remote sensing tools into the regular MoWE and MoA processes for watershed rehabilitation. While some initial activities were undertaken under NAP, with the support of IFAD, in this regard (see Table 20 below), it is expected that IFAD will field a technical mission to determine the options, needs and details of a potential international partnership related to the use of GIS and remote sensing. Based on this, specific TORs, will be designed, potential partners identified/asked to submit calls for proposals, possibly under an institutional partnership with IFAD or MoA. Once the partnership is in place, the institution will engage with relevant Government partners and develop a detailed action plan for capacity building and institutionalization of the approaches.

Table 20: Previous experience on GIS partnerships in Eritrea

NAP proof-of-concept International Centre for Agricultural Research in the Dry Areas (ICARDA) study of Zoba Debub: use of remote sensing and GIS to identify suitable sites for various watershed management and water harvesting interventions A framework for the Project development was formulated during Oweis visit to IFAD in Rome in 2009, following a mission to Eritrea by IFAD in May 2009. The framework suggested that agricultural development be implemented in the context of integrated watershed management approach. A group of interventions in water, soil, crops, seed, etc., were described to respond to available natural resources, environmental limitations and priorities of the country. The framework was communicated to the Eritrean government and approved. IFAD requested ICARDA to help the design team for implementing the conceptual framework in the Project. An agreement was signed between ICARDA and IFAD to study one Zoba (Debub) to conduct GIS characterization and potential water harvesting interventions identify potential watersheds, select watershed(s) in which NAP can undertake development initiatives and recommend appropriate soil and water interventions. A GIS/land management consultant visited the Zoba Debub in May-June 2010 and collected the needed data and required information for the watersheds characterization. Meetings with MoA officials were conducted. Also a field visits to various parts of the Zoba Debub was made with meetings with associated staff in the Zoba including H.E. the governor Mr. Hussain Mustafa. This was followed by a visit of IFAD and associated people from Eritrea to ICARDA in July 2010. Draft Maps of slope, vegetation, drainage systems, etc. were developed and communicated by ICARDA GIS unit to IFAD and the Eritrean side. Finally site suitability maps were prepared and delivered.

ANNEX 4. BACKGROUND ON FARMING SYSTEMS IN ERITREA

1. Eritrea is divided into six agro-ecological zones representing two rainfall regimes, summer and winter. The country has a very diverse topography and altitude that ranges from 60 meters below the sea level (in the Coastal plains) to more than 3 000 meters above sea level in the Central and Northern highlands. This results in three major agro-ecological zones: the Western Lowlands, the Central and Northern Highlands (and Midlands), and the Eastern Lowlands (also referred to as the Coastal Plains). The agro-ecological zones are divided into sub-humid highland and midlands, arid highland, moist highland, moist lowland, arid lowland and semi desert.

2. The summer rains are concentrated mainly in three months from July to September and they affect the central highland and the western lowland areas. The winter rains typically occur from November to March and affect coastal areas and the eastern and southern escarpments[20]. Water is scarce and scattered in the majority of the country with average rainfall ranging 200-500 mm in the arid and semi- arid areas (Eastern Lowlands and Coastal Planes), and 500-800 mm in moist areas (highlands and western lowlands). Given the more favorable conditions, more than sixty percent of the Eritrean population lives in the cooler and more humid highlands where the high density affects the access and distribution of land.

3. Almost 60% of the population in Eritrea is rural, with a significant amount of women and women headed households working in agriculture. Most farmers practice mix-farming, and both crops and livestock are usually used for double purpose: food and fodder for crops; milk, draught and meat for animals.

Land tenure and land availability

4. Land tenure systems and land availability varies from agro-ecological zones and Zobas. The intention of traditional land redistribution models is to allocate community members equal shares. Rangeland areas are mostly communally grazed. Traditional measures for preventing environmental degradation include prohibitions of tree-cutting, closure of designated areas, some of them with controlled forage cut and carry.

5. In the highlands, land availability is an important restriction due to high population density, being the average land holding of 0.2 ha and with a 7 years rotation system (malessa system) between community members. This reduces the interest in long-term and sustainable management practices and investments such as planting trees and putting in place soil and water conservation structures. In the lowlands, land availability and access is not a major constraint as it is less densely populated. Farmers have the right to own a piece of land from their village, and last a lifetime (dessa system). The average size is also bigger and varies from 0.75-5 ha. However, soil and climatic conditions are more restrictive than in the highlands, with higher temperatures and lower rainfalls (up to 500 mm) being farming and living conditions more difficult.

[20] Eritrea's Five Years Action Plan for GGWI, FAO. 2012.

Table 21: Descriptive statistics per Zoba

Geological zone / Zoba	Number of Sub-zobas, Kebabis, villages	Rural population / number of households	Members per household	Agro ecological zone	Cultivated area (ha)	Main Crops	Livestock Pop (c=cattle; g=Goats; S=Sheep)	Irrigated areas (ha/ % of cultivate land)	Irrigated system	Ha /hh
Highlands/midlands										
Debub	12/ 258/ 886	568,935/ 126,430	4.5	Moist-midland (500-700 mm)	163,998	Sorghum, finger millet, barley, wheat, maize, potatoes, Horticulture (onion, tomato, pepper, cabbage, lentil)	C:490,093 G:706,409 S: 614,069	5,458 (3%)	Furrow and some drip	0.25
Maekel	7/ 61/ 81	184,162/ 41,855	4.4	Moist-Highland (500-700 mm) Sub-humid (700-1100 mm) Part of North Red Sea	23,663	Wheat, teff, barley, maize, potato, Horticulture (tomato, pepper, onion, faba bean, swiss chard)	C: 40,505 G:23,556 S:149,927	2,432 (10%)	Furrow and some drip	0.20
Western lowlands										
Gash-Barka;	16 / 205 / 871	618,613/ 134,481	4.6	Moist-lowlands (500-800 mm) semi-arid lowland (200-500mm)	176,406	Finger and pearl millet, sorghum, sesame tropical fruits and horticulture (moist lowland)	C: 917,334 G:1,745,784 S: 675,268	11,857 (7%)	Furrow basin drip and some border	1.31
Anseba	9 / 92 / 373	330,617/ 67,473	4.9	Arid lowland (200-500 mm)	55,664		C: 218,923 G: 620,023 S: 124,300	1,714 (3%)	Furrow, some drip	0.82
Eastern Lowlands										
Semienawi Keyih Bahri (North Red Sea)	10 / 97 / 330	57,198/ 10,729	5.3	Semi-dessert (-200mm)	27,999	Sorghum, millets	C: 178,532 G: 994,596 S: 462,333	0 (0%)		2.59
Debubawi Keyih Bahri (South Red Sea)	4 / 27 / 72	249,461/ 51,971	4.8		308		C: 82,060 G: 571,417 S: 103,047	175 (57%)	Spate and furrow	0.01
Total *	58	2,008,986 /433,002	4.8				C:1,927,457 S:2,128,944 G:4,661,785			

Source: Various. Note: Total population of Eritrea = 3,706,265 (2015)

Crop production

6. Rained subsistence farming accounts for more 95 percent of the cultivated land, with low input and output. Almost no soil or water conservation practices are used, being soils highly degraded. Agriculture is mainly practiced with man or animal draught power, being the most common the use of oxen. Normal practices are plowing, introducing animal manure to fertilize, manual weeding and harvesting. In some cases, where there is an irrigation scheme, farmers will also do the raised beds using hoes. Tools are mainly locally produced with some design flaws or poor maintenance, lowering the quality of tools and hindering agricultural practices. Most of farmers use their own seeds for sowing, not having access to improve seeds and neither developing[21] an improve seed system. The MoA has developed an improved seed multiplication system and distribution, but there are still many constraints related to seed quality and distribution logistics. There are no exclusive seed multipliers, and new ones are trained every year before the season, receiving a light training and no official developed protocol to follow. This results in an average national rejection rate of 80 percent. Only few farmers have regular access to improved seeds, particularly those close to seed multiplication clusters, state-own nurseries, those participating on a Project with the extension service, or with access to transport.

7. All these results in low average crop yields: around 0.60t/ha for cereals, 0.8 0t/ha for pulses and 0.35 t/ha for oilseeds[22]. Table 22 describes the average yields for the main crops per area, per overall agro-ecological zones. However, cereals, pulses, horticulture and oil crops production have greater productive potential. There is a big opportunity to increase yields by sustainable intensification of agriculture with climate smart agriculture (CSA) practices, agricultural diversification by increasing intercropping and crop rotation, soil conservation practices, improve seeds access and use, etc. What is more, staple cereals (sorghum, millet, teff, wheat and barley) and oil crops such as sesame are crucial for domestic food security and for imports substitution. Table 3 reflects the deficit and need of imports of staple products that could be substitute with a sustainable increase in production.

Table 22: Average yields of rain-fed crops per agro-ecological zone. Yield (kg/ha) per cycle

Crop	Agro ecological /climatic zones	
	Highlands and midlands (sub-humid to moist, 500-1100 mm)	Lowlands, mainly rain fed
	Kg/ha/cycle	Kg/ha/cycle
Sorghum	800	519
Teff	900	
Pearl Millet		333
Finger Millet		600
Sesame		201
Wheat	1000	
Barley	1400	
Maize	1000	
Pepper	7000	
Onion	14000	
Potatoes	939	
Chick peas	449	

Table 23. National food deficit/surplus estimations for 2017 and 2018.

Year	Population	Consumption (tn)	Prod (tn)	Def/Surp	Cov %
2017	3,638,873	436,665	139,912	-296,753	68
2018	3,706,265	444,752	275,881	-168,871	38

Source: MoA

8. Moreover, the introduction of adapted innovative tools and practices that help soil and water conservation (e.g. reduce or no-till tools for small-holders) can help farmers to reduce burden and introduce Climate Smart Agriculture approach. Moreover, introducing also

[21] For example with participatory plant breeding
[22] Average data from MoA 2017-2018 and FAO STAT.

improved organic compost[23] instead of fresh manure and IPM practices, can help boost production in a low input, low cost and ecological way.

Livestock production

9. Eritrea has an important number of livestock, having almost every rural family at least one animal, with more than 11 million animals in total. The main livestock are goats, sheep and then cattle, covering almost 9 million heads (Table 24). There are also camels, donkeys and poultry. Most of the livestock are local indigenous breeds, with indigenous breed improvement potential.

Table 24. Total number of livestock, estimation 2018

Livestock	Number of heads
Cattle	1,927,457
Sheep	2,128,944
Goats	4,661,785
Total	**8,718,186**

Source: MoA

10. For pastoralist and agro pastoralist there is little rangeland management plan, resulting in overgrazing and degradation of pastures. This situation has worsen in the past years due to an increase in land use for crop production. Grassland management systems need to be improved and stocking intensity needs to equate with land carrying capacity. Research and extension services should focused on the latter issues. So far, national research has concentrated more on commercial intensive farms than in extensive livestock production.

11. Livestock production is not specialized; animals are used for different purposes: draught, milk, meat, eggs and meat in case of poultry (Poultry is mainly backyard scavenging and small scale). Livestock feed is a limit resource both for intensive systems and for pastoralist. Most of the farmers do not grow high quality forage, but do mainly some cut and carry or some feed from crop residues. Later on, animals graze on cropland the residues left as fallow, removing the soil protection and organic matter, increasing land degradation and accentuating soil erosion.

12. Average milk production for cattle is low, varying from agro ecological zone: 1 liter for arid, semi-dessert areas; 2 liters in moist highlands and 4 liters per day in sub-humid midlands and moist lowlands. The variations between areas are mainly due to low forage availability and the total low productivity is also due to unimproved breeds and weak management practices.

13. Animal health services rely on decentralized health clinics; there is usually one for each Sub-zoba. Considering that there are approximately 35 villages per Sub-zoba, 1000 people per village and an average of 20 animals per households in the lowlands, these clinics are not enough. In addition, the health workers from the clinics do not normally go to the villages to vaccinate or treat the animals, treat animals that are brought to the clinics. This means that either they are close enough to the village to take their animals, or they have a mean of transportation, being unlikely that most of the farmers are able to bring their herd for treatment. For ruminants the most common illnesses are: Foot and Mouth Disease, Brucellosis, rinderpest, mastitis, etc.

Apiculture

14. Beekeeping is a significant agricultural occupation in Eritrea and can offer income and food to poor households, particularly to those with limited access to land. However, due to natural climatic conditions, beekeeping cannot be practiced as a profitable occupation in many areas of the country. On the other hand, the fact that there is low use of pesticides and low pollution in the country helps to create a good environment for bees. Apiculture industry still

[23] Humus compost and composted or aged manure release slowly but constantly nutrients for crops, while fresh manure can contain bacteria, and can have high microbial activity stimulated so strong that can burns up and volatilizes the nutrients.

faces some challenges, particularly for value addition, sub-products development and quality control of the honey.

15. There are two main beekeeping systems, sedentary and migrant with two main different type of hives: the modern hive (Langstroth) and the traditional hive. There is a significant participation of women in sedentary beekeeping and a significant participation of youth in migratory beekeeping.

16. Sedentary beekeeping is practiced for household consumption in the highlands and midlands and in Zoba Debub (midland) as a profitable production with two harvest per year due to the enabling climatic conditions. Traditional beehives are mainly used for household consumption production, due to their low cost and lower production (around 15kg/hive). Modern beehives are used by some small commercial beekeepers, with an average yield of 30 kg/hive.

17. Migrant beekeeping is practiced a season in the highlands (April-October) and a season in the north-east lowlands (December-April), searching for water and flowers. This system is mainly commercial due to its high transportation and material costs and labour (moving the hives), with average yield of 35 kg/hive. The modern hives are the most transportable hive type.

18. The MoA supports beekeepers with trainings and in some cases with materials. In general, beekeeping material for production and postproduction has to be imported, being expensive and easily unavailable. The modern beehives are costly, over 2000 Nakfa for a hive, and the printing wax is expensive and difficult to find. The Topbar model (more adequate for the sedentary production system) is less costly and easier to construct but can have around the same productivity than the Langstroth. This hive is now being tested and promoted in Eritrea. National manufacturers could easily produce it locally if there is sufficient supply of wood.

ANNEX 5. GUIDELINES FOR PARTICIPATORY EXTENSION AND RESEARCH

Introduction and rationale

19. Research and extension systems play a crucial role in agricultural and rural development. Together, they can help develop agriculture, bring and disseminate appropriate technologies and innovations. However, common challenges arise regarding research, extension and the linkages between them as well as between the farmers, resulting in low impact in agricultural development.

20. There several reasons for these issues that can include funding and capacities. Even with those sorted, classic extension and research approaches, top-down and one-way knowledge generators, are now considered a failed system[24]. The challenge is to better to orient research more effectively towards farmers' needs, by more closely involving farmers in decisions regarding research strategies[25]. In this line, the revised Agricultural and Research policies of Eritrea stress the he need to strengthened the links between research and extension, as well as the need to shift from a classical technology dissemination approach, to a participatory knowledge generation approach where agricultural experts are more of facilitators that mere technological recipes message transferors.

Promotion of a more active and adapted agricultural research

21. In the context of Public National Research, the aim of agricultural research is to generate knowledge and produce innovations and technologies that help developed the agricultural sector by improving productivity, reducing farmers' costs and burden as well as conserving the environment. The appropriateness of technologies developed can be the main challenge and what is right for a farmer might not be right for others[26] .

22. How to generate appropriate technologies and innovations? The answer lies in using more participatory research methods. The following are some research methods with different level of shared knowledge generation:

i. Applied research, which develops new technologies and tangible inventions by adapting basic and strategic research to solve specific field problems.
ii. Adaptive research, which involves selecting and evaluating technological innovations to assess their performance in a particular agricultural system and adjusting technologies to fit specific environmental conditions.
iii. Participatory Action Research, emphasizes research and action. Different stakeholders are involved in deciding what needs to be researched, designing and measuring results[27].

23. Participatory research is an approach well adapted to smallholders and poor farmers. The process of technology development is closely linked with social transformation process. The planning and assessment makes participants to take account of their situation and the responsibilities of different people in the community. There is a growing recognition that agricultural improvement process sustainability is not necessarily to be found in the technologies introduced, but rather in the social process of active farmer-managed innovation and dissemination of ideas where farmers manage and coordinate ecological processes[28]. Participatory technology development should strengthen the capacity of farmers and rural communities to analyze ongoing processes and to help develop relevant and feasible innovations[29] .

Promoting a more participatory extension service

[24] An example is the Training and Visit (T&V) system, which was built on the concepts of diffusion of innovation and transfer of technology from scientists to farmers using an essentially one-way mode of communication. FFS Guidelines. FAO, 2016.
[25] Roger D. Norton, 'Critical Issues Facing Agriculture on the Eve of the Twenty-First Century', in Towards the Formation of an Inter-American Strategy for Agriculture, IICA, San José, Costa Rica, 2000, p. 291.
[26, 23]Agricultural Development Policy, Concepts and Experiences. Roger D. Norton, FAO. 2004.
[27] FAO, *n.d.*
[28] FFS Guidelines. FAO, 2016.
[29] *Laurens van Veldhuizen, Ann Waters-Bayer and Henk de Zeeuw*, Developing Technology with Farmers: A Trainer's Guide for Participatory Learning, *Zed Books Ltd, London, 1997, p. 4*).

24. The GoSE in its revised agricultural extension policy, has risen several issues regarding to the current extension service, as : i) Insufficient number of extension agents in relation to the number of farmers, and difficulty to reach farmers in isolated remote areas; ii) Technical recommendations are not always the most appropriate for each area and group of farmers; iii) Rural technologies are not neutral with respect to gender; iv) Insufficient support of farmer-to-farmer exchanges; vi) little feedback from extension agents to researchers from farmers' concerns and views.

25. To address these issues there a need to integrate new extension methods where Extension becomes a process of facilitation of the acquisition of knowledge and skills, more than a process of technology transfer. This should aim at emphasizing human resource development (farmers and rural communities) by strengthening the inherent capacities of farmers to solve their own problems and make appropriate farming decisions. Farmers are clients, sponsors and stakeholders. Increased decentralization measures and participatory learning approach to help the effectiveness of extension. Some recommended measures are[30]:

- Forming local research teams comprising researchers, agriculture experts, farmers;
- Giving farmers a leading role in some aspects of the research process, with the support of facilitators, and giving them control of the directions of that process;
- Supporting link between traditional and practical knowledge with science based knowledge;
- Giving farmers a sense of ownership over the process by consulting with them and include them in different steps of the process, and thus a greater willingness to demand that research address their priority concerns,
- harmonize working methods and tools;
- capitalize on experiences and exchanges of information;
- carry out follow-up and evaluation;
- Fairness in target groups.

26. There is a need to increase agriculture experts' capacities of facilitating and be able to learn on the process, and increase feedback to researchers of farmers view on the innovation to help adapt and improve research. In this line, FFS is a locally viable approach that results of combining prior information with the results of farmers' own experiments. They transform farmers from recipients of information to generators and manipulators of data. Thus, it also helps the decentralization process and can support the extension system particularly in areas where no sufficient extension staff is available. Supporting farmer-to- farmer dissemination is another method that already happens normally, but sometimes at limited scale.

Promoting stronger linkages between extension and research

27. To generate appropriate technologies and boost local knowledge, there is need to strengthen the link between rural communities, extension service and research. There is need to increase local capacities and awareness of this participatory approach and generate mechanism that can support it. Some of these mechanisms have already been mentioned. At Project level, knowledge management could help increase information flow and knowledge dissemination. These could be done by preparing case studies, knowledge products, communication on interesting innovations, help the identification of interesting innovation or needs for research as well as promoting the linkages between different stakeholders (research, farmers groups, FFS, extension service, international research centres ,etc.) . M&E could also develop mechanisms that can monitor and evaluate both research and extension services and provide guideline for improvement[31]. Moreover, support farmers' exchanges between them and to research centres and plot. To give direct feedback and ownership on the innovation development. The proposed development of FFS and AFS by the Project, sets a great opportunity to create his bridge, where farmers will conduct their own experiments, try technologies and raise research issues. The visit and participation of researchers from NARI could help further developed research subjects and adjust technologies coming directly from farmers' demands.

[31] A participatory evaluation, including evaluation of FFS performance and technology adoption.

28. Research requires also a liaison between international research centres and those of neighboring countries with similar agronomic conditions, and between decentralized research centres within the country, could also be supported financially and by contact generation. Here, also the role of FAO could help identify interesting technologies developed and experts, institutions or farmers organizations working on them.

ANNEX 6. DRAFT CAPACITY BUILDING PLAN

IADP implementation partner	Technical areas of expertise for institutional strengthening	Training institutions / courses identified	Expected result / output of training, name and function of staff member to be trained
AED	**Participatory, adaptive extension services:** - Rangeland management - How to disseminate knowledge to others - IPM - Livestock and crop production - Climate Smart Agriculture (conservation agriculture) - Organic farming - Agricultural tools - Mechanization - Management models for community owned facilities **Agribusiness**		
National Seed Unit	Will be supported by the development and implementation of protocols and the decentralization of the seed distribution system.		
RSD	- Training of inspectors (specialization) - Specialized studies		
NARI	**Adaptive research**		
NAPHL	(i) Produce the required animal vaccines; (ii) build capacity, required to train the decentralized health clinics' staff.		
Planning and Statistics Division	M&E Statistical analysis Practical conducting of baseline studies using local enumerators		
AFD	Efficiency of financial management and procurement.		
NPCO staff			
ZPCO staff			

ANNEX 7. AWPB OUTLINE

1. The AWPB will have three sections: (i) a narrative section (in word) describing the results of the previous year and the activities planned for the upcoming year; (ii) a detailed budget (in excel) (iii) a procurement plan. This must include as a minimum:

a. Executive Summary
b. Summary Project Description
c. Summary of implementation to date and results achieved
d. Proposed Strategic Priorities for the upcoming year
e. Description of Expected results and activities (per Component and per Zoba)
    i. Schedule of implementation (per month)
    ii. Related procurement plan
    iii. Links to the results framework
f. Implementation constraints and risks mitigation
g. Budget Summary (per financier, per component, per category)
h. Detailed table per implementing agency and summary by project activity. E.g. for one activity, you may have several implementing agencies contributing to it.

ANNEX 8. PROCUREMENT / FM CHECKLISTS

ANNEX 9. NOTES RELATED TO THE 3 YEAR PLANNING PROCESS

1. Planning must be towards clear targets (provided in each of the sections above), clearly showing the contribution of each implementing entity and agency; as well as the specific activities to be undertaken in each area, for example livestock in lowlands, etc. The role of each of the IA's (Zobas and other line ministries) must be clearly spelled out, to allow these to plan accordingly and ensure that staff is available etc. The document may not have concrete activities but establish clear annual results, milestones and mechanisms for readjusting the project approach.

2. This document will be critical for project implementation. During the Project Design process, it was clearly expressed by ZPCO teams that they would like more concrete guidance from the NPCO and that the PDR format did not allow for the individual Zoba to see its role in the achievement of the proposed results.

3. It is recommended that development of this document be a start-up activity, as it will then, at the same time, serve as a capacity building and team work activity for NPCO and ZPCO staff, so that the priorities of the Zobas are not lost, but rather fit into the larger picture. It is recommended that the document be shared with IFAD for comments.

Annex 10. Free Prior and Informed Consent, Public disclosure and ESMF implementation and Monitoring

FPIC of investments is sought during the implementation phase when:

- The project, or some of its component, is likely to affect land access and use rights of local communities, and/or
- The project area is home to indigenous and tribal peoples and ethnic minorities;
- Communities are not identifiable at project design stage;
- Specific investments in specific communities are not predefined during project design phase, but open to communities' demand during the project implementation period.

4. The outline for the FPIC plan includes the following steps in the process and include timeline:

- Sociocultural and land tenure asesment1 (as part of the IFAD standard poverty analysis, which needs to be deepened in certain aspects as described in Table 3-5 below);
- Identification of decision-making institutions and representatives to ensure full, effective and equal participation of stakeholders;
- Consultation process leading to FPIC;
- Formalized consent agreement.

The FPIC implementation plan indicates:

- When and how the sociocultural and land tenure assessment will be undertaken;
- When and how consultations will be carried out to identify decision-making institutions;
- When and how consultations leading to FPIC will be carried out.
- By when the consent agreement will be formalized with the local communities.

The process for seeking FPIC at the implementation stage is summarized in the Table below

Table Seeking FPIC at implementation stage (IFAD, 2015)

Prepare FPIC implementation plan	Implement FPIC plan	Formalize consent	Assess FPIC implementation	
During design phase before QA (annexed to PDR)	***From start-up workshop and before any investment is made***	***Before any investment is made***	***Implementation support/joint review missions***	WHEN?
The FPIC implementation plan should specify: • How and when to conduct the socio-cultural and land tenure assessment • How and when to identify decision-making institutions and representatives • How and when to conduct consultation leading to FPIC • Involve experts in the design team • During project design missions consult with farmers and indigenous peoples' organizations and agree on the FPIC plan (use the FAFO and IPs Forum networks)	• Confirm/revise FPIC implementation plat at start up workshop • Conduct/(review if available) socio-cultural and land tenure assessment • Identify decision-making institutions ✓Conduct preliminary consultations with the community and explain the nature of the proposed project ✓Allow time for communities to discuss and decide on their representatives for the consultation process leading to FPIC ✓Clarify responsibilities of representatives ✓Agree on the process leading to FPIC ✓Identify signatory parties for the consent agreement • Conduct consultation leading to FPIC before any investment is made ✓Share objective and scope of the project with the representatives identified by the communities and identify project component(s) requiring FPIC ✓Inform them on the actors financing and implementing the project and their respective responsibilities ✓Provide clear and transparent information on the benefits and risks of the project ✓Share the findings of the socio-cultural, land tenure and environmental assessment ✓Formalize Consent Agreement	**The format for a consent agreement to include:** • Respective expectations • Proposed project duration, expected results and activities • Participatory monitoring and verification plan and procedures • Identification of grievances procedures and mechanisms • Terms of withdrawal of consent • Record of process through means and languages accessible to all stakeholders and parties involved	• Engage experts in joint review missions • Assess FPIC process • Identify grievances and find solutions to address	HOW?

PUBLIC CONSULTATION AND DISCLOSURE

5. Public consultations are critical in preparing an effective proposal for the agricultural activities. The first step is to identify the key stakeholders and establish how/when they will be engaged including for the screening process and in the course of any further environmental and social work. These consultations should identify key issues and determine how the concerns of all parties will be addressed.

6. All things being equal, the public consultation methods include press conferences, information notices, brochures/fliers, interviews, questionnaires and polls, open houses, community meetings, advisory committees, and public hearings. The guidelines for public consultation include, among others, a requirement that major elements of the consultation program should be timed to coincide with significant planning and decision-making activities in the project cycle. In terms of Eritrea's EA guidelines, public consultation should be undertaken during (i) the preparation of the EA terms of reference; (ii) the carrying out of an EA; and (iii) government review of

an EA report. MoA/IADP will undertake the public consultations for the consultant terms of reference and EA studies whilst it is the responsibility of the Environment Department to carry out the consultations for the EA work review.ccc

7. Stakeholders for the purpose of this programme shall be defined as all those people and institutions that have an interest in the successful planning and execution of the activities. This includes those likely to be positively and negatively affected by the programme. Table 5-1 is a matrix that will be used to identify the key stakeholders for each sub-project:

Table *Stakeholder Identification Matrix*

AFFECTED PARTIES	**HOW TO IDENTIFY THEM**
People living in the vicinity of the proposed works. (students, teachers, parents etc)	Identify the local government area(s) that falls within 500m radius of the proposed infrastructure. Review available data to determine the profile of the whole stakeholder or relevant group. Use identified groups and individuals to tap into stakeholder networks to identify others.
Special interest groups	Identify key individuals or groups through organized groups, local clubs, community halls and religious places. Be aware of similar local groups or individuals.

8. The consultation process shall ensure that all those identified as stakeholders are conferred with. Subject to IADP PMU approval, the Environmental/Social consultant will share information about the sub-project with the public to enable meaningful contributions and thus enhance the success of the programme.

9. Measures requiring ongoing consultations are summarized in the table below

Measures requiring continuous consultations

NO.	**ENVIRONMENTAL/ SOCIAL IMPACTS**	**PROPOSED MITIGATION MEASURES**	**RELEVANT INSTITUTION**	**GOALS AND EXPECTED OUTCOMES**	**CONSULTATION FREQUENCY**
4	Spread of HIV/AIDS	Strengthen HIV/AIDS Awareness Campaigns in project areas, Training of village heads and Health Workers in HIV/AIDS issues, encouraging participation of the private and public sectors in HIV/AIDS issues and reinforcement of workplace HIV/AIDS issues.	Min of Health *MoA* *IADP*	% decrease in those affected. (Monthly statistics from hospital and clinics)	Monthly
5	Loss of vegetation	Selective clearing of project sites, reforestation, preservation of protected plant species, use of alternative sources of energy, use of environmentally friendly technologies, awareness campaigns.	***IADP, Forestry Department*** ***Min of Agriculture*** ***Ministry of Environment***	Increase in area of land cultivated and deforested	Before project implementation Annually during and after project implementation
6	Loss of Soil	Stabilization of loose soil, controlled excavation, preservation of vegetation cover, controlled transportation of raw	***IADP, Forestry Department. Lands Department***	Area and size of gullies formed Amount of silt deposited in watercourses	Annually

NO.	ENVIRONMENTAL/ SOCIAL IMPACTS	PROPOSED MITIGATION MEASURES	RELEVANT INSTITUTION	GOALS AND EXPECTED OUTCOMES	CONSULTATION FREQUENCY
		materials, appropriate landscaping.	***Min of Agriculture***		
7	Loss of fragile ecosystems	Conduct feasibility studies before construction, use expert knowledge of ecologists, introduction of ecosystem conservation projects, fencing	***Lands Department*** ***Min of Agriculture*** ***IADP***	Size of area affected	Annually
9	Soil and water pollution resulting from the accumulation of solid and liquid waste Soil and water pollution from chemicals & fertilizers	Controlled disposal of wastes and effluent by use of appropriate disposal facilities, use of appropriate drainage structures, use of cleaner technologies, proper storage of materials, awareness campaigns	***IADP, Forestry Department. Lands Department*** ***Min of Agriculture*** Ministry of ***Water .*** ***Ministry of Environment***	Change in chemical and biological water quality	Bi-annually
10	Dust, Emissions, Strong Light, Noise and Vibration	Controlled operation times, use of appropriate equipment, proper orientation of lights, use of alternative materials, use water sprinklers to control dust, use of scrubbers	***IADP, Forestry Department. Lands Department*** ***Min of Agriculture.*** ***Ministry of Environment***	Number of complaints Extent of property and vegetation soiling	During construction
11	Water-borne and / or water related diseases	Provision of potable water supplies and sanitation facilities, capacity building in sanitation and health issues, awareness campaigns	***Min of Health*** ***IADP,*** ***Min of Agriculture*** Ministry of ***Water .*** ***Ministry of Environment***	Increase in water related ailments	Annually
12	Loss of natural and cultural heritage.	Conduct feasibility studies, fencing, introduce proper antiquity education programmes	***Dept of Museums***	Number or size of property lost	Before project implementation

NO.	ENVIRONMENTAL/ SOCIAL IMPACTS	PROPOSED MITIGATION MEASURES	RELEVANT INSTITUTION	GOALS AND EXPECTED OUTCOMES	CONSULTATION FREQUENCY
			Min. of Education		During project implementation
13	Loss of animals and aquatic life.	Minimize vibrations and strong noise, enforcement of parks and wildlife law, conduct feasibility studies, avoid contamination of soil and water	***Wildlife Dept.*** ***Fisheries Dept*** ***IADP***	Animal count Fish and aquatic life estimates	Before project implementation Annually during project implementation
14	Disturbance of marginal areas	Avoid extraction of raw materials from marginal areas, no construction of structures in marginal areas.	***IADP, Forestry Department. Lands Department*** ***Min of Agriculture*** Ministry of ***Water .*** ***Ministry of Environment***	Size of area affected	Bi-annually
15	Incidence of Flooding	Catchment Management Flood control measures Forestation of the catchment areas of the irrigation schemes	***IADP,*** ***Forestry Department.*** ***Min of Agriculture*** Ministry of ***Water .*** ***Ministry of Environment***	Number of trees planted Area planted with trees Number of people or properties affected	Annually
16	Exposure to Agro-chemicals	Encourage organic farming, and limit the use of Agro-chemicals. Conduct awareness training & workshops	***MoH*** ***IADP,*** ***Min of Agriculture*** ***Ministry of Environment***	Number of people affected by agro-chemicals	Annually
18	Lack of farm inputs (loans, agro-chemicals etc)	Encourage organic farming, provide training on marketing and bulk purchasing to farmers, and provide critical marketing information to farmers regularly.	***Min of Agriculture*** Farm IADP	productivity (per Ha) Financial status of the farmers Change in standard of living	Annually

10. Environmental and Social Monitoring Plan

The Environmental and Social effects of implementing the IADP programme and the success of the mitigation measures, must be monitored by the IADP PMU with the help of other relevant authorities. This monitoring is an important part of managing the impacts of the programme. It is used for timely identification and correction of administrative, financial or technical lapses or inadequacies in the execution of programme environmental and social risk mitigation measures.

The objective for monitoring is twofold:

- To provide timely information about the effectiveness of the environmental and social management screening process as outlined in the ESMF. Information generated will inform continuous improvement to the process,

- To establish the progress in implementation of the mitigation measures, the extent to which they are effective in maintaining environmental and social integrity and if any changes are required to improve the ESMF implementation.

Monitoring is done on the basis of agreed upon indicators. Examples of typical environmental indicators include;

(i) Evidence of anti-soil erosion measures such as terraces,
(ii) Re-planted vegetation,
(iii) Constructed drainage channels,
(iv) Gazetted places for waste disposal and mechanisms for waste disposal in place,
(v) No large-scale clearance of forests and drainage of wetlands,
(vi) Filled up burrow pits, etc

Social indicators include;

(i) Representation on the community management committee
(ii) Equitable sharing of benefits from the programme intervention
(iii) Number of members attending programme planning and implementation meetings
(iv) Effect of programme implementation on local household economies.

These indicators must be reviewed in conjunction with environmental guidelines for Contractors, Pesticides use, Waste management, Maintenance of Facilities (education and health infrastructure, roads, water and sanitation facilities.

AREAS TO BE MONITORED

Environmental issues

a) Soils

Soil degradation occurs as the soils are exposed and or compacted during the Value addition infrastructure construction potentially affecting the drainage of the areas.

The farmers must ensure that no gullies or rills develop in the programme areas. This can be avoided by taking such soil erosion measures as construction of embankments and designing drainage along work areas. The absence of gullies and rills will be used as a measure of the success of the control measures.

The soil can be scorched by chemical spillages. This will render the soil poisonous and it must be discouraged at all cost.

a) Vegetation

Unnecessary vegetation clearing and grass fires must be prevented at all costs. The trees should not be gathered for firewood or cut for other purposes. The local residents must be monitored to ensure that firewood is not excessively collected.

a) Chemical pollution

A great likelihood of chemical pollution of the water and the soil exists and in order to monitor the amount of pollutants in the soil or water, samples must be taken regularly from them for pollution testing.

Social Issues

a) Loss of natural and cultural heritage

The rehabilitation/construction of roads and Value addition infrastructure may affect some natural features, antics and relics in the programme area. Measures must be put in place for chance finds and any such incidences must be treated as required by the relevant Act.

b) Socio-Cultural Issues

Regular health checks of the work force/farmers are a way to monitor disease patterns of the members of the community to ensure that no new strains of diseases are being introduced.

c) Noise and Vibrations

It will be important to routinely monitor noise levels from the machinery to ensure that it conforms to the limits recommended for noise levels.

GENERAL

It is recommended that all environmental parameters mentioned above be monitored during the implementation and operation stages and any impacts should be mitigated as soon as possible. The farmers and the IADP PMU should monitor on a periodic basis.

In the course of monitoring, if and when any significant impacts are detected, the monitoring team should meet and address the issue. All team members should keep records of such meetings.

THE MONITORING PLAN

The Monitoring Plan is summarized in Table below.

Table Monitoring Activities and Indicators

ISSUE	*METHOD OF MONITORING*	AREAS OF CONCERN	POSITIVE INDICATOR	FREQUENCY	RESPONSIBLE AUTHORITIES
Soils	The Developer should make a daily inspection of earth works, and ensure that slopes are suitably graded. Once earthworks are complete the Implementing Agent should monitor the restoration measures implemented by the Contractor, such as re-vegetation	• Soil erosion • Conservation activities • Rangelands management	an absence of rills, gullies or other erosion features occurs	Regularly and ongoing as project is implemented	Department of Forestry
Vegetation	The farmers must clear area to be used and site works only.	• Clearing of the project sites and disturbance of animals. • flora and fauna	No unnecessary vegetation cleared	Regularly and ongoing as project is implemented	• Department of Forestry • Ministry of Environment.
Health	IADP PMU must ensure that education and awareness campaigns are implemented. The Ministry of Health, local authority should carry out awareness campaigns on irrigation scheme related diseases, (water-borne diseases) and carry out vector control methods such as regular spraying of potential breeding sites (ponds) IADP PMU must mainstream HIV/AIDS issues into the project implementation programme.	• Public health • Ensure that stagnant water is sprayed to destroy mosquito larvae. • Waste management at Sub-project sites. • Disease outbreak due to concentration of people at the Sub-project sites. • Disease outbreak due to dust and water pollution. • Control and management of various animal diseases	Reduction in number of cases of such diseases as Avian flu, foot and mouth, AIDS/STD related diseases recorded at hospital and medical clinic Reduction in number of diseases such as malaria and cholera	Regularly and ongoing as project is implemented	• Health ministry • IADP PMU • MoA

ISSUE	*METHOD OF MONITORING*	AREAS OF CONCERN	POSITIVE INDICATOR	FREQUENCY	RESPONSIBLE AUTHORITIES
Archaeology	This should concentrate on chance finds. Provision should be made to allow archaeologists to be present on site during the excavation periods if they so wish. The IADP PMU should inspect all excavations, and where archaeological remains are found work must stop until the IADP PMU has given the all clear to proceed. The IADP PMU should contact the Museums Authorities in the event of a significant archaeological find.	• Archaeological Findings	Archaeological remains not excavated, disturbed or destroyed.	• Regularly and ongoing as project is implemented • Room for chance finds	• Department of Museums.
Landscape	The IADP PMU should make visual inspection of earth works to ensure that excessive excavation is not being carried out. Temporary screening may be appropriate in some cases.	• Visual intrusions • Aesthetics	Landscape alteration reduced to a minimum	Monthly	• Department of National Museums • Department of Environmental Affairs.
Agricultural Activities	• Ensure that Agricultural Activities follow designs and recommendations given for proper agricultural practices. • Ensure overall management of the Programme. • Appropriate land use downstream is done and no pollution of crops from contaminated water from spillages occurs.	• Siting of works, plan	Land degradation curbed Program running smoothly	Regularly	• IADP PMU • MoA

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Integrated Agriculture Development Project

Project Design Report

Annex 9: Integrated Project Risk Matrix (IPRM)

Mission Dates:	8 to 30 June 2020
Document Date:	05/10/2020
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East and Southern Africa Division
Programme Management Department

Overall Summary

Risk Category / Subcategory	Inherent risk	Residual risk
Country Context	**Substantial**	**Moderate**
Political Commitment	*Moderate*	*Low*
Governance	*High*	*Substantial*
Macroeconomic	*Substantial*	*Moderate*
Fragility and Security	*Substantial*	*Moderate*
Sector Strategies and Policies	**Substantial**	**Moderate**
Policy alignment	*Substantial*	*Moderate*
Policy Development and Implementation	*Substantial*	*Moderate*
Environment and Climate Context	**High**	**Substantial**
Project vulnerability to environmental conditions	*High*	*Substantial*
Project vulnerability to climate change impacts	*High*	*Substantial*
Project Scope	**Moderate**	**Low**
Project Relevance	*Moderate*	*Low*
Technical Soundness	*Moderate*	*Low*
Institutional Capacity for Implementation and Sustainability	**High**	**Substantial**
Implementation Arrangements	*High*	*Substantial*
Monitoring and Evaluation Arrangements	*High*	*Substantial*
Financial Management	**High**	**Substantial**
Organization and Staffing	*Substantial*	*Moderate*
Budgeting	*Substantial*	*Moderate*
Funds Flow/Disbursement Arrangements	*High*	*Substantial*
Internal Controls	*High*	*Substantial*
Accounting and financial reporting	*High*	*Substantial*
External Audit	*Substantial*	*Moderate*
Project Procurement	**Substantial**	**Moderate**
Legal and Regulatory Framework	*Substantial*	*Moderate*
Accountability and Transparency	*High*	*High*
Capability in Public Procurement	*Moderate*	*Low*
Public Procurement Processes	*Moderate*	*Low*
Environment, Social and Climate Impact	**Moderate**	**Low**
Biodiversity Conservation	*Moderate*	*Low*
Resource Efficiency and Pollution Prevention	*Low*	*Low*
Cultural Heritage	*Low*	*Low*
Indigenous People	*Low*	*Low*

Risk Category / Subcategory	Inherent risk	Residual risk
Labour and Working Conditions	*Substantial*	*Moderate*
Community Health and Safety	*Substantial*	*Moderate*
Physical and Economic Resettlement	*Low*	*Low*
Greenhouse Gas Emissions	*Low*	*Low*
Vulnerability of target populations and ecosystems to climate variability and hazards	*Moderate*	*Low*
Stakeholders	**Moderate**	**Low**
Stakeholder Engagement/Coordination	*Moderate*	*Low*
Stakeholder Grievances	*Low*	*Low*
Overall	**Substantial**	**Moderate**

Country Context	**Substantial**	**Moderate**
Political Commitment	***Moderate***	***Low***
Risk: If the peace treaty between Ethiopia and Eritrea does not hold, the country may remain in isolation, and further divert from the current development trajectory. This may impact on the Country's ability to invest in agriculture and other development sectors, and mobilisation of counterpart funds	Moderate	Low
Mitigations: • IADP will support investments that promote economic and social empowerment of the rural communities to enhance their resilience • Apply IFAD's guidelines for accounting for in-kind contribution to fully capture the contribution of the Government and beneficiaries, in lieu of counterpart funds		
Governance	***High***	***Substantial***
Risk: Insufficient accountability and transparency due to weak financial internal controls; gaps in financial reporting and lack of national legal regulatory framework for procurement to curb fraud and corruption. Inclusion of women and youth in decision making remains a challenge due to socio-cultural and generational norms	High	Substantial

Mitigations: • TA will be provided to build capacity in Financial Management and put in place internal control framework • IFAD's Project Procurement Guidelines, Procurement Handbook and standard procurement documents (SPDs) shall be used; • AFDB has just initiated a project to support the Government in the preparation of a framework for Public Procurement • SECAP and specific quotas for the inclusion of women and youth. IADP also includes self-targeting activities that are attractive to these social categories (women and youth). • An ESMF has been prepared which presents guidance on Free, Prior and Informed Consent (FPIC)		
Macroeconomic	***Substantial***	***Moderate***
Risk: The Gross Domestic Product (GDP) of Eritrea relies heavily on services (58.9 per cent) and industry (23.5 per cent). Agriculture and fisheries contribute only 17.6 per cent, although the sector employs 65-70 per cent of the population. The agriculture sector continues to underperform, and is unable to meet the food demands of the population. Agriculture and fisheries provide only a minor contribution to economic growth due to persistent low productivity, lack of investments and vulnerability to frequent droughts. The 2019 Ease of Doing Business score of Eritrea is 23.1 and ranks Eritrea 189th out of 190 countries. Private sector participation in the economy is constrained by various economic and financial parameters. Consequently, Eritrean agriculture has difficulties to compete in the international markets combined with restricted cross-border movements of capital, goods and services.	Substantial	Moderate
Mitigations: • IADP will support investments that promote economic and social empowerment of the rural communities to enhance their resilience • IADP will also focus on addressing demand from local markets and import substitution • IADP will gradually integrate business planning to inform investments • The resumption of relations with Ethiopia and neighbouring countries may promote intra-regional trade on agriculture commodities		
Fragility and Security	***Substantial***	***Moderate***
Risk: Negative impact of emergencies on the economy and livelihoods - COVID-19 & Desert Locust	Substantial	Moderate
Mitigations: • IADP includes an un-costed component to address any potential disasters and emergency situations arising from the project. • IFADs Rural Poor Stimulus Facility (RPSF) will address short-term disruptions to food supply chains, to ensure that beneficiaries are in a position to absorb project interventions • Reallocations under NAP are contributing to address the Desert Locust emergency. The Government is also exploring biological pesticides, and developing technology to convert the desert locust into animal feed.		

Sector Strategies and Policies	**Substantial**	**Moderate**
Policy alignment	***Substantial***	***Moderate***
Risk: -Limited coordination across sectors, -Enabling environment may not be conducive for the realization of the Small and Medium Commercial Farmers Strategy (SMCFS) with the goal to create by 2023 farm enterprises that engage in highly productive, profitable agriculture value chains linked to domestic and international markets.	Substantial	Moderate
Mitigations: • Continuous engagement with GoSE on coordination on watershed management activities by FREMP and NAP when they converge in Zobas, and within the context of the UNCT • IADP is supporting the development of key policy frameworks that are critical to the implementation of the SMCFS including the translation of policies into regulations for the food safety and certification protocols; seed sector development policy; cooperative proclamation, animal health legislation; enabling conditions for engagement in market-oriented production and nutrition sensitive agriculture.		
Policy Development and Implementation	***Substantial***	***Moderate***
Risk: Despite policy level aspirations for the development of a productive and profitable agriculture sector and a very strong commitment by Government to the country's development agenda, there are significant systemic gaps at the institutional and policy levels e.g. appropriateness of procedures and regulatory frameworks to guide the implementation of rural development projects (e.g. national procurement framework, limited technical and institutional capacities at all levels, inadequate financial management and M&E systems which impact on the ability to quantitatively demonstrate development impact.	Substantial	Moderate
Mitigations: • Capacity needs assessment, which will inform capacity development interventions and the provision of specialised technical assistance. Partnerships with ASARECA, Africa Capacity Building Foundation and FAO will be explored. • Analysis of economic sustainability and value for money to underpin new investments; • Strengthen M&E systems to demonstrate viability or inadequacies of different policies/strategies. • AFDB has just initiated a project to support the Government in the preparation of a framework for Public Procurement		
Environment and Climate Context	**High**	**Substantial**
Project vulnerability to environmental conditions	***High***	***Substantial***

Risk: Given the poor spatial and temporal distribution of water as well as total scarcity of rainfall in Eritrea, with over 90 percent of the total area receiving less than 450 mm per annum, soil moisture deficiency remains to be the single most important physical production related risk factor to ensure food security in the country The project takes place in the context of land degradation and over exploitation of woody biomass	High	Substantial
Mitigations: • Component 1 is built around integrated water resources management (IWRM) as the planning unit. It will finance activities required to plan and implement IWRM to restore the hydrologic and ecological functioning of watersheds, enhance the sustainability of existing land uses and, improve its resilience to climate shocks. • a high level of awareness by government and regular programs of community level terracing and afforestation, which will also be reinforced by project activities		
Project vulnerability to climate change impacts	***High***	***Substantial***
Risk: The climate risk of the Project is preliminarily classified as “high”. Climate change and increased climate variability are severely affecting Eritrea, through its significant impact on crop and livestock production, upland fish farming and rural livelihoods Based on trends, it is likely that most of the project sites will be exposed to at least one season of very low rainfall over the life of the project	High	Substantial
Mitigations: • The climate risks will be mitigated by increasing the ability of the affected communities to adapt to environmental and economic variability, and long term changes. As per IFAD requirements, a detailed desk-based Climate Risk Analysis will be undertaken during the pre-implementation, including details of mitigating actions. • Some of the climate smart technologies to be promoted include: a) rainwater harvesting; b) drought tolerant and early maturing crop varieties; c) drought tolerant forage and agroforestry fodder species; d) watershed conservation and management; e) afforestation ;f) mangrove rehabilitation and conservation; g) solar and other forms of renewable energy sources, and energy saving approaches etc • The project introduces an innovative approach to targeting, that takes into account the agro-ecological conditions and overall environment and climate suitability to the proposed interventions		
Project Scope	**Moderate**	**Low**
Project Relevance	***Moderate***	***Low***
Risk: A national programme may result in resources (financial and technical), spread too thinly, which may negatively impact implementation and affect the achievement of the development objectives.	Moderate	Low

Mitigations: • Phased implementation based on Zoba capacities, state of the watershed treatment and findings of the NAP impact assessment will be applied • Targeting Strategy will take into account agro-ecological suitability, beneficiary capacities, preference and prioritization • Active contribution of local and national key institution partners		
Technical Soundness	***Moderate***	***Low***
Risk: Limited capacities may impact on the implementation of the innovative technical aspects of the project including remote sensing, sprinkler irrigation, agribusiness approaches	Moderate	Low
Mitigations: • Capacity needs assessment coupled with specialised technical assistance and on-the-job training • Farmer field schools approach will be adapted to include business planning • Phasing of project interventions to simplify the project component structure		
Institutional Capacity for Implementation and Sustainability	**High**	**Substantial**
Implementation Arrangements	***High***	***Substantial***
Risk: Institutional Capacity gaps to implement innovative technical aspects of the project	High	Substantial
Mitigations: • Capacity needs assessment • Provision of specialized international technical assistance. • Institutional capacity development at all levels, with training of young staff, as well as investments in equipment and systems.		
Monitoring and Evaluation Arrangements	***High***	***Substantial***
Risk: Weak M&E systems and capacities to consolidate, analyse data and report on outcomes. Different reporting systems across the Zobas'	High	Substantial
Mitigations: • Specialised Technical Assistance • Participation in PRIME training of project staff • Development of project-level M&E manuals and standardized approaches across Zobas • Focus on outcome surveys		
Financial Management	**High**	**Substantial**
Organization and Staffing	***Substantial***	***Moderate***

Risk: • Capacity gaps of finance staff at NPCO level • Weak capacity of finance staff at zoba level • Lack of clarity on IFAD's procedures	Substantial	Moderate
Mitigations: • Full-time, qualified, finance staff assigned on basis of agreed TORs • Finance team composed of full-time financial controller, chief accountant and accounts assistant • Selection of financial controller for IFAD approval • Capacity building at start-up • CIPFA FM training to be provided • Specialised technical assistance, implementation support by IFAD • Agreed training plan implemented from start-up		
Budgeting	***Substantial***	***Moderate***
Risk: • Delays in AWPB submission and approvals • Weak budgetary control practices • Low budget execution	Substantial	Moderate
Mitigations: • Timeliness of AWPB submission monitored • Adoption of automated budget monitoring and commitment tools • Mandatory quarterly reporting on budget execution		
Funds Flow/Disbursement Arrangements	***High***	***Substantial***
Risk: • Low disbursements due to NPCO financial reporting capacities • Delays in financial reporting and submission of returns at zoba level; irregular/ delayed bank reconciliations	High	Substantial
Mitigations: • AWPB execution and procurement processes closely monitored by NPCO and IFAD • Quarterly submission of withdrawal applications • Mandatory quarterly interim financial reports • Close monitoring of zoba financial reporting and bank reconciliations by NPCO finance team • Adoption of IFAD's client portal (ICP)		
Internal Controls	***High***	***Substantial***
Risk: • Weak internal controls leading to ineligible expenditure • Inadequate segregation of approvals • Inadequate internal audit mechanisms	High	Substantial

Mitigations: • Internal control framework assessed through TA • Segregation of duties ensured through adequate staff complement (at least 3 full-time finance staff at NPCO) • PIM finalised and adopted at start-up; training workshop on procedures for all NPCO and concerned zoba staff • Budgetary monitoring, management accounting & reporting procedures monitored through interim financial reports • External audit reviews of internal controls, Management Letter recommendations • Scope of internal audit agreed annually - risk-based program of work; internal audit reports available to IFAD; reporting on follow-up to audit recommendations • Internal controls assessed through IFAD supervisions		
Accounting and financial reporting	***High***	***Substantial***
Risk: • Weak financial reporting; delays with data inputs, management and IFAD not provided with timely financial information required for business decisions • Inaccurate financial reporting due to manual processes • Weak budget monitoring systems leading to budget overruns • Procurement of accounting software delayed • Failure to report accurately on in-kind contributions	High	Substantial
Mitigations: • Training on IFAD's financial reporting requirements • Training on international accounting standards • Adoption of accounting software at start-up, PIM updated to reflect software work-flows • Automated generation of financial reports, including withdrawal applications and SOEs • Procurement of accounting software: legal covenant • Bidding documents for accounting software prepared prior to start-up; processes launched at signature of financing agreement • Cross-support to NPCO by finance staff of ongoing projects • Procedure for calculating and recording in-kind contributions to be documented in PIM at start-up		
External Audit	***Substantial***	***Moderate***
Risk: • Delays in audit submission • Quality of audit work not meeting IFAD's requirements and best practice international standards	Substantial	Moderate
Mitigations: • Selection of auditor to be based on quality as well as cost (QCB) • IFAD no objection to audit TOR and selection of auditor		
Project Procurement	**Substantial**	**Moderate**
Legal and Regulatory Framework	***Substantial***	***Moderate***

Risk: • Lack of acceptable national legal and regulatory framework ; • Lack of standard bidding documents ; • Weak contract administration and management; • Limited public access to procurement information also due to very weak ICT systems.	Substantial	Moderate
Mitigations: • Lack of acceptable national systems means IFAD's Project Procurement Guidelines, Procurement Handbook and standard procurement documents (SPDs) shall be mandatory; • a highly competent, qualified and dedicated team will ensure compliance with procurement monitoring; • enable IFAD-financed projects to operate on a separate platform to government or for IFAD to ensure government's systems are upgraded.		
Accountability and Transparency	***High***	***High***
Risk: • The Government of Eritrea has to date not confirmed the existence of a procurement complaints mechanism; • Transparency.org assigns a low country corruption perception index score (23); • lack of a 2-tiered system to handle complaints, a debarment system and an independent and competent local authority responsible for investigating corruption allegations.	High	High
Mitigations: • IFAD can strongly encourage government through policy dialogue to address these shortcomings; • 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 84 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. Adoption of IFAD's Standard Procurement Documents will mitigate the identified risk.		
Capability in Public Procurement	***Moderate***	***Low***
Risk: • Overall, capacity of the procurement team is low; • World Bank templates for ICB, NCB and shopping are being used; • There is no indication that legal and regulatory framework documents are readily available to procurement staff.	Moderate	Low
Mitigations: • Provision of regular training and Technical Assistance; • support on preparation of bidding activities in compliance with IFAD's requirements; • Government commitment to the recruitment of qualified project staff; • With the use of IFAD's SPDs, the quality of documents should improve and be compliant with IFAD's requirements;		

Public Procurement Processes	***Moderate***	***Low***
Risk: • Procurement methods are consistent with IFAD Guidelines. However, the choice of procurement methods should be revisited where national market conditions warrant it; • While ICBs are advertised on UNDB, bidding documents for other procurement methods are shared with bidders in soft copy via a USB pen, but they are only available at the MoA offices; • Procurement plans are of low quality; • Lack of secure storing capacity; • Minutes of bid opening are not sent to bidders; • Contacts are entered into after bid validity has expired. • Contract awards are notified only to participating bidders and publicly advertised.	Moderate	Low
Mitigations: • With the use of IFAD's SPDs and the Procurement Handbook, the quality of documents should improve and be compliant with IFAD's requirements; • MoA should publish all bidding documents on their website; • The use of IFAD's procurement tools will mitigate many of the risks associated to Procurement Planning and Contract Administration; • It is recommended that adequate and secure archiving space is guaranteed for both bids and securities; • Project should have access to advertising on the Eritrean Government's website; • It is highly recommended that government hold bidders responsible for the performance of contracts and cash in performance bonds/guarantees.		
Environment, Social and Climate Impact	**Moderate**	**Low**
Biodiversity Conservation	***Moderate***	***Low***
Risk: There are pressures on biodiversity due to population pressures. There are protected natural reserves.	Moderate	Low
Mitigations: There is a high level of inherent agro-biodiversity in production systems across Eritrea and the project intends to build on this for dietary diversity among other reasons Project land use planning will ensure awareness of and avoidance of areas of potential overlapping of project areas with protected areas of their immediate dispersal/buffer areas.		
Resource Efficiency and Pollution Prevention	***Low***	***Low***
Risk: The traditional production systems of Eritrea are resource optimizing and use minimal external inputs, including few if any inorganic fertilizers, pesticides or herbicides. In any case import costs make this prohibitive for the target group but the project should not exclude for high value crops	Low	Low

Mitigations: Project will explore the options of natural integrated pest management Green manuring will be practiced, while being cognizant of potential competing demands for these same materials A ESMF will include materials on banned substances in terms of pesticides and herbicides, which are in any case will controlled by MoA/Regulatory Services		
Cultural Heritage	***Low***	***Low***
Risk: There is little reason to believe that the project areas would be exposed to or put at risk any protected cultural heritage artifacts	Low	Low
Mitigations: SECAP2020 will be made available to the PMU at both central and zoba levels		
Indigenous People	***Low***	***Low***
Risk: Eritrea does not recognize the concept of 'indigenous peoples' however there are various ethnic groups.	Low	Low
Mitigations: The project targeting strategy has a focus on the vulnerable in each project area, which in turn is selected on the basis of multiple and explicit criteria.		
Labour and Working Conditions	***Substantial***	***Moderate***
Risk: The long standing national requirement of community labour contribution for several weeks a year might represent a risk but a larger risk of triggering IFAD labour related safeguards is the potential of conscript (universal national service) labour being used unremunerated or inadequately remunerated in infrastructure related activities either by contractors and/or as a government contribution	Substantial	Moderate
Mitigations: The project is not expecting to invest heavily in infrastructure development, which significantly reduces exposure to this safeguard risk The government position is that national service is universal and that persons are deployed in a range of jobs throughout the civil service and economy The government has signed the relevant international treaties and regularly exchanges with ILO. IFAD will engage with ILO to potentially field joint technical assistance if relevant to this project Labour risk issues are also detailed in the ESMF		
Community Health and Safety	***Substantial***	***Moderate***

Risk: There will be water retention structure rehabilitation and/or construction, the exact dimensions of which are still to be determined but are expected to be under IFAD SECAP thresholds	Substantial	Moderate
Mitigations: The project will ensure that technically competent persons (engineers) participate in the identification of sites and that any construction is approved according to government regulations applicable and that the same will be clearly documented. These structures will be inspected upon each supervision by a qualified team member.		
Physical and Economic Resettlement	***Low***	***Low***
Risk: No activities anticipated to trigger IFADs very strict thresholds for economic or in particular physical resettlement	Low	Low
Mitigations: n/a		
Greenhouse Gas Emissions	***Low***	***Low***
Risk: The nature of the production system leaves no reason to believe that there will significant risks of GHGs apart possibly from small livestock.	Low	Low
Mitigations: Improved fodder will reduce the already low level of GHGs. No deforestation or additional biomass burning will result from project activities		
Vulnerability of target populations and ecosystems to climate variability and hazards	***Moderate***	***Low***
Risk: Note: this refers to the risk from the project in terms of inadvertently exacerbating the vulnerability of the population by promoting maladaptive practices.	Moderate	Low
Mitigations: A detailed climate risk study will be prepared, which will cover both the risks from the climate to the population and from the project to the population in terms of climate vulnerability		
Stakeholders	**Moderate**	**Low**
Stakeholder Engagement/Coordination	***Moderate***	***Low***

Risk: Project Steering Committee (PSC) not meeting as planned Harmonization between NPCO and Zoba PCOs – financial management, M&E, implementation	Moderate	Low
Mitigations: • Dialogue with GoSE on PSC; • Government has adapted the PSC approach, with the Minister Agriculture holding regular steering meetings with NPCO, complemented by joint field visits of with other Ministers and Zoba Governors • Deployment of participatory tools in AWPB preparation, implementation and monitoring		
Stakeholder Grievances	***Low***	***Low***
Risk: Potential grievances around water infrastructure and diversion of water upstream	Low	Low
Mitigations: • Undertake stakeholders' feedback sessions. • Government implements a bottom-up approach in the identification of investments, hence there is free and prior consent of the communities • Implementation of IFAD's Framework for Operational Feedback from Stakeholders: Enhancing Transparency, Governance and Accountability		

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Integrated Agriculture Development Project

Project Design Report

Annex 10: Exit Strategy

Mission Dates:	8 to 30 June 2020
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Programme Management Department

Annex 10: Exit Strategy

The IADP exit strategy is embedded in the strategic approach of (i) working directly with administrative structures and community leaders at the Zoba, Sub-zoba and Kebabi levels; (ii) building capacity at the grassroots level; (iii) enhancing the focus of economically and financially sound solutions; and (iv) providing international technical assistance. The institutional framework within which the Project will be implemented will continue to exist after its completion and will have been considerably strengthened by the various capacity building activities included in the Project.

Participatory design process

The participatory design process ensures that the Project responds directly to community concerns, private sector priorities and national development policies and strategies. The communities, Farmers' organizations and private sector agencies will assume full responsibility for the operation of facilities.

Capacity building at grassroots level

The table below summarizes the capacity building at grassroots level that should guarantee sustainability of results.

Outputs to be sustained	Capacity building
Maintenance of infrastructure	Enhancing water users associations
Provision of farmers' extension services	Training FFS/AFS lead farmers
Access to improved seed	Training seed producers
Provision of livestock health services	Training para-vets
Improving knowhow about food and nutrition security	Training caretakers at village levels
Provision of business development services	Training of agribusiness trainers and coaches

Institutional capacity building

The table below summarizes the capacity building at institutional level that should guarantee sustainability of results.

Institutions	Capacity building
Agriculture Extension Department (AED)	To enhance its capacity in FFS/AFS (ToT), agri-business development (ToT), nutrition-sensitive agriculture, value addition, cooperative development and marketing services.
National Agriculture Research Institute (NARI)	Strengthen to perform adaptive research targeted on the following subjects: TLST, IPM, development of biopesticides, organic fertilizers, rangeland management, improved indigenous poultry as well as food safety and nutrition.
National Animal and Plant Health System (NAPHL).	To improve genetic potential of animals and disease control, MoA has recently increased investments in the NAPHL, the Poultry Production and Multiplication Centre, Horse Breeding Centre, and Swine and Rabbit Breeding Centre. The Project will further support these efforts in the provision of improved breeding stocks and use of artificial insemination (AI) for dairy heifers (mix-breeds). NAPHL will also be enhanced by ensuring vaccines and veterinary drugs availability and distribution to the decentralized animal health clinics. In addition, training and capacity building of the decentralized health clinics' staff will be ensured, including their capacity to train young para-vets.
Regulatory Service Department (RSD)	Strengthened within the areas of their mandate to inspect farmers and to further decentralize the seed multiplication system will be undertaken;
Planning and Statistics Department (PSD)	Strengthened in programming, monitoring and evaluation
Administration and Financing Department (AFD)	Strengthened in financial management and procurement to smoothly implement project activities;
ZPCO staff	Capacity needs assessment, training and upgrading programmes for Zoba and Sub-zoba staff

International technical assistance

The types of capacity building will be a mix of specialized short and long term TA and upgrading technical capacity of staff through specialized training courses.

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Project Design Report

Annex 11: Mainstreaming themes – Eligibility criteria checklist

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Programme Management Department

Mainstreaming themes – Eligibility criteria checklist

	☐ **Gender transformational**	☑ **Youth sensitive**	☑ **Nutrition sensitive**	☑ **Climate finance**
Situation analysis	☐ National gender policies, strategies and actors ☐ Gender roles and exclusion/discrimination ☐ Key livelihood problems and opportunities, by gender ☐ Use (pro-WEAI) assessment for M&E baseline	☑ National youth policies, strategies and actors ☑ Main youth groups ☑ Challenges and opportunities by youth group	☑ National nutrition policies, strategies and actors ☑ Key nutrition problems and underlying causes, by group ☑ Nutritionally vulnerable beneficiaries, by group	
Theory of change	☐ Gender policy objectives (empowerment, voice, workload) ☐ Gender transformative pathways ☐ Policy engagement on GEWE	☑ Pathways to youth socioeconomic empowerment ☑ Youth employment included in project objectives/activities	☑ Nutrition pathways ☑ Causal linkage between problems, outcomes and impacts	
Logframe indicators	☐ Outreach disaggregated by gender ☐ Women are > 40% of outreach beneficiaries • Pro-WEAI indicator	☑ Outreach disaggregated by age	☑ Outreach disaggregated by gender • Further details to be confirmed	
Human and financial resources	☐ Staff with gender TORs ☐ Funds for gender activities ☐ Funds for Pro-WEAI surveys in M&E budget	☑ Staff with youth TORs ☑ Funds for youth activities	☑ Staff or partner with nutrition TORs ☑ Funds for nutrition activities	IFAD Adaptation Finance $19,389,000 IFAD Mitigation Finance $0 Total IFAD Climate-focused Finance $19,389,000
ECG Remarks	**Gender** **Nutrition** No remarks **Youth** No remarks ☐ No social inclusion themes			