

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

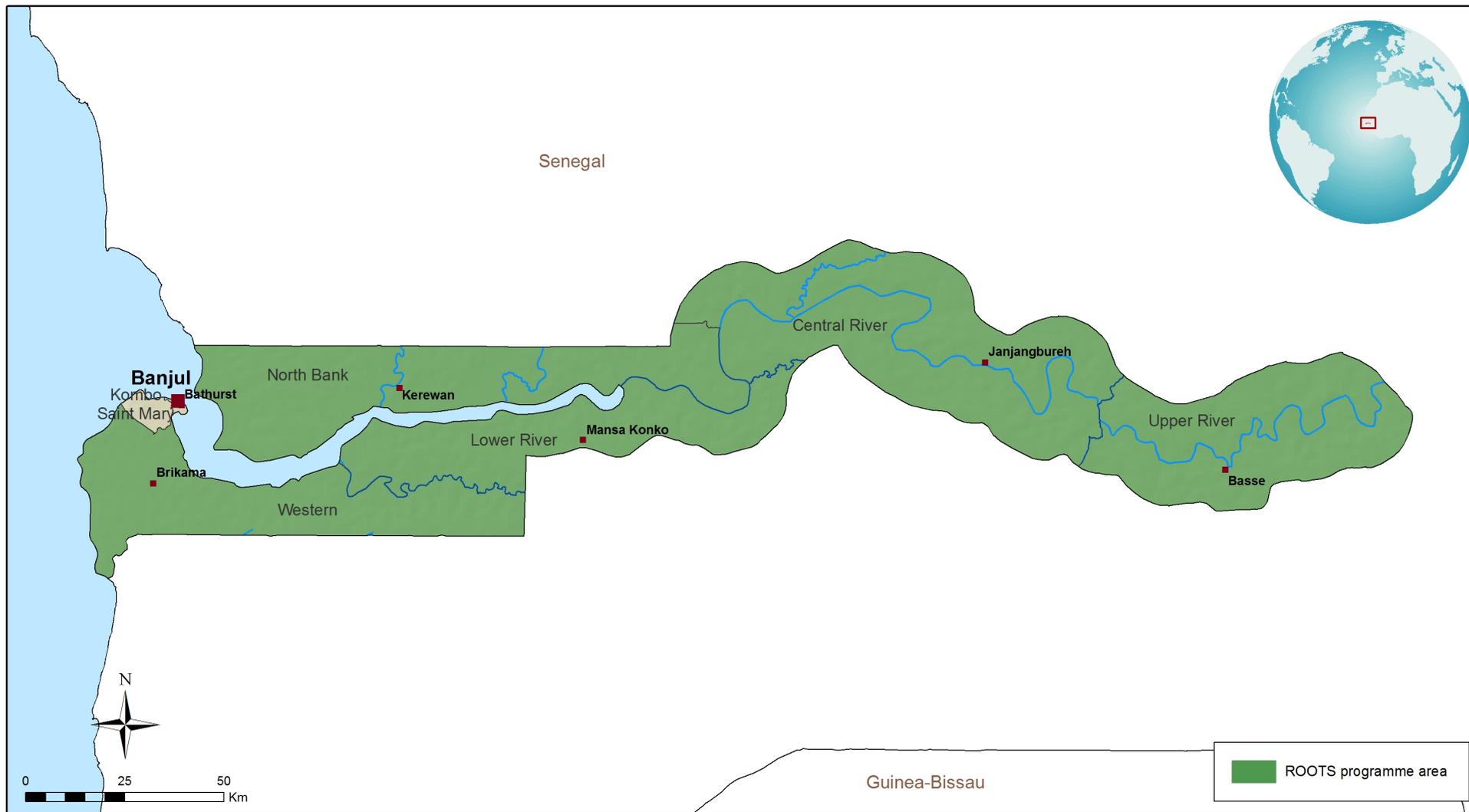
Project Design Report

Main report and annexes

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Map of the Project Area



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IFAD Map compiled by IFAD | 30-04-2019

Abbreviations and Acronyms

LIST OF ACRONYMS

4P	Public-Private Producers' Partnerships
ABC	Agribusiness Capital Fund
AfDB	African Development Bank
ANR	Agriculture and Natural Resources Policy
AVIP	Agricultural Value Chain Interaction Platform
AWPB	Annual Work Plan and Budget
CAADP	Comprehensive Africa Agriculture Development Programme
CBA	Cost-Benefit Analysis
CBG	Central Bank of The Gambia
CIF	Cost, Insurance and Freight
CISF	Capital Investment Stimulation Fund
CLPE	Country-Level Policy Engagement
COSOP	Country Strategic Opportunities Programme
CPE	Country Programme Evaluation
CPCU	Central Project Coordination Unit
CSA	Climate Smart Agriculture
CSN	Country Strategy Note
CU	Credit Union
DCM	Delegated Contract Management
DDI	Diaspora Direct Investments
DPI	FAO Investment Centre
DWPM	Department of Parks and Wildlife
EFA	Economic and Financial Analysis
EIRR	Economic Internal Rate of Return
ECOWAS	Economic Commission of West African States
FAO	Food and Agriculture Organization of the United Nations
FASDEP	Food and Agriculture Sector Development Project
FFS	Farmer Field School
FO	Farmer Organization
FSI	Fragile States Index
GALS	Gender Action Learning System
GANAD	Gambia National Agriculture Database
GBOS	The Gambia Bureau of Statistics
GCAV	Commercial Agriculture and Value Chain Development Project
GCCI	Gambia Chamber of Commerce and Industry
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GHI	Global Hunger Index

GIEPA	Gambia Investment and Export Promotion Agency
GMD	Gambian Dalasi
GNI	Gross National Income
GoTG	Government of The Gambia
HDI	Human Development Index
IFAD	International Fund for Agricultural Development
IFI	International Financing Institution
IMF	International Monetary Fund
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
IsDB	Islamic Development Bank
ITA	International Technical Assistance
IVR	Interactive Voice Response
KM	Knowledge Management
LDC	Least Developed Country
LHDP	Livestock and Horticulture Development Project
LULUCF	Land Use Change and Forestry
M&E	Monitoring & Evaluation
MFI	Micro Finance Institutions
MG	Matching Grant
MIS	Market Information Systems
MoA	Ministry of Agriculture
MoFEA	Ministry of Finance and Economic Affairs
MoFWR	Ministry of Fisheries and Water Resources
MoU	Memorandum of Understanding
MTR	Mid Term Review
NACOFAG	National Coordinating Organization for Farmer Organization of the Gambia
NAFP	National Association of Food Processors
NARI	National Agricultural Research Institute
NAWFA	National Women Farmers Association
ND-GAIN	Notre Dame Global Adaptation Index
NEA	National Environment Agency
NEMA	National Agricultural Land and Water Management Development Project
NGO	Non-Governmental Organization
NPV	Net Present Value
NRFA	National Rice Farmers Association
NSC	National Steering Committee
NVGA	National Vegetable Growers Association
O&M	Operation and Maintenance
OFID	OPEC Fund for International Development

PAFA	Projet d' Appui aux Filières Agricoles
PIWAMP	Participatory Integrated Watershed Management Project
PDO	Project Development Objective
PLAR	Participatory Learning and Action Research
PRIME	Program in Rural M&E
PSU	Project Support Unit
RIMS	Results and Impact Management System
ROOTS	Resilience of Organizations for Transformative Smallholder Agriculture Project
SDG	Strategic Development Goal
SME	Small and Medium Enterprises
SMP	Staff-Monitored Program
SRI	System of Rice Intensification
SSTC	South-South and Triangular Cooperation
TBI	Tony Blair Initiative
TVET	Training and Vocational Education and Training
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
USD	United States Dollars
VAT	Value-Added Tax
VFA	Village Farmers Associations
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure
WAAPP	West Africa Agricultural Productivity Program
WB	World Bank
WFP	World Food Programme

Executive Summary

Context and rationale

Political and socio-economic background: The Gambia is a country in transition since 2016 after a 22-year legacy of authoritarianism. It is currently one of the poorest countries in the world, and faces **significant challenges related to food insecurity, malnutrition, migration, unemployment, and climate change**. Approximately 62 per cent of the population are poor and 48 per cent live below the poverty line of 1.25 USD per day. Agriculture is the principal source of livelihood for the rural population. It provides employment for approximately 70 per cent of the population but contributes only 24 per cent of the GDP. Rural poverty, food insecurity and malnutrition are closely associated with low agricultural productivity, particularly in rain-fed systems, **which affects the most vulnerable groups, namely women and youth**. The annual 3.5 per cent GDP growth rate is insufficient to reduce poverty meaningfully.

The country is one of the most vulnerable countries to climate change because of its geographical location, characterised by high dependence on rain-fed agriculture and severe salt-water intrusion in the lowlands floodplain. The effects of climate change relative to rising sea level and reduced rainfall have increased saltwater intrusion to 150-200 km inland, thereby affecting crop yields. In addition, the country experienced severe droughts in 2011 and 2014, leading to a drop of crop output of 50 per cent. In 2016, the short rainy season led to a drop of crop production, boosting food price inflation. The Government is addressing the main drivers of the country's fragility, namely the structural fiscal and current account deficits, weak public services, high rates of population growth and outmigration of youth, in addition to low agricultural productivity and the negative impacts of climate change and environmental degradation. The Government has made food and nutrition security, as well as climate resilience, national priorities in the drive to the transition to a green economy driven by **small and medium-sized (SME) private sector investments and delivering sustainable and inclusive benefits through the inclusion of youth and women as key economic actors**. Within the context of the Comprehensive Africa Agricultural Development Programme (CAADP), the Government is preparing a new Gambia National Agricultural Investment Plan - Food and Nutrition Security (GNAIP-FS, 2017-2026). However, the **country, on its own**, has insufficient financial resources and technical capacity to build resilience for transformative smallholder agriculture.

Project rationale. The Government of The Gambia has committed to a stronger agricultural performance since the democratic transition and has asked IFAD to co-finance the Resilience of Organizations for Transformative Smallholder Agriculture Project (ROOTS). In addition, the Government has stressed the need to capitalize on the gains of the ongoing IFAD-funded National Agricultural Land and Water Management Development (NEMA) **program**.

ROOTS will build on the successes and draw lessons from IFAD-funded ongoing and past projects **captured in the 2016 Country Programme Evaluation (CPE)**,¹¹ namely (i) NEMA; (ii) the Lowlands Agricultural Development Programme (LADEP); (iii) the Participatory Integrated Watershed Management Project (PIWAMP); (iv) the Rural Finance Project (RFP); and (v) the Livestock and Horticulture Development Project (LHDP). These investments **have, since 2002**, addressed the main constraints to the rice, livestock and horticulture value chains, as well as rural finance. ROOTS will consolidate the gains of these projects and build on other donor-sponsored investments. It will focus on upscaling NEMA achievements in the rice and vegetable value chains and contributing to the improvement of household food and nutrition security and farm incomes while transitioning smallholder farmers (particularly youth and women) from subsistence to commercial entrepreneurs. **The project will focus on women inasmuch as they are the main work force for vegetable and rice production. Finally, ROOTS will give special attention to key issues raised in the CPE such as the targeting strategy to reach poor farmers, deepening partnerships opportunities, project management performance and oversight for effective and efficient, and delivery mechanisms in the Government to enhance sustainability of benefits.**

ROOTS will develop and consolidate rice production schemes and upgrade vegetable garden business models built under NEMA to produce surpluses, while mitigating potential risks along the rice and vegetable value chains in the context of climate change. The reason for choosing rice is the fact that The Gambia is a net importer of this staple food with a per capita consumption of 117kg per annum -- **about 106 per cent above the world average of 56.9kg --of which 83 per cent is imported. The current rice consumption is about 215,000 MT of which only 36,000 MT is produced locally and 179,000 MT is imported.** As food security and nutritional adequacy requires vegetables to complement rice, the Project will support gardening to meet household demand but also a growing local market NEMA and other recently completed projects offer relevant lessons and evidence to continue investing in rice (average of 2.5 t/ha in lowlands against 0.7 t/ha baseline and 3 t/ha in tidal areas against 1.5 t/ha baseline) and vegetable gardens in the most vulnerable areas and communities. Most of the rice production systems along the Gambia River use tidal and gravity irrigation, which implies a low and competitive production cost.

Project description

Project area. ROOTS will be implemented in five regions: (i) Central River Region (CRR); (ii) North Bank Region (NBR); (iii) Lower River Region (LRR); (iv) West Coast Region (WCR); and (v) Upper River Region (URR). In these regions, 39 districts have been selected on the basis of indicators related to poverty, vulnerability, remoteness, quality and scale of infrastructure, and harmonization with other donor-supported programs.

The **target group** comprises the population in these catchment areas, in particular smallholders, micro-entrepreneurs, and poor rural youth and women. Approximately 40,000 households or about 320,000 people (over 10 per cent of the population) will benefit from the project. Due to the targeted rice and vegetable value chains, with the core of the producers being women, as well as the current demographic structure, it is expected that 80 per cent of beneficiaries will be women and 25 per cent will be youth. ROOTS will proactively facilitate access to project activities for women and youth to productive assets (land, water), financing, knowledge as well as their participation in project implementation, community representation and decision-making. As more than 10 per cent of The Gambian population are people with disabilities, the Project will seek to involve them in the most appropriate segment of the selected value chains.

The **goal of the project** is to improve food security, nutrition and smallholder farmers' resilience to climate change in The Gambia.

The **Project Development Objective (PDO)** is to increase agricultural productivity and access to markets for enhanced food security and nutrition, and resilience of family farms and farmer organizations.

Theory of Change. To achieve its objective, the project will support targeted investments in infrastructure, and the technical and organizational capacities of farmers' organizations, particularly youth and women and other stakeholders along the rice and horticulture value chains. For these value chains, accessible markets exist domestically and regionally and productivity gains for food security and nutrition are achievable through the adoption of proven climate-smart technologies and practices and better access to markets. ROOTS will scale-up achievements from NEMA, while building synergies with other partners' work geared towards increasing climate change resilience and value-chain development. The approach will be based on: (i) consolidation of NEMA's investments; (ii) sustained investments and support to women organization, youth producers and farmers' organizations; (iii) supporting value chain interaction platforms to enable Public-Private Producers' Partnerships (4Ps); (iv) better access to financing; (v) mainstreaming environmental and climate, gender and nutrition in the interventions; and (v) **project management and delivery mechanisms to improve performance and enhance sustainability of benefits.**

Components and expected outcomes

Component 1. Agricultural productivity and adaptation to climate change The expected outcome is "Improved smallholder farmers' productivity through the adoption of sustainable and climate-resilient and nutrition-sensitive technologies and practices".

Under sub-component 1.1, the Project will: (i) consolidate 1,300ha of existing **poorly performing** tidal irrigation and develop 2,800ha of new tidal irrigation on existing agricultural lands (**average size per community land between 25 and 75ha**); (ii) develop 200ha new wet-season valley water control cascaded dykes; (iii) develop 800ha new micro-catchments runoff control dykes; (iv) establish and strengthen Water User Management Units; and (v) upgrade 20km of causeways to access 800ha rice-growing swampy areas.^[2] In addition, the Project will upgrade 40 vegetable gardens and develop 30 new ones. Around the production sites, ecosystem preservation activities such as the rehabilitation of 1,300ha of mangroves and 1,400ha of community forests will be financed.

Sub-component 1.2 will support (i) the access to various agricultural services (extension, input provision, financial education) with the focus on the promotion of **Farmers' Field Schools** for rice and vegetables; (ii) the emergence of 240 youth-led businesses that will mainly focus on the provision of services to the value chains; and (iii) capacity development of grassroots farmers' organisations (FOs) so that they develop services for their members, **particularly women-led farmers organisations.**

Component 2. Access to markets: The outcome of this component is "inclusive commercial partnerships between strengthened FOs and buyers through public-private producers' partnerships".

Sub-component 2.1 will focus on value chain and market linkages. It will finance: (i) agricultural value-chain interaction platforms (AVIPs)-- **one rice AVIP and one vegetable AVIP will be established in each region targeted by the project with key value-chain stakeholders (producers, processors, traders, transporters) and the voice-based market information system introduced by NEMA will be scaled-up;** (ii) capacity development of the National Coordinating Organization for Farmer Association in The Gambia (NACOFAG) as well as the national commodity organizations of food processors, rice and vegetable growers; and (iii) the construction of markets and roads.

Sub-component 2.2 will support business ideas of **4Ps, particularly those** focused on post-harvest and value-addition elements. The Project will ensure that: (i) FOs and SMEs prepare high-quality business plans **with a particular focus on women-led FOs and SMEs;** and (ii) matching grant resources are efficiently mobilized and utilized **As a pilot, and after the mid-term review, matching grant funds will be blended with potential private capital from the Gambian diaspora;** and (iii) post-investment business support is available to sustain the 4Ps, through linking the SMEs to specialized business development services, including certification and food safety standard

Component 3: Project management, institutional development, and citizen engagement The objective is to facilitate: (i) efficient coordination and monitoring and evaluation of project activities; (ii) knowledge management, communication and learning; (iii) stakeholder awareness and participation through timely and transparent communication of results and consistent citizen engagement; and (iv) policy dialogue and South-South and Triangular Cooperation.

Costs and financing. The total cost of the **Project** is US\$80 million for six years. Project costs by component are as follows: (i) Component 1: US\$3 million; and (ii) Component 2: US\$18.4 million. The management and coordination expenses are US\$8.3 million or about 10 per cent of the project costs. **The project financing includes: (i) an IFAD grant in accordance with the Debt Sustainability Framework for US\$17.016 million (21.3 per cent); (ii) an IFAD loan for US\$4.254 million (5.3 per cent), including US\$700 000 for the FIPS; (iii) a GEF grant for US\$5.3 million (6.6 per cent); (iv) an OFID loan for US\$10 million (12.5 per cent); (v) Agence Francaise de Developpement (AFD) grants of US\$11.17 million (14.0 per cent); (vi) the Government of the Gambia for US\$5.4 million from tax exemptions (6.8 per cent); and (vii) beneficiaries for US\$6.2 million (7.8 per cent). The financial gap is estimated at US\$20.6 million (corresponding to 25.7 per cent of the project costs) and could be covered from the FAD12 allocation (subject to availability of funds, to financial conditions to be determined, and to internal procedures) or from other financiers to be identified.**

Benefits. The financial analysis shows profitable investments with an Economic Internal Rate of Return of **16.3 percent** and generating a net present value (at 6 percent discount rate) of US\$37.1 million, including the environmental benefits (on a budget of US\$80 million). The results are robust under various scenarios of implementation delays, reduced benefits and adoption. The economic analysis takes into account all aggregate benefits of the production activities, 4Ps and environmental co-benefits. The sensitivity analysis shows robust results in all scenarios using different risk levels.

Risks

Environmental and social assessment ROOTS is classified as a category B project, as it is not expected to have significant negative environmental and social impacts. ROOTS also includes a set of technologies and approaches to improve resource use-efficiencies and prevent Greenhouse Gas (GHG) emissions, such as the System of Rice Intensification (SRI), as well as agroforestry and ecosystem rehabilitation interventions. The EX-ACT carbon balance analysis shows mitigation potential of 16,900 t CO₂-eq over 20 years. No involuntary resettlement is envisaged.

In line with category B **project classification** and national and international regulations, land development per community are all less than 80 ha per community due to the small size of the country. Road length to be constructed is also less than 10 km per site. An elaborate ESMF has been produced and provides information on the various environmental and social impacts. The ESMP has also proposed necessary mitigation measures and includes an ESMF implementation plan with a budgetary allocation of US\$2,938,889. The NEMA ESMP was updated to complement the ROOTS ESMF. **ROOTS will not support Category A activities (see list in the ESMF) and in addition and in case changes occur during implementation, as per IFAD policy, the project will require an upgrade and resubmission for review to the Evaluation Committee and approval by the Executive Board.**

Institutional arrangements and implementation

Building on the CPE outcomes and recommendations, and unlike the NEMA centralized project coordinating unit (PCU) located in Banjul, a new decentralised Project Support Unit (PSU) will be established under the Central Project Coordinating Unit (CPCU) of the Ministry of Agriculture (MoA). In each of the five regions, a Regional Field Coordinator (RFC) position will be financed to strengthen project delivery, ensure institutional sustainability and improve the synergy and complementarity with other on-going projects. A transparent procedure for staff recruitment and for their performance management will be established in consultation with IFAD and any change in staff assigned to IFAD-supported projects will only be undertaken following the required consultation between the Government and IFAD. The ROOTS PCU will work closely with the Delivery Unit located at the state house and the Central Project Management Unit of the Ministry of Finance and Economic affairs. A national Project Steering Committee (PSC), comprising various public, private and civil society stakeholders, will oversee project implementation and provide strategic guidance. A capacity building strategy will be developed to accompany implementation of the project from the central to the local level.

A strong partnership will be built by ROOTS with various partners Memoranda of Understanding (MoUs) with public institutions, Apex FOs and Non-Governmental Organizations (NGOs), **relevant government departments/agencies and United Nations agencies (FAO, UNDP)** will be the main implementation modality for partnerships, complemented by outsourced national and international service providers. MoUs and contracts will be assessed against performance on an annual basis

Planning, monitoring and evaluation, and knowledge management and citizen engagement will be combined in order to establish a robust and user-friendly learning and reporting system in line with IFAD's Operational Results Management System (ORMS). **Furthermore, ROOTS will support the development and implementation of a framework and system for agricultural monitoring and evaluation within the Ministry of Agriculture.** This system will also feed the Gambia National Agriculture Database (GANAD). The main activities to be carried out are: (i) the Annual Work Plans and Budgets (AWPB); (ii) the M&E manual and market information system (MIS); (iii) monitoring implementation progress reports; (iv) a baseline survey, mid-term evaluation and impact analysis; (v) training on IFAD's flagship Program in Rural M&E (PRiME); and (vi) participatory **monitoring and evaluation**, with third party monitoring/citizen engagement.

The innovations promoted by ROOTS consist of a series of interventions building on the successful results of previous projects in The Gambia and sub-region. These are: (i) upgraded vegetable gardens with new climate-smart features; (ii) hydro-agricultural schemes and infrastructure to better manage salinity and drought/floods, constructed under the oversight of a delegated contract management company; (iii) marketing and food processing; (iv) access to private capital from the diaspora community through crowdfunding platforms; (v) **exchange of learning with and among project staff, government bodies and beneficiaries; and vi) policy dialogue and South-South and triangular cooperation to learn from global and regional experience, particularly from Senegal.**

Exit strategy and sustainability will be ensured by: (i) the financial and economic profitability of proposed investments; (ii) strengthened public institutions; (iii) better equipped youth training institutions stressing youth and women leadership; (iv) empowered and autonomous farmers' organizations at all levels **that build the communities' sense of ownership and their operation and maintenance capacity; (v) sustainable and well-managed infrastructure by communities and Farmers Organizations with participation of women in decision making processes; (vi) clear operation and maintenance arrangements and responsibilities for large and complex infrastructure; (vii) promotion of a more structured approach to value chain support and due consideration for inclusive rural financial services; and (viii) review at the mid-term review, with adjustments if necessary, of financing mechanisms with the Gambian diaspora.**

1. Context

A. National context and rationale for IFAD involvement

a. National Context

1. **Political and macro-economic context.** The Gambia is a nascent and fragile democracy, transitioning from 22 years of dictatorship and recovering progressively from misrule and diplomatic isolation. Since 2017, the country has been politically stable and the Government enjoys approval among the electorate (EIU, 2018).^[1] Pledges to respect human rights and promote good governance, as well as restored relations with Senegal and ECOWAS contributed to rebuilding confidence of foreign donors and private investors. The Gambia's fragile policy and governance context is still marked by a low rank in the 2018 Corruption Perception Index (93rd out of 180) and the World Bank's 2019 Doing Business Index (149th out of 190). Foreign Direct Investment (FDI) remains low in spite of progress from US\$37 million in 2010 to US\$87 million in 2017, while personal inflows of remittances are almost three times the level of FDI.
2. Gross Domestic Product (GDP) growth has increased from minus 0.9 per cent in 2014, to a positive 4 per cent in 2016 and 6.6 per cent in 2018, driven by private consumption, public investments, remittances,^[2] exports and re-exports of goods and services. The services sector, mainly tourism and government, contributes 60 per cent to GDP, agriculture 18 per cent and the industrial sector (construction and agro-processing) 12 per cent (EIU, 2018). At end-2017 the public debt amounted to more than 129 per cent of GDP, which has created a significant risk of debt distress and threatens public and private investments (EIU, 2018). Given structural twin deficits of both the fiscal account (7.5 per cent of GDP in 2017) and current account (19 per cent of GDP in 2017), the country requires donor support to pursue public investments towards achieving the Sustainable Development Goals (SDGs). Global indices reflect the country's challenges. For example, its score on the Fragile States Index (FSI) worsened steadily from 80.6 in 2010 to 89.4 in 2017 before improving to 83.9 in 2019; it is now ranked the 47th most fragile of 178 countries.
3. The Gambia is the smallest country on mainland Africa with an area of 10,689 km² and a population of 2.1 million that will double in 20 years, due to a growth rate of three per cent (World Bank, 2017). The population is very young - 40 per cent is below 15 years and 25 per cent between 15 and 25 years old. Youth rural-urban migration and overseas emigration are key facets of the population dynamics; 40 per cent of Gambians live in rural settings and about 3.1 per cent of them migrate annually (2019-2024 COSOP). Gambian citizens overseas represent more than four per cent of the total population or 90,000 emigrants (IOM, 2019). About 40 per cent of the rural households receive financial transfers from a relative living elsewhere in The Gambia or abroad (70 per cent). Personal international remittances doubled from US\$110 million in 2013 to US\$223 million in 2018 providing a safety net for rural households and an opportunity for investments from the diaspora. Large-scale emigration over the past decade has drained the country of its most educated and productive workers, especially in rural areas. As a result, there is shortage of agricultural labour due to the exodus of young **people from rural areas. The number of households as counted in the 2013 population census increased from 157,494 in 2003 to 229,500, an increase of 45.7 per cent. The 2013 census figures indicate an average household size of 8.2 in 2013. The large households in the Gambia reflects the fact that many people continue to live in traditional household settings in which members of different generations live under the same roof. This requires better targeting to ensure the best return on investment.**
4. **Poverty (SDG1).** Notwithstanding a poverty reduction of 10 per cent over the last ten years, The Gambia remains

one of the poorest and most unequal countries in the world. Sixty-two per cent of the Gambians live on less than US\$10 per day and 48 per cent live below the national poverty line of US\$1.25 per day. The UNDP classifies The Gambia as a Least Developed Country (LDC) with a Gross National Income (GNI) per capita of US\$450 in 2017 and a Gini-coefficient of 0.451 (UNDP, 2018). A Human Development Index (HDI) of 0.460 in 2018 puts The Gambia in the low human development basket (174th position). This HDI reflects the multi-dimensional aspect of poverty, with low literacy and education levels, poor health indicators, and weak public infrastructure and services. Poverty is more a rural phenomenon as 74 per cent of Gambians below the national poverty line live in rural areas (World Bank, 2017).^[3] Rural poverty and food insecurity are related to low productivity of rain-fed farming systems, particularly in the Lower River Region.

5. **Small and medium enterprises** (SMEs) should generate most of the growth required to meet the SDGs^[4] They create income for over 50 per cent of the population, employ 40 per cent of youth, contribute 20 per cent to GDP and represent 99 per cent of the private sector. In agriculture, SMEs provide inputs, processing, marketing and other services **and most are youth and women-led.**

6. **Agriculture** employs 70 per cent of the labour force, contributes two thirds of youth (18-35 years) employment and provides 75 per cent of household income. Farming is mainly rain-fed, with three per cent of arable land under irrigation, although irrigation is expanding in the floodplains along The Gambia River, mainly for cultivation of rice and vegetables. Small-scale and mixed cropping systems (rice, millet, maize, sorghum and cassava), traditional livestock rearing, semi-commercial production (groundnut, cotton, and sesame), horticulture and a vibrant fisheries sub-sector characterize the sector. Despite its agricultural potential, The Gambia relies on imports for nearly half of its cereal consumption, so that international food prices strongly influence domestic prices. Rice consumption, **per annum**, amounts to 117 kg per capita, about 106 per cent above the world average of 56.9 kg, of which 83 per cent is imported. **The current rice consumption need of the country is about 215,000 MT of which only 36,000 MT is produced locally with the remaining 179,000 MT met through imports. Local rice still remains competitive vis-à-vis imported rice.** Vegetables are in high demand to complement diets. With growing local demand, including a flourishing tourism sector, aggregate food production is far below aggregate demand. Many rice-growing floodplains in The Gambia have been affected by increasing saline-water intrusion over the past years, thereby reducing available cultivable land. Rice fields located mainly in the western part of the country (West Coast, Lower River and North Bank Regions) have also been impacted by the effects of climate change. The future Sambangalou dam **located 930 km from the border of Guinea** on The Gambia River in Senegal will push the salt waterfront about 100 km upstream. **However, the impact will be limited in the selected target areas, which are far from the dam. The location of the targeted areas are suitable for various water infrastructure designed to help farmers withstand potential salt intrusion. An ESMF has been prepared to address any potential environmental and climate impacts.**

7. **Agriculture strategies and policies.** The National Development Plan (NDP 2018-2020) envisions a transition to a green economy, driven by SME private sector investment, the use of Climate Smart Agriculture (CSA) technologies, and the inclusion of youth and women as key actors. Under the ECOWAS-led CAADP process, the GoTG is preparing a new phase of the Gambia National Agriculture Investment Plan - Food and Nutrition Security (GNAIP-FS, 2017-2026) as strategic framework for food and nutrition security and environmental management. Other relevant policies include: (i) the Agriculture and Natural Resources policy (ANR 2017-2026); (ii) The Gambia Environment Action Plan; (iii) the National Climate Change Policy, (iv) the National Adaptation Plan; (v) The Gambia Sustainable Land Management Investment Framework (GAMSIF, 2016-2020); (vi) the National Nutrition Policy 2010-2020; (vii) the National Youth Policy 2009-2018; (viii) the Gender Policy 2010-2020; and (ix) The Gambian Diaspora Strategy. **Nevertheless, being a country in transition from extreme fragility to greater resilience to shocks, the main legacies of 22 years of authoritarianism are weak public institutions, limited public administration capacity, and a depleted skills base. This has weakened public sector institutions where there is insufficient capacity for designing and implementing effective programs, particularly in the agricultural sector. ROOTS will build on the CPE recommendations to support capacity strengthening of the Ministry of Agriculture with a more decentralised PCU, fast start up through the FIPS, a more robust M&E system, and transparent and efficient performance management.**

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

8. **Climate change.** The Gambia is one of the most vulnerable countries to adverse climate change impacts, ranking 143rd out of 181 countries in the ND-GAIN Index. The mean annual temperature has increased by 1.0°C since 1960. **Climate change projections predict an increase by 1.1 to 3.1°C by the 2060s, and 1.8 to 5.0°C by the 2090s (UNFCC, 2016).** Linear trends indicate that wet season rainfall has decreased significantly between 1960 and 2006. The country is facing pronounced risks of higher temperatures, more erratic but lower rainfall, more frequent droughts and lengthened dry spells, significant loss of soil fertility, and potential for flooding and submersion of large land areas given rising sea levels. Land degradation, salinization, coastal erosion and land quality reduction are significant. Combined, these factors are serious threats to agricultural productivity and national food security. The Gambia has signed the Paris Climate agreement and submitted its Intended Nationally Determined Contributions (INDC) to reduce its **greenhouse gas (GHG) emissions. Women and youth are most impacted by the effects of**

climate change.

9. Poverty disproportionately affects youth with 60 per cent of the poor under the age of 20. Youth, particularly rural youth, have low levels of education (0.372 education index)^[1] and vocational training (three per cent) compared with regional comparators and leave school earlier than their urban counterparts. They have very limited access to land, assets and financing to establish enterprises and farms. Consequently, unemployment of rural youth is as high as 37 per cent,^[2] compared to 12.9 per cent nationally (World Bank, 2018). The youth exodus has important implications for availability of farm labor, services and capacity, as those receiving vocational training frequently migrate. **ROOTS will ensure that the project is youth sensitive and youth are represented at all levels of decision making.**
10. **Gender (SDG 5).** The Gambia is a patriarchal society with cultural values and roles constraining female participation in society and leadership. The 2015 Gender Inequality Index (GII) ranks The Gambia 148th out of 159 countries. Women represent 70 per cent of the agricultural labor force. They have, however, minimal control over their own land, income and access to credit, and are vulnerable to climate change. The labor hours of women farmers are disproportionately high in comparison with men. Gender parity exists at the preschool, primary, and secondary levels, but inequality remains in tertiary and vocational training. The literacy rate for women is only 40 per cent compared with 64 per cent for men. However, female-headed households are less food insecure than male-headed households, and poverty is more prevalent in male-headed households (50.9 per cent) than in female-headed households (38.3 per cent).^[4] **Under ROOTS, tailored support will be provided to female-headed households working on rice and vegetable cultivation. Moreover, training and awareness raising will be organised to increase the involvement of men in support of gender equality, increase the role of men in household related work, and ensure that the gains made in decision making at various levels will continue to exist. To sustain this work, gender and youth mainstreaming should be pursued at all levels, including among project staff.**
11. **Nutrition (SDG 2).** The Gambia's deep poverty and inadequate social services are manifested in the poor nutritional status of the population, tenuous food security and malnutrition. The country is on the verge of a nutrition emergency. The 2018 Global Hunger Index (GHI) ranks The Gambia 75th out of 119 countries (scoring 22.3) with a "serious" level of hunger. National stunting and wasting rates are a "critical high" 25 and 11 per cent (GHI, 2018). Twenty per cent of infants are born with low birth weights and 28 per cent of children under five years are stunted, increasing the risk of impaired cognitive development (World Bank, 2018). More than one third of child deaths are due to undernutrition. Anaemia affects more than 75 per cent of pregnant women and preschool-aged children and Vitamin A deficiency is wide spread. **There are clear regional dimensions to maternal and child malnutrition, with areas such as Basse, Kantur, Kerewan and Janjanbureh (North Bank, Central and upper regions) showing higher prevalence. The long term impact of such forms of malnutrition can be detrimental to the population and economy.**

c. Rationale for IFAD involvement

12. At the conclusion of the IFAD Country Programme Evaluation (CPE) and during consultations on the new COSOP 2019-2024, the Government of The Gambia (GoG) requested IFAD-assistance for the financing of the Resilience of Organizations for Transformative Smallholder Agriculture Project (ROOTS) in order to scale-up the National Land and Watershed Management and Development Project (NEMA) in five regions. The financing will be based on the two IFAD replenishment cycle allocations (2019-2021 and 2022-2024).
13. ROOTS will support the GoTG in its strategic vision captured in the National Development Plan (NDP 2018-2020). ROOTS will deal with key challenges identified in the CPE: (i) the country's inability to meet domestic food requirements; (ii) the country's inability to address food and nutrition security and diversification of diet; (iii) the low productivity driven by an input system and farming model that is inefficient and not adapted to climate change; (iv) when market demand exists, the necessity to establish partnerships between producers, the public sector, and private stakeholders; and v) improvement of the procurement systems and better project management arrangements.
14. Committed to stronger agricultural performance, the GoTG has stressed the need for IFAD to capitalize on the gains of NEMA by scaling up rice and vegetable production and supporting better access to markets through commercial partnerships. ROOTS will make use of opportunities, such as the existence of local and regional markets -- particularly with the tourism sector and with its neighboring country Senegal -- while mitigating potential risks along the rice and vegetable related value chains in the context of climate change. In addition, after two decades of misrule that eroded public service competencies, the sector lacks the capacity to efficiently deliver essential rural services such as extension advice for competent and skilled farmers to transform the agricultural sector. Institutional capacity building will be required.
15. The Project will contribute to achieving the 2019-2024 COSOP objectives. The 2019-2024 COSOP has two inter-related strategic objectives (SOs). Under SO1, the productivity and resilience of Gambian family farms are sustainably enhanced to improve food security, nutrition, and job creation, particularly for youth and women. Under SO2, the management capacity and inclusiveness of professional farmers' organizations, cooperatives and SMEs are improved to enhance farmers' ability to secure access to communal assets, markets and agricultural value chains.

16. **Donor coordination.** As recommended by the CPE, **ROOTS will widen broaden IFAD's partnerships with other institutions including other development partners, NGOs and civil society organizations, the private sector, relevant government departments/agencies and UN agencies.** In March 2019, IFAD was designated by the GoTG as lead donor of the Technical Working Group (TWG) set up by the Ministry of Agriculture and **comprised of representatives of the resident donors, Office of the President, and various ministries including the Ministries of Finance and Agriculture. The TWG coordinates resource mobilization for the implementation of the National Development Plan. It also promotes cross sector coordination among the Ministry of Youth, the Ministry of Environment Climate Change Water and Wildlife, the Ministry of Women's Affairs, the Ministry of Local Government, the Ministry of Trade, the Ministry of Finance and Economic Affairs, the State House and the Delivery Unit. The TWG complements the informal agriculture donor working group for enhanced collaboration and coordination of operations supported by IFAD and World Bank.**

Table 1: Summary of investment to Agriculture Sector as of May 2019

	Sector : [Agriculture]	GDP (30%) Export (40%) Labor (75%)
Organization	Intervention Areas	% contribution out of a total of 144.78 million USD for 2015
AfDB/GAFSP	Food & Agriculture Sector Development Project (FASDEP)	19%
AfDB	Program building resilience against food and nutritional insecurity in the Sahel (P2RS)	9%
World Bank	West Africa Agricultural Productivity Program (WAAPP)	9%
EU-FAO	MDG 1c	5%
IFAD-IsDB	National Land and Watershed Management and Development Project (<i>Nema</i>) – Rice and vegetable value chains development	45%
IsDB	Gambia Agricultural Commercialization and Value Chain Management Project (GCAV)	13%
Existence of Thematic Working Groups (informal)	Lead (IFAD) since March 2019	
Existence of Integrated Sector Approaches	No	

B. Lessons learned

17. The ongoing NEMA project and other past projects^[1] offer relevant lessons that are incorporated in the ROOTS design. They can be summarised as follows:
18. **Develop a new country strategic opportunities programme (COSOP) as a framework for ROOTS: The COSOP, which was approved in April, stressed the need for projects to reflect IFAD's niche and comparative advantage, involve broad-ranging consultations with Government officials, potential beneficiaries and other key stakeholders, and be built on the CPE's recommendations and lessons from past activities.**
19. **Start-up and implementation support:** Implementation of IFAD projects in The Gambia have faced three major constraints: (i) slow start-ups, (ii) weak project teams and service providers, and (iii) cumbersome procedures and procurement. To ensure a fast start-up, ROOTS will apply for FIPS (Faster Implementation of Project Start-up). Implementation of past and ongoing projects has been compromised by an inability of project staff to provide adequate technical guidance and management oversight. IFAD and the GoTG will pay attention to adequate staffing configurations, with international technical assistance **as appropriate. IFAD will support capacity strengthening of the Ministry of Agriculture over the long-term. Through the FIPS, the Ministry should make available sufficient staff and financial resources for M&E activities in a timely manner, both at institutional and project levels.**
20. **Strengthen project management performance and oversight for effective and efficient delivery mechanisms in the Government: Unlike under NEMA, there is a need for decentralized project support structure to be closer to the staff where activities will be implemented. The project coordinating unit (PCU) will continue to be in Banjul but in each region ROOTS will post technical agents on project sites to ensure efficiency and ownership. In order to ensure the quality and continuity of project staff as one of the key elements for improved project management and implementation, the Government will establish a transparent procedure for staff recruitment/assignment, and their performance will be assessed in close consultation with IFAD. Any change in staff assigned to IFAD-supported projects is expected to be undertaken following consultations between the Government and IFAD, and dismissals will need to be based on proof of misconduct or unsuitability of the staff member in question. Furthermore the role of project steering committees (PSCs) in oversight will be clarified as well as the appropriate representation (in terms of calibre/levels and institutions, including various relevant partners and not only the government agencies). A regular monitoring of the PSCs will be conducted.**
21. **Project targeting strategy:** Include activities aimed at women, youth and vulnerable groups, including people with disabilities. Past projects in The Gambia have had a high percentage of women and youth beneficiaries because of their focus on rice and vegetables. However, women groups require specific measures to change gender dynamics and close gender gaps. Also, the Songhai Training Centre, which has delivered successful results in other West African countries, is a relevant partner to incubate and engage youth in agriculture, as a partner and service provider for capacity development.
22. **Small-scale infrastructure:** Irrigation **infrastructure** in tidal and lowland areas and gravel roads resulted in significant positive impacts on the local economy and employment. However, past projects often faced problems with poor infrastructure design, poor quality control/supervision and insufficient contract management resulting in inefficient irrigation schemes. As a consequence, the use of third-party quality management companies should be considered where the implementation capacity for infrastructure development is low (similar to the approach followed in several other countries, e.g. Nigeria).^[2] Furthermore, choice of technologies must be more appropriate for farming conditions **and the operation and maintenance (O&M) capacity of the user. The adoption of climate resilient technologies by women will be encouraged and supported.** IFAD investments should prioritize lower cost, easier to maintain equipment that is adapted to the requirements and capacities of smallholders, increasing the chances of sustainability. Rice and vegetable yields increased substantially on irrigated land, while surpluses were marketed in new markets including the Senegalese border markets. Village roads built under NEMA have boosted the local economy and improved livelihoods. Household food security and nutrition improved during NEMA as around 20 per cent of the vegetable production is consumed and 80 per cent sold in markets, and for rice 80 per cent is consumed and 20 per cent marketed.
23. **Water Users Associations (WUA): Effective and efficient WUA can improve results. Although most of the WUA are not performing at their highest level, past successes have been due to: participatory design of irrigation infrastructure, use of technologies that fit their financial capacities and labor resources; appropriate distribution of water in rice plot and vegetable gardens; participation in decisions about water allocation across whole river basins; joint management and maintenance of the infrastructure; joint management and governance of services beyond water management; social cohesion and dispute resolution; public-private partnerships; and sustainable management of common resources. Under ROOTS, the experiences gained on irrigation schemes built under previous IFAD projects will be consolidated, enhanced and scaled up. Women will be included in key decision making processes and the maintenance of infrastructure.**
24. **Expanding the System of Rice Intensification (SRI):** Lessons learned in The Gambia show that the SRI raises yields substantially -- from an average 4.25t/ha up to 9t/ha versus 2t/ha for conventional farming -- while cutting

water use by up to 50 per cent (which allows cultivation of a wider area and more beneficiaries), reducing GHG emissions and mitigating the impacts of climate change by making rice fields more resilient. ROOTS will invest in irrigation infrastructure, while the most common irrigation scheme is tidal and lowland. This investment will be used by beneficiaries only during dry seasons to produce rice, increasing productivity.

25. **The Farmers' Field Schools (FFS) approach:** A GoTG-priority, this proved effective under NEMA and the EU-funded FAO MDG-1c projects to promote SRI. The Government has recently released a National Extension Policy. Within this policy, climate change adaptation and use of the FFS approach are both emphasized. To accompany the new policy, a detailed National Extension Implementation Strategy will be developed that will turn the policy into concrete actions **in 2019, with FAO-Gambia's support**. ROOTS will seize this opportunity to make important contributions to the development of extension services. FFS focused on vegetables to support entrepreneurship will be supported.
26. **Land tenure issues:** These will be addressed by building on the approach developed under NEMA, where the National Women Farmers' Association (NAWFA) with support from the Women's Bureau, supported women's vegetable *kafos* in securing land access rights. This resulted in community authorities signing contracts, which officially guarantee long-term land rights to *kafos'* members. For rice, the Project will engage in policy dialogue, particularly on the implementation of **Committee on World Food Security (CFS) Voluntary Guidelines on the Responsible Governance of Tenure (VGGT)**, to increase access to land for women farmers **and youth**. **The project will work closely with the relevant authorities to allow land access for youth and women in line with land tenure systems in place (Informal and forma) and build on LADEP experience in organizing access to land for women under the traditional land governance system with recognition in the formal land tenure system. This resulted in two additional months of rice self-sufficiency at the national level.**
27. **Upgrading and scaling up community vegetable gardens:** The community gardens should be an average size of 3-5 ha include boreholes with elevated tanks and solar pumping systems, pipe networks, concrete reservoirs, compost chambers, toilet facilities and fences. Improved gardens should include new technical features to optimize their profitability and water use efficiency such as solar pumping systems, and systematic introduction of nutrient- and vitamin rich crops such as the orange sweet potato. Eligibility criteria should be revised to reach a commercially-viable area per participant (250 to 500 m²), **mainly women at 90 per cent**
28. **Agricultural Value Chain Interaction Platforms (AVIPs):** These were introduced at the local level by NEMA. On the basis of the pilot, it was concluded that AVIPs should be scaled-up and organized around markets at regional levels and include more market operators. Examples in West Africa show that AVIPs can enable Public-Private-Producers Partnerships (4Ps), facilitate price negotiations and conflict resolution, disseminate price information, build trust and foster agribusiness agreements among FOs and market operators.
29. **Empowering farmers' organizations:** NEMA supported the emergence and strengthening of grassroots cooperatives societies (rice) in village-clusters. An IFAD assessment^[4] recommended pursuing this work, while also federating FOs in district-level unions with the support of **the National Coordinating Organization for Farmer Association in The Gambia(NACOFAG)**, the national FO umbrella organization. Empowered FOs under NACOFAG could deliver business advisory services to their members and training on cooperative governance, management and marketing. Cooperatives would also be supported to enter into commercial partnerships with input dealers and buyers. **Dealers and services providers will be encouraged to support women-led FOs.**
30. **Public-Private Producers' Partnerships (4Ps):** These enable the inclusion of smallholder farmers in value chains. The CPE recommended scaling-up 4Ps and productive partnerships, which are increasingly adopted in value-chains projects to forge linkages between smallholders and **commercial firms**. These 4Ps are using: (i) *horizontal business models* resting on mainly informal agreements; (ii) *vertically integrated business models* with formalized agreements (outgrowing schemes); and (iii) *joint-venture models* where investments in assets, revenues and expenditures are shared by producers and a private entrepreneur. A capitalization study^[6] financed by IFAD in East Africa shows that 4Ps contribute to higher incomes, improved product quality and access to finance. Recent IFAD-funded projects supporting 4Ps include PAFA in Senegal, PADAAM^[7] in Benin, PRODEF^[8] in Mauritania, and INCLUSIF^[9] in Mali. In The Gambia, the IFAD-financed Livestock and Horticulture Development Project (LHDP) and NEMA tested the 4P model. NEMA developed horizontal business models between rice and vegetable producers and private enterprises.
31. **Rural entrepreneurship:** Agro-SMEs offer opportunities for creating decent jobs for youth and women. In The Gambia, the experience of NEMA and GCAV^[10] using matching grants through the Capital Investment Stimulation Fund (CISF) has delivered mixed results due to a uniform conditionality in terms of expected personal equity, loans and subsidy levels for different socio-economic groups (women groups, youth, cooperatives and SMEs). A key lesson is that financial support mechanisms should be tailored to the specific financial constraints of different groups, youth, cooperatives and SMEs. The proposed financing rule (10 per cent equity/30 per cent bank/60 per cent grant) did not work due to the inability of beneficiaries to borrow from the Bank.
32. **Remittances:** In The Gambia, a strong opportunity existsto **apply** innovations related to **diaspora financing, through remittances and crowdfunding**, which could be piloted with technical assistance from IFAD's Financing for Remittance Team (FFR). A study will be conducted to inform this process at the mid-term review. **ROOTS will**

strengthen existing fintech initiatives, such as Money Farm Gambia, aimed at intermediating debt financing from the "crowd", most particularly, the diaspora, to rural entrepreneurs. The project would strengthen existing systems. ROOTS would apply the lessons learned from IFAD's valuable experience in Mali in channeling diaspora and crowdfunding funds to young entrepreneurs through a partnership with the philanthropic lending platform "Babyloan", in the FIER and PMR Projects.^[11]

33. **Collaboration and coordination:** Previous and on-going projects have been seen as working in isolation. ROOTS will work with a wide range of government agencies, donor financed programs, NGOs and neighboring states to increase the effectiveness of IFAD-financed interventions. IFAD, as lead donor of the Technical Working Group (TWG), will work to support this coordination through policy dialogue.

2. Project Description

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

34. **Project objectives.** The goal of the Project is to improve food security, nutrition and smallholder farmers' resilience to climate change in The Gambia.
35. The Project Development Objective (PDO) is to increase agricultural productivity and access to markets for enhanced food security and nutrition, and resilience of family farms and farmers organizations.
36. **Geographic area of intervention.** The Project will consolidate the achievements of NEMA and previous IFAD projects in 39 districts of five regions: (i) Central River Region; (ii) North Bank Region; (iii) Lower River Region; (iv) West Coast Region; and (v) Upper River Region. The selected districts are listed in the table below. The agro-ecological characteristics of these regions are mainly flat floodplains along the Gambia River, which is flanked on both banks by low altitude hills (uplands) that do not receive tidal flooding. The area is also characterized by the limited availability of surface water, degraded soils with poor nutrient value and low vegetative cover in the central and west Sudanian Savanna. The project zone experiences seasonal issues with both the rapid run-off of heavy rains and the flooding of large areas from the main watercourses, complicated by the intrusion of saline water **above and below the surface of the Gambia River.**

Region	Selected Districts
West Coast (3)- all	Kombo North, Kombo South, Kombo Central, Kombo East, Foni Brefet, Foni Bintang-Karanai, Foni Kansala, Foni Bondali, Foni Jarrol
Lower River (3)- all	Kiang East, Kiang Central, Kiang West, Jarra East, Jarra Central, Jarra West
North Bank (1)- all	Lower Niumi, Upper Niumi, Jokadu, Lower Baddibu, Central Baddibu, Upper Baddibu, Saba Sanjal, Lower Saloum, Upper Saloum, Nianija, Niani, Sami
Central River (3)- all	Niamina West, Niamina Dankunku, Niamina East, Fuladdu West, Upper Fuladu
Upper River (2) - all	Jimara, Basse Fulladu East, Tumana, Kantora, Wuli East, Wuli West, Sandu

37. **The list of geographic areas are codified as follow: new infrastructure only (1); rehabilitation only (2); new and rehabilitated infrastructures (3).** In these regions, areas were selected that have the highest poverty rate and are most vulnerable to climate change. The Project will focus on (i) climate resilient value-chain development (primary lowland and tidal rice production and vegetables); (ii) integrated farming systems and diversification (livestock, agroforestry, ecotourism); and (iii) **malnutrition, particularly North Bank, Central and upper regions (Basse, Kantur, Kerewan and Janjanbureh) showing higher prevalence.**
38. **Target group.**^[1] **Targets groups are mainly women (80 per cent) and youth (25 per cent).** Farmers, especially the poor and the small producers in the poorest areas, suffer from three primary sets of constraints that inhibit the

development of their livelihoods, food and nutrition security, and job creation: (i) low productivity related to poor irrigation infrastructures, inadequate production systems, and lack of access to appropriate technology inputs, knowledge and support services; (ii) limited access to financial services (agricultural credit and loans) and markets; and (iii) vulnerability to the effects of climate change.

39. Selection criteria will be developed and validated with communities. These criteria include: (i) poverty and food insecurity; (ii) community interest and demand; (iii) synergies with other donor-supported projects; (iv) site potential (including hydrogeological potential and saline-water intrusion dynamics in rice production schemes); (v) proximity to markets (*lumos*) and linkages with off-takers; and (vi) land size of group members (not exceeding five hectares of land under rice/vegetables).
40. The Project will directly benefit 40,000 households^[2] involving about 320,000 people^[3] The primary target groups are: (i) smallholder farmers, predominantly women, organized in formal or informal associations (*kafos*); (ii) female and male youth from 18 to 35 years old, involved in farming and off-farm activities; and (iii) farmers and entrepreneurs involved in cooperatives and SMEs engaged in 4P arrangements for commercialisation and value addition. It is expected that 80 per cent of direct beneficiaries will be women and 25 per cent will be youth as most of the rural areas **are depopulated**. As more than 10 per cent of The Gambian population are people with disabilities either as result of mental, sensory or physical impairment, the Project will involve them in the most appropriate segment of the selected value chains. The project will conduct a participatory process based on data from the Integrated Household Surveys, the FAO/WFP Harmonized Framework and national nutrition surveys to target **vulnerable**, food and nutritional insecure smallholders. The GoTG with World Bank support is currently developing a nationwide social registry identifying poor and extremely poor households, which will provide targeting data once available.
41. **Access to land: In The Gambia, the two main types of land tenure systems are informal and Informal land tenure is based on traditional customs and practices. The customary laws state that where an original piece of land is cleared by a Kabilo (a collection of families) the ownership of land is vested in the head of the Kabilo. For vegetable gardens and rice production allocation is done through this informal process. The formal land tenure system, on the other hand, consists of leaseholds and freehold tenures. In leasehold land tenure, the ownership rights are granted by the State for a term of generally 99 years. The right is only legalised through registration of the property leading to the production of a formal title deed or lease document, which is subsequently registered at the Attorney General's Chambers. The project will support land access rights for youth and women in line with the land tenure systems which will accelerate and secure investments .**
42. **The gender strategy** of the Project will consist of the following pillars: (i) expanding women's economic empowerment through access to and control over household and productive assets, in particular land; (ii) strengthening women's decision-making role in the community and their representation and leadership in local institutions; (iii) functional literacy, numeracy and business skills training; (iv) gender awareness and women empowerment measures, including GALS training; (v) capacity building of project staff and technical service providers on gender-sensitive enterprise development and social inclusion; and (vi) minimum quotas (at least 50 per cent) to ensure women's active participation in all decision-making bodies and committees (water use management units, women *kafos*, village farmers associations, cooperative societies). **Beyond production, the gender strategy will look at job opportunities along the entire value chain (rice, vegetables).**
43. **A youth strategy** will be based on (i) awareness raising and organization of youth groups; (ii) strengthening of leaders of youth groups; (iii) specific support for youth SMEs, including access to finance and business development services; (iv) **capacity building of project staff and technical service providers on youth-sensitive enterprise development and social inclusion**; and (v) **minimum quotas (at least 15 per cent) to ensure the active participation of youth in all decision-making bodies and committees (water use management units, youth kafos, village farmers associations, cooperative societies).**
44. **The project's youth specific activities will be implemented in close partnership with other development partners targeting the same beneficiaries such as UNDP, FAO, and the World Bank. ROOTS will collaborate with the Songhai Centre to ensure that their graduates are directed towards project support opportunities, such as the creation of youth-led agricultural services businesses or placement as advisors in new or upgraded market-oriented vegetable gardens. Multiple promising examples of youth engagement in agriculture were encountered during the design mission and ROOTS intends to catalyze youth engagement and unlock the potential through the youth strategy.**

D. Components/outcomes and activities

Component 1. Agricultural productivity and adaptation to climate change

45. This component aims to build the resilience of farmers' organizations to climate change through enhanced and sustainable access to natural resources and agricultural services. This objective will be pursued through two sub-components: (i) infrastructure development and management; and (ii) agricultural services provision.

Sub-component 1: Infrastructure development and management

46. This sub-component will address critical community infrastructure and equipment needs to enhance agricultural production and productivity of the rice and vegetable value-chains, while ensuring the sustainable use of natural resources. The two interventions areas include: (i) infrastructure development and management for resilient rice cultivation; and (ii) market-oriented vegetable gardens, **mainly led by women.**
47. **Infrastructure development and management for resilient rice cultivation** The Project will support (a) the upgrade and new development of dry-season tidal irrigation (mainly in CRR sites **to withstand to climate impacts**, including Jahally/Pacharr, Sukuta and Barajalli) in wet season rice growing areas and (b) **applying a landscape approach to develop** new wet-season water-control structures on existing moisture deficit agricultural areas with rainwater harvesting through: (i) wet-season valley bottom water control cascaded dykes and (ii) micro-catchment water runoff control dykes.
48. More specifically, the project will finance: (i) site pre-identification; (ii) participatory consultation and citizen engagement for identification and planning, with a focus on promoting access of the poor, women and youth to irrigated land;^[1] and (iii) feasibility studies, detailed design (FS&DD) and supervised construction, leading to construction or consolidation of structures for gravity irrigation serving 5,900ha **in the context of a changing climate.**^[3] More particularly, the Project will: (i) consolidate 1,300ha of poorly performing tidal irrigation; (ii) develop 2,800ha of new tidal irrigation on existing agricultural lands; (iii) develop 200ha of new wet-season valley bottom water control cascaded dykes; (iv) develop 800ha of new micro-catchment runoff control dykes; and (v) 20km of causeways^[4] to access 800ha rice-growing swampy areas. Around the production sites, the project will finance ecosystem preservation activities such as the rehabilitation of 1,300ha of mangroves and 1,400ha of community forests (GEF-sponsored). The project will also transfer to the Ministry of Agriculture (MoA) and MoFWR free, web-based, earth-observation technologies (such as the FAO’s Earth Map) to monitor land and water development investments during implementation. Like NEMA, which is classified as a “B” project, significant negative **environment impacts are not foreseen.**
49. **To help ensure the quality of new works as well as maintenance and upgrading of existing ones, international competitive bidding will be used to select the best bid from competing suppliers and contractors. The project support unit (PSU) will mobilize International Technical Assistance (ITA)^[5] to oversee, with the support of a Delegated Contract Management entity (DCM), the FS&DD and supervision of civil works performed by international/national contractors. For a third-party quality management public entity (so called “delegated contract management” - DCM - entity such as GAMWORKS), this will facilitate the review and clearance of FS&DD (upstream work) and thematic studies, quality control (supervision) of civil and electromechanical works (downstream work) and ensure that procured works, goods and services are of the desired quality. The Department of Parks and Wildlife (DWPM)^[6] will implement the ecosystem preservation activities.**

Table: Threshold lengths of water infrastructure and rural roads (SECAP)

Infrastructure	length
Causeways	3 km each segment
Rural roads	Average length between villages and main roads (3 km)- shortest
	Length between village main roads (8 km)- longest

50. To help ensure the long-term sustainability of infrastructure, the project will strengthen 40 Water User Management Units (WUMUs) to plan, maintain and sustainably manage the rice irrigation schemes, with participation of at least **60 per cent women as the force is composed of 60 per cent women and 25 per cent youth. Within the climate context and more specifically, the project will support the policy environment around irrigation works (including for rehabilitation, construction and maintenance) through the following: i) the design of irrigation infrastructure, proposing technologies that fit technical, financial and labor resources and capacities; ii) the distribution of water in rice plots; iii) joint management and maintenance of the infrastructure; iv) joint management and governance with services beyond water management; v) social cohesion and dispute resolution; and vi) public-private partnerships. As part of the policy dialogue, the project will work on the definition of the status of WUMUs and their role in the O&M of irrigation infrastructure (which currently remains state property).**

51. **The WUMUs will be linked to catchment management institutions to ensure their allocation of water also respects the water needs from other users, like livestock. The catchment management institutions will i) decide about water allocation across whole river basins, ii) organize conservative actions upland, and iii) contribute to sustainable management of resources. ROOTS will support the establishment and strengthening of 15 micro catchment management committees. These committees will put in place regulations on use, conservation, protection and management of their water resources and upland conservation activities. These will also ensure the equitable access to water for all members, including farmers and livestock keepers. The Project will finance 10 water-gauging stations and 11 groundwater resource data collection stations and their networks to allow WUMUs to continuously monitor the water discharge. District-level staff, with the support of a WUMU Specialist from the Ministry of Water, will support the formation and strengthening of these institutions in water management, in infrastructure management, and in institutional management.**
52. **Market-oriented vegetable gardens. Climate resilient** Vegetable gardens have been supported by various development partners^[9] to strengthen the resilience and nutrition of women *kafos*. In spite of noteworthy social and economic impacts, these women-led 5ha gardens face a number of weaknesses related to the high number of members per garden, inadequate designs and infrastructure, poor operation and maintenance (O&M), inefficient land and water use, and low adoption of climate-smart practices.
53. *Upgrading existing vegetable gardens.* To capitalize on existing investments, ensure the resilience of women *kafos*, increase their incomes and enhance their nutritional status, ROOTS will upgrade 40 existing gardens following an in-depth assessment of current socio-technical performance and limiting factors. As most of the observed limitations are partly related to improper designs, the project will update the current technical design guidelines. Proposed modifications include (depending on the results of the assessment): (i) intercropping drip irrigated fruit trees such as bananas, papayas, citrus fruits along on-farm roads, fences and beds (agroforestry); (ii) systematically introducing nutrient- and vitamin-rich crops, such as the orange sweet potato to boost Vitamin A intake (through a partnership with the EU-funded Biofortification Project); (iii) improving land-use efficiency by eliminating unnecessary footpaths between beds and larger alleys, moving solar energy systems and compost units outside the gardens; and (iv) improving water-use efficiency by matching available water supply with demand and adjusting irrigation frequency **amount**.
54. Irrigation system modifications will focus on a gradual move from surface irrigation to environmentally sustainable micro-irrigation, through the promotion of drip irrigation. **However the shift to drip irrigation should be accompanied with technical training on soil salinity management and linked to availability of salt tolerant seeds.** Given that drip pipes are subject to frequent damage and hence replacement, the project will support the local fabrication of pipes that are of higher quality but at the same time affordable. Recycling used pipes, as supported by the youth-based services described below, **will be promoted. Technical and managerial capacity building for proper O&M and optimal use of on-farm water management systems will be financed.** Concerted efforts will be exerted to promote volumetric-based water service fees collection systems to ensure that O&M and replacement fees are deposited in the WUMUs' bank account thus establishing a viable investment exit strategy.
55. *New market oriented vegetable gardens.* Thirty new gardens will be established next to *tomos* and follow the improved technical design features described above. When possible, new gardens will also integrate poultry (eggs and broilers) to diversify income sources and enrich household diets. To ensure commercial viability, 75-125 business-oriented participants will be served per garden, i.e. 250 to 500 m² per person, and double cropping will be introduced to enhance land use efficiency and maximize returns on investment.

Sub-component 2: Agricultural services provision

56. This sub-component will support the access to various agricultural and capacity development services (extension, inputs provision, financial education), **to generate higher yields for household consumption and surpluses for markets**, complementing the land and water development investments under sub-component 1.
57. **Agricultural productivity enhancement.** To capture the full financial and climate-change adaptation benefits of the infrastructure investments, farmers have to maximize their productivity within the irrigated perimeters and gardens, which will require extension support. The extension activities planned under ROOTS will align with and contribute to the National Extension Policy and Strategic Plan (the latter to be completed in 2019).
58. *In the irrigated perimeters*, three types of capacity-building will be financed. *First*, FFS will be organized to introduce the SRI management system. SRI has produced the highest rice yields in The Gambia through decreased water use and it emits less methane and lower CO₂ emissions through decreased fertilizer application. *A second type* of capacity-building support consists of farmers' training, targeting the rainfed tidal and rainfed lowlands. ROOTS will use the Participatory Learning and Action Research (PLAR) modules developed by AfricaRice to assist farmers in these systems. Implementation of the PLAR materials, and training of field staff, will be led by an internationally recruited expert. *The third type* of capacity-building support will be conducted to (a) support the identification of the most desired rice varieties using the Participatory Varietal Selection for Extension methodology pioneered by Africa Rice, and (b) multiply quality-declared seeds within the rehabilitated and newly constructed tidal irrigation perimeters,

using community-based seed systems. Support will be given to the Village Extension Workers (VEW) and field staff of the National Seed Secretariat, with backstopping from an internationally recruited expert.

59. *In the new and upgraded vegetable gardens*, the FFS approach will be used to support women farmer groups to: (i) achieve full use of the gardens' potential irrigated area and improve their horticultural skills **and mitigate climate impacts**; (ii) promote climate-smart and nutrition-sensitive horticulture practices (e.g. composting, crop rotation, intercropping, integrated pest management); and (iii) efficiently use and maintain the drip irrigation systems **in connexion with activities under Component 1.1. Support for O&M activities will complement infrastructure interventions**. Horticultural FFS will be held in 30 of the 40 upgraded gardens and all of the newly-constructed gardens. All new and upgraded gardens will also have FFS on drip irrigation. To implement the horticulture and drip irrigation FFS, two DoA staff from each region will be trained as Master Trainers and up to 30 VEW and District Officers will be trained as FFS Facilitators. The FFS Facilitators and Master Trainers will in turn train and support Farmer Facilitators in all the gardens to help implement and sustain the training efforts. An internationally recruited FFS Master Trainer will lead the establishment of the garden FFS programme and will provide annual support missions during a two **year period**. The Master Trainer will liaise with the National Nutrition Agency. FFS will also be organized on poultry rearing (broilers and/or layers), with support from the Livestock and Veterinary Services. **ROOTS will: (i) adapt training manuals on Essential Nutrition Actions (ENA) and Essential Hygiene Actions (EHA); and (ii) train select mothers/fathers on ENA/EHA/consumption of diversified diets/planning and budgeting for food as well as facilitate step-down training.**
60. **Youth-based services.** The project will finance business ideas from youth focused on agricultural services provision. The objectives of this intervention are twofold: (i) to ensure that trained youth interested in starting or growing an agri-business receive the necessary business development and financial support **including climate finance**; and (ii) to complement extension with other services, in particular mechanization, digital technologies and basic on-farm processing.
61. *Youth incubation.* The project will collaborate with the Songhai Centre, given its demonstrated capacity, and partner closely with UNDP. The project will support Songhai to diversify its existing youth training curricula by developing new modules on agriculture finance, environment and climate change, value chain development, agribusiness, digital agriculture, business plan development, food conservation and processing. ROOTS will also help Songhai to access digital technologies and organize specialized training on their use, small processing equipment for on-site demonstrations, and infrastructure to increase the Centre's hosting capacity. The project will help Songhai develop partnerships with a network of private agri-food enterprises willing to contribute to internship and Training and Vocational Education and Training (TVET) programs. Starting in year 3, the project will also subsidize the placement of five graduates in newly developed market-oriented vegetable gardens to act as production, marketing and value addition advisors to the producer groups. Furthermore, the project will support Songhai in financing and managing a reward program for its ten best students from each cohort. This program will complement young student's earnings by contributing financially to their business ideas.
62. The project will finance at least 240 youth-led small businesses. Eligible businesses will include: (i) mechanized agriculture services; (ii) agriculture transport services; (iii) agro-dealerships; (iv) maintenance of agricultural equipment (e.g. drip irrigation pipes); and (v) digital technologies for agriculture services (ICT, drones, agricultural service apps). In addition, the project will finance awareness raising, business plan preparation and post-investment monitoring and support. **As part of the early implementation and through the FIPS, the project will be developing youth and gender strategies to guide all interventions identified throughout the project cycle.**
63. **Capacity development of FOs.** The project will support farmers' organisations (FOs) at the level of rice and vegetable production sites. Based on the work initiated by NEMA, the project will continue to: (i) support the organisation of women *kafos* around vegetable gardens; and (ii) transform Village Farmers Associations (VFA) into cooperative societies (clustering several villages) around the new/upgraded rice perimeters. A total of 40 new women *kafos* and six cooperative societies will be established and strengthened. Cooperatives will first be assisted on organizational and cooperative management (e.g. establishment of executive committees, financial literacy, leadership etc.). In a second step, cooperatives will be transformed into agricultural service hubs for their members, delivering on (i) input provision, (ii) access to finance, and (iii) marketing services **iv) climate change. Service providers will strive to reach 80 per cent participation of women field staff to meet the need of women beneficiaries** On the latter, the project will enhance the readiness and bargaining power of FOs to enter into sustainable commercial partnerships with buyers, including **4Ps (see component 2). The project will train female entrepreneurs in vegetable and rice production to enhance their performance in record keeping and business management to own and operate their business in a sustainable manner.**
64. For input provision, the project will support cooperatives to enter into sustainable commercial partnerships with input dealers. To assist cooperatives in accumulating the liquidity to independently underwrite their own production activities, the project will use a partial and declining subsidization mechanism over three years (year 1: 80 per cent, year 2: 50 per cent, year 3: 20 per cent of major inputs costs). This mechanism will fully capitalize the cooperatives, allowing them to autonomously meet their members' input supply needs in the following years. Similar models were successfully implemented under NEMA and PAFA (Senegal).

65. Regarding access to finance, the Project will promote: (i) the increased savings capacity of FOs and their members through Credit Unions (CUs) and Micro Finance Institutions (MFIs); and **particularly women-led FOs and SMEs** (ii) the access to diaspora financing/remittances through a pilot. In order to promote savings effectively and to create a transactional track record between financial service providers and FOs, the project will support the provision of the services through mobile Financial Service Providers' agents or through third party non-bank agents and mobile money. Furthermore, it will support the supply of other financial services catering to the needs of the target groups, in particular the provision of remittances linked with the promotion of savings and access to productive loans. The project will enhance the skills of farmers' organisations to make **prudent usage** of these products through financial education.

Component 2. Access to markets

66. This component aims to assist FOs supported at the level of production in Component 1 to establish inclusive commercial partnerships with other value-chain actors, e.g., SMEs through the 4Ps approach. This will be pursued under two interlinked sub-components, namely: (i) value-chain and market linkages and (ii) **4Ps financing. Since the project targets 80 per cent women, the gender strategy report will provide more guidance on barriers and key additional opportunities to tap into for women beyond production for rice and vegetable VCs.**

Sub-component 1. Climate resilient value-chains and market linkages

67. This sub-component, implemented around three intervention areas, aims to equip FOs with the appropriate platforms, knowledge, business capacity, bargaining power and infrastructure to enter into inclusive and sustainable commercial relationships with other value-chain stakeholders.
68. **Agricultural value-chain interaction platform.** ROOTS will enhance and scale-up the AVIPs initiated by NEMA. AVIPs bring together key stakeholders (producers, processors, traders, transporters) around the rice and vegetable value-chains. The objective is to use AVIPs as a vehicle to enhance linkages between supply and demand and broker 4Ps, from simple contracts to more vertically-integrated business models with formalized agreements between FOs and buyers (e.g. outgrowing). One rice AVIP and one vegetable AVIP will be established in each of the six Regions targeted by the Project. AVIPs will be organized monthly around the main markets of these regions (*lumos* and central markets). They will involve the representatives of rice cooperatives and women *kafos* supported under NEMA and ROOTS, together with key market operators (private and institutional buyers).
69. The Project will finance the steps to operate AVIPs, including: (i) information and mobilization around the AVIP initiatives and 4Ps approach; (ii) market analyses; (iii) establishment of AVIPs at selected local or regional markets; (iv) operationalization of AVIPs and contracts/4P brokering; and (v) local policy dialogue and product branding. The project will also finance the training of AVIP facilitators and visits to Senegal for knowledge sharing with well-established value-chain roundtables (e.g. those sponsored by the IFAD-financed PAFA). A specialized operator (e.g. the Senegal-based West Africa Rural Foundation – WARF, which worked with NEMA) will be contracted to implement the platforms.
70. To support AVIPs and strengthen FOs in marketing decision making, and support women in decision making, the Project will sustain and scale-up the voice-based market information system (MIS) introduced by NEMA and established around 10 *lumos* and 15 major vegetable crops. ROOTS will build on the existing system (cloud-based server, database web platform, facilitators), expand it to new value-chains (rice) and to all new women *kafos* gardens supported under Component 1 and introduce innovations such as climate information. Activities include: (i) the expansion of the MIS to 11 new *lumos*; (ii) the integration of additional local languages to increase the MIS outreach within targeted communities; (iii) information campaigns on MIS **including weather information**; (iv) the identification and training of 1500 MIS facilitators (members of women *kafos*, cooperative societies and AVIPs); (v) equipment for new market price collectors (smartphones, credit, transport); (vi) test-piloting the insertion of climate information, together with The Gambia Meteorological Service; and (vii) a study to sustain the MIS system. A well-established specialised service provider will be contracted by the Project.
71. **Strengthening apex farmer organisations.** ROOTS will finance a capacity development program for NACOFAG, the Gambian apex body. The program aims to empower the farmers' apex in better representing its members, including representation and active participation of women and youth, enhancing its policy dialogue and advocacy capacity, and its internal market access services (i.e. identification of contract farming and 4Ps opportunities, business advisory services). Partnerships with well-respected institutions with a proven experience on delivering organizational and economic support to apex FOs will be sought (e.g. ROPPA^[10] or ASPRODEB^[11]).
72. At the level of national commodity organizations, the Project, through a contract with NACOFAG, will strengthen the National Rice Farmers Association (NRFA), the National Association of Food Processors (NAFP) and support the emergence of the National Vegetable Growers Association (NVGA). ROOTS will help these organizations build a wide membership base at district and regional levels, strengthen governance structures (i.e. national and regional secretariats), ensure women and youth representation and active participation, and deliver market access services to members (e.g. value-chain intelligence, deal sourcing, identification of contract farming and 4Ps opportunities).

73. **Market infrastructure and rural roads.** In addition to facilitating market linkages, the construction/rehabilitation of market and connectivity **infrastructure** will have positive **impacts** on the environment for **4Ps**. During the initial year of the Project, an inventory of the main *lumos* will be prepared to prioritize markets for construction or rehabilitation **taking into account environmental and climate norms**. Four existing market outlets at strategic locations will be supported. In order to connect remote villages to the main road and to markets, access roads **that can withstand to floods** will be constructed (60km) and renovated (10km), following the same FS&DD and oversight modality described in Component 1 for causeways and production infrastructure. Given the average distance between villages and main roads, the length of **each of the rural roads will be less than 8 km**. **Similar to water infrastructure, beneficiaries will be involved in planning, implementation, oversight, replacement, repair and maintenance, ensuring that the cost thereof is incorporated into price setting and financial calculations. Representation of women will be encouraged in all decision making processes. An appropriate locally based agent (e.g. extension staff, NGOs, civil society organizations) will be identified to ensure these messages are internalized.**

Sub-component 2. 4P financing

74. **This sub-component** will sponsor viable and sustainable 4P business ideas, focused on post-harvest and value-addition **with a specific focus on women**. The Project will ensure that: (i) FOs and SMEs prepare high-quality business plans **while encouraging women-led FOs and SMEs with high quality and bankable business plans** (ii) matching grant resources are efficiently utilized **in partnership with local financial institutions (microfinance institutions and banks) while encouraging a stronger savings culture, particularly for women and women's organisations;** and (iii) post-investment business support is available to sustain the 4Ps. **Business plans must include mainstreaming areas (environment, climate, nutrition, youth.)**
75. **Business plan development.** ROOTS will support FOs and SMEs in preparing business plans and establishing contractual arrangements for effective 4Ps. ROOTS will focus on improving the quality of business propositions and working with national institutions to ensure sustainability. It will collaborate closely with the Gambia Chamber of Commerce and Industry (GCCCI) to develop business development services capacity and help interested SMEs and FOs prepare their business plans. **The GCCCI will also assist applicants in preliminary discussions with commercial banks and microfinance institutions, if necessary, in order to secure the required contribution.** International technical assistance (ITA), phasing out after 2 years, will be financed to support the GCCCI.
76. In addition to the AVIPs, which will enhance networking between value-chain stakeholders, the Project will finance fairs and information campaigns to boost linkages and will broker contracts between FOs and larger value chain actors, including institutional buyers such as the World Food Program (WFP). The Project will provide technical assistance to prepare standard contract templates between 4P actors, particularly given that proven pre-engagements between SMEs and FOs will be a criterion for matching grant financing.
77. **Business plan financing.** ROOTS will establish a separate matching grant window for financing post-harvest and value-addition business plans proposed by FOs and SMEs engaged in 4P arrangements. Eligible investments will include processing equipment, post-harvest cold storage equipment/infrastructure, digital technologies **Women-led FOs and SMEs will be supported and encouraged to submit viable business plan (details in the Project Implementation Manual (PIM)).** Throughout its implementation, the Project is expected to finance about 10 4P-centered business plans from SMEs and 60 from FOs capable to generate a "pull factor" for value chain development and rural employment. This matching grant (MG) window^[12] will be focused on existing and new SMEs and on existing FOs interested in starting or growing an agri-business. As described above, proven 4P arrangements will be a mandatory eligibility criterion. Previous beneficiaries of matching grant support from IFAD or other donor funded projects will not be eligible. The PSU and the GCCCI will ensure to the maximum extent possible that the eligibility criteria are respected in order to avoid elite capture.
78. **Post-investment business support.** ROOTS will include post-investment business support for benefitting SMEs and FOs, which was lacking in previous initiatives. To facilitate the access of SMEs to specialized business development services like certification (ISO), food safety standards, good manufacturing practices, financial management and linkages to export markets, the Project will identify potential service providers, organize the participation in regional or international fairs and co-finance some of the capacity **building activities. Based on the gender strategy, more focus will be on rice and vegetable processing to strategically increase women's participation. The Project** will also pilot FO and SME financing innovations. For example, ROOTS will provide the opportunity to the diaspora to invest in businesses supported by ROOTS and those engaged in 4Ps arrangements through crowdfunding mechanisms. The project will strengthen existing fintech prototypes, such as Money Farm Gambia, that aim at intermediating debt financing from the "crowd", most particularly the diaspora, to rural entrepreneurs. The pilot will benefit from backstopping by IFAD's FFR team.

Component 3. Institutional Development, Project Management and Citizen Engagement

79. **Under component 3,** the project will support policy dialogue and South-South and Triangular Cooperation (SSTC) activities **which will lead to key agricultural reforms**. The project will finance selected policy dialogue forums involving FOs (more particularly NACOFAG), private sector representatives and policy makers. Examples of policy

dialogue areas relevant to the project include: (i) the adoption and implementation of CFS Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT), more particularly to address barriers to women's and youth access to land and financing; (ii) policy barriers to domestic rice production in The Gambia, based on a competitiveness analysis financed by the project. **As designated lead of the agricultural sector Technical Working Group (TWG), IFAD will support under this component: i) the completion of the second generation Gambia National Agricultural Investment Plan (GNAIP), ii) the facilitation and coordination of the organization of two roundtables to mobilize resources and implement the GNAIP, iii) the coordination of technical assistance of all donors to deepen key agricultural reforms in the Gambia, and iv) the organization of study tours for Gambian policy makers to learn about best experiences pertaining to agricultural investment plans and implementation processes and agricultural policy reforms in neighboring To ensure the sustainability of the irrigation infrastructure, the project will document experiences from implementation and engage in discussions and potential reforms around the definition of the WUAs' status and their role in the O&M of irrigation infrastructure (which currently remains state property).**

80. On SSTC, ROOTS will work closely with other IFAD-funded projects and learn from global and regional experiences on rice and horticulture production in the context of climate change. Enhanced cooperation between the Gambian and Senegalese MoAs with respect to seed supply systems and the use of appropriate production and post-harvest technologies will strengthen both countries' capacity to improve productivity, while exchange visits will provide opportunities for learning. Exchange visits will focus on FOs advocacy and organization, cooperative-based business development, FFS experiences, gender equality and women's empowerment and M&E.
- 81.
- 82.

E. Theory of Change

83. ROOTS' theory of change is based on a market-driven approach, acknowledging that any gains in productivity due to the project's interventions will translate into better food and nutrition security, poverty reduction and sustainability if beneficiaries succeed in accessing markets and reaping the gains from their rural activities. The current development problems of rural Gambia are multifaceted – climate-change vulnerability, demographic pressure, inefficient public service delivery, economic instability – and the result is generalized subsistence agriculture with stagnant yields and the incapacity to meet domestic demand. Poor commercial linkages and low value addition exacerbate the situation and make it difficult to generate the necessary rural incomes to graduate from poverty and transform the rural landscape. The impact of these factors is persistent vulnerability, poverty and food insecurity, **affecting in particular women and youth, all of** which trigger increasing level of rural-urban migration and emigration, particularly for the youth.
84. To address this situation, ROOTS is proposing a transformational pathway based on comprehensive activities in support of sustainable production and access to markets. The push factor will be driven by the project, in partnership with the public sector, to ensure that the necessary productive infrastructure and the required inputs (knowledge, technologies, inputs and capital) are available. Yet, the more important pull factor will be the commercial partnerships (4Ps) as the core mechanism for transforming the materials gains from the project into developmental outcomes. To support this logic, the project interventions are designed to ensure that: (i) natural resources are sustainably managed for rice and vegetable production; (ii) access to agricultural services is improved; (iii) women- and youth-based FOs are equipped to enter into inclusive and sustainable 4Ps; (iv) viable and sustainable 4P business ideas are designed and financed; and (v) the enabling environment around 4Ps is improved. On the one hand, these outputs are expected to lead to adoption by beneficiaries of the environmentally sustainable, climate-resilient and nutrition sensitive technologies and practices necessary for increasing their productivity. On the other hand, the project is expected to lead to creation of inclusive commercial partnerships between FOs and buyers, which would translate the productivity gains into better incomes for rural populations. Overall, these two effects would result in enhanced food security, nutrition and sustainable resilience of smallholder producers.

F. Alignment, ownership and partnerships

85. *Alignment with SDGs.* The project is compliant with the following SDGs: 1. No Poverty; 2. Zero Hunger; 5. Gender Equality; 8. Decent Work and Economic Growth; 9. Industry, Innovation and Infrastructure; 13. Climate Action; and 15. Life on Land. For SDG 1, the project will support vulnerable communities through preferential financial support for the acquisition of agricultural equipment and inputs. For SDG 2, the project will help farmers improve agricultural productivity and post-harvest handling and storage. For SDG 5, the project will support reforms in land tenure regulations to increase access to land for women farmers, through trust-based policy dialogue on the VGGT. For SDG 8, the project will help youth obtain remunerative employment through sponsoring vocational training, mentoring and start-up capital for business ventures. It will also help cooperatives and farmers' associations become viable enterprises. Regarding SDG 9, the project will introduce innovations aimed at enhancing agricultural labour productivity and reducing drudgery, particularly for women. For SDG 13, the project will promote resource-use

efficient techniques and invest in solar-powered water pumps and other clean technologies. For SDG 15, the project will support integrated soil fertility management techniques through FFS.

86. *Country ownership and alignment with national priorities.* The project is fully aligned with the NDP 2018-2020, ANR Policy 2017-2026 and sectoral policies mentioned above. In terms of ownership, a National Technical Support Team involving the CPCU, Directors of the MoA and NEMA staff, worked on a day-to-day basis with the IFAD/FAO-DPI team during the design mission. The mission also liaised closely with civil society representatives (NACOFAG and the National Women Farmers Association – NAWFA) and held various citizen engagement workshops, consultations and meetings.
87. **With regard to improving sustainability of benefits generated from investments, ownership will become an intrinsic part of all IFAD-supported activities. As recommended by the CPE, target villages groups need to be in agreement with infrastructure development priorities and the correct sequencing of activities pursued, to ensure empowerment and ownership for better sustainability. Beneficiaries will be consulted regularly so they can plan and implement oversight, replacement, repair and maintenance, and ensure that the cost is incorporated into price setting and financial calculations. An appropriate locally based agent (e.g. extension staff, NGOs, civil society organizations) will be identified to ensure these messages are internalized. In the case of more complex and costly infrastructure like dykes, the government will define the operational and maintenance arrangements. The value chain approach -- from production to markets with all relevant actors along the rice and vegetable value chains -- will enhance the sustainability prospects. Participation of women in decision making processes will be encouraged.**
88. *Alignment with IFAD policies and corporate priorities.* The project objectives are well aligned with the COSOP Strategic Objectives SO1 (Enhance the productivity and resilience of Gambian family farms) and SO2 (Improve farmers organizations' capacity and enhance farmers' access to assets, markets and profitable agricultural value chains). The project is also in line with IFAD's Strategic Framework 2016-2025, the IFAD11 business model and IFAD's Environment and Climate Strategy 2019-2025. Implementation arrangements will comply with IFAD's Targeting Policy and IFAD's policy on gender equality and women's empowerment.
89. *Harmonization and partnerships.* IFAD's convening power to establish or deepen partnerships with International Financial Institutions (IFIs) such as the World Bank, the African Development Bank (AfDB), the Islamic Development Bank (IsDB), the OPEC Fund for International Development (OFID), climate funds and bilateral agencies will be key to project success. To ensure coordination/harmonization of efforts between IFIs, IFAD will work with the MoA's CPCU and also with the new Delivery Unit established at the State House, with support from the Tony Blair Initiative (TBI). IFAD's strong ties with FAO's Investment Centre (DPI) also enables The Gambia to benefit from the best international technical assistance for project implementation support and evaluation. Regarding activities targeting youth, IFAD will collaborate with UNDP to support the Songhai Training Centre. **At country level, ROOTS will work closely with FAO to implement the GEF component of the project and provide technical assistance and knowledge management.** The project will also sign operational partnerships with civil society (e.g. NACOFAG), private sector representatives (e.g. the GCCI) and local NGOs.

G. Costs, benefits and financing

a. Project costs

90. The total costs of the project over a period of 6 years including provisions for physical contingencies and price increase is GMD 4 billion, equivalent to USD 80 million. The base costs are GMD 3.5 billion (USD 70.2 million). Provisions for physical and financial contingencies amount to respectively to GMD 71.2 million (USD 1.4 million) and GMD 416.2 million (USD 8.3 million).
91. **Project costs by component are as follows: (i) Component 1: US\$53.26 million; and (ii) Component 2: US\$18.39 million. The management and coordination costs are US\$8.36 million or about 10.4 per cent of the project costs.**
92. **The total amount of IFAD Climate finance for the ROOTS is calculated [1] as US\$ 8.61 million, which represents 40 per cent of IFAD investment**

times, better visibility and greater access to data as well shorten the disbursement cycle of funds.

d. Summary of benefits and economic analysis

96. **The financial analysis shows profitable investments with an Economic Internal Rate of Return of 16.3 percent and generating a net present value (at 6 percent discount rate) of US\$37.1 million, including the environmental benefits (on a budget of US\$80 million). The results are robust under various scenarios of implementation delays, reduced benefits and adoption. The economic analysis takes into account all aggregate benefits of the production activities, 4Ps and environmental co-benefits. The sensitivity analysis shows robust results in all scenarios using different risk levels.**
97. As the first component accounts for two-thirds of the overall budget, the Economic and Financial Analysis (EFA) is centered on the benefits arising from the main production-related activities. In particular, the project is expected to generate additional improved production and income for beneficiaries through its mix of land development and support for agricultural inputs tailored to irrigated and rain fed rice and upgraded and new vegetable gardens. In addition, poultry production will be integrated into some of the new market-oriented vegetable gardens. The first component will also generate income-generating benefits for the youth, who will be expected to engage in service delivery. The second component will generate two streams of benefits: first, its main intervention areas, coupled with the support for SMEs and FOs, will generate a pull effect for the production activities. Effects are expected to include a reduction of post-harvest losses, in particular for vegetables, gradual price increases as well as value addition. Second, the project will support, based on demand, 4P-engaged SMEs and FOs that will generate additional benefits as they develop and grow. The project will generate environmental benefits (quantified with the FAO Ex Act tool) through its reforestation activities and improved cropping practices. ROOTS will also impact other developmental outcomes, unquantified at this stage, but which include better nutrition, an improved policy dialogue and enabling environment for agriculture, value addition and greater gender equity. Overall, all of the models assessed as part of this analysis appear viable, generating significant amounts of additional income and attractive returns on the investment (see Table 4 below).

Table 2 Summary results of the financial analysis

Financial Analysis: Summary results			Additional benefits/year		FIRR	NPV @ 8% (10-year)	
		Unit	(GMD)	(USD)	(percentage)	(GMD)	(USD)
Irrigated tidal rice	Rehabilitated perimeters	ha	42,238	845	N/A	255,386	5,108
<i>Non-SRI (80%)</i>	New perimeters	ha	47,948	959	N/A	292,573	5,851
Irrigated tidal rice	Rehabilitated perimeters	ha	105,345	2,107	N/A	656,120	13,122
<i>SRI (20%)</i>	New perimeters	ha	111,055	2,221	N/A	694,434	13,889
Rain fed tidal zone rice	Existing sites	ha	11,723	234	N/A	69,892	1,398
Rain fed lowland rice	Existing sites	ha	12,093	242	N/A	77,016	1,540
Upgraded vegetable garden	Existing sites	unit	525,016	10,500	38%	1,764,860	35,297
New vegetable garden	New sites	unit	1,290,758	25,815	22%	2,664,653	53,293
Poultry - broiler	New sites	unit	409,590	8,192	N/A	2,328,352	46,567
Poultry - layer	New sites	unit	481,430	9,629	N/A	2,655,853	53,117
Youth-led agribusiness*	New	unit	75,000	1,500	15%	103,171	2,063
Coop agribusiness*	Existing	unit	600,000	12,000	20%	1,215,692	24,314
SME agribusiness*	New/existing	unit	3,000,000	60,000	25%	7,352,085	147,042

* Conservative estimates

e. Exit Strategy and Sustainability

98. The sustainability of project investments (underlying ROOTS' exit strategy) will result from: *the profitability of proposed investments*. Results of the financial analysis show that the proposed activities are financially viable. The analysis carried out on production and 4P models shows profitable investments, with IRRs higher than the opportunity cost of capital, positive NPVs and robust results under different modelling scenarios.

99. Active participation of beneficiaries and local **communities in all aspects of the project implementation cycle will also help ensure project sustainability. Under previous projects, although infrastructure has been instrumental in improving production and productivity and increasing the incomes of the poor, it has not been sustained due to limited community** Under ROOTS, targeted villages/groups will be involved in the selection of infrastructure priorities and the correct sequencing of activities will be pursued to ensure empowerment and ownership for better sustainability. The villages/groups will be involved in planning, implementation, oversight, replacement, repair and maintenance, ensuring that the cost thereof is incorporated into price setting and financial calculations. They will work with locally-based agents (e.g. extension staff, NGOs, civil society organizations) and ROOTS decentralised staff to ensure these messages are internalized.
100. The overall capacity building strategy of the project at all levels will enhance the institutional and individual capacities to sustain the project. Grassroots structures and local institutions will be strengthened with the "learning by doing" methodology to enable them to acquire the knowledge necessary for the sustainable management of natural resources, climate resilient agriculture and value-chain development. FFS, up to now supported by ad-hoc project support, will become an integral part of the national Agricultural Extension system of the MoA and the main learning and knowledge transfer approach to promote climate smart **agriculture** practices (e.g. SRI, composting and drip irrigation). Moreover, sustainability will be **enhanced by implementing** the project through existing public institutions at all levels. The new decentralised PCU units in the five regions will contribute to ensuring the long term sustainability of the project. **In the case of more complex and costly infrastructure like dykes, the government will determine the operational and maintenance arrangements.**
101. *Strengthened youth training institutions.* At ROOTS' exit, youth incubators supported by the project, such as the well-respected Songhai centre, will propose specialised service- and business-oriented training curricula to prepare young people to enter the job market and better harness opportunities in innovations and agribusiness entrepreneurship in a sustainable manner. By connecting the youth to a network of private enterprises willing to contribute to internship and TVET programs, the Songhai centre will support access to decent work opportunities across the agri-food chain, beyond the casual or seasonal work that currently prevail. The project will finance awareness raising, business plan preparation and post-investment monitoring and introduce and support matching grants schemes.
102. *Stronger farmers' organizations.* The project will empower FOs at various levels by following a holistic capacity development approach. At the end of the project, the empowered FO umbrella organization (NACOFAG) will deliver better services to its members on cooperative governance, organizational management, development of business plans and provision of business advisory services. Strengthened national commodity organizations, with a legitimacy built on a wide membership base and an inclusive leadership and governance structure, will provide better economic services for their members. Strengthened FOs will independently serve their members (e.g. on accessing inputs and engaging in contract farming) without the project acting as a broker or a guarantee.
103. *Sustainable infrastructure.* **The PSU will hire an ITA¹¹ to oversee, with support of a DCM, the FS&DD and supervision of civil works and transfer knowledge and skills to local staff.** While the infrastructure investments will be implemented with external contractors and technical assistance, the operation and management of the facilities will ultimately rest with the WUMUs, the beneficiary cooperatives and village development committees. The project will ensure that these groups acquire the knowledge and necessary skills to operate and maintain the facilities. Technical and managerial capacity development to WUMUs for proper O&M and optimal on-farm water management system will be financed. Concerted efforts will be made to promote volumetric-based water service fees collection systems to ensure that O&M and replacement fees are deposited in the WUMU bank accounts and the exit strategy is in place. **As part of the policy dialogue, the project will work on the definition of WUMUs' status and their role in the O&M of irrigation infrastructure (which remains state property).**
104. *Financial inclusion.* By promoting savings mobilisation remittances/transfers in credible institutions such as MFIs and credit unions, farmers will be empowered to better sustain their productive assets without the project's continued sponsorship and possibly access short-term loans for working capital needs. Financial inclusion that allows a more formal and secure access to liquidity will improve farmers' capacity to cope with urgent financing needs, hence improving resilience. To sustain rural financial services beyond the project lifespan, the project will support financial literacy with the development and delivery of various modules including on credit and saving. In addition, the progressive introduction of innovative finance models, such as the access to crowdfunding platforms, will be an opportunity to raise new investment capital sources, for example from the Gambian diaspora.

105.

3. Risks

H. Project risks and mitigation measures

106. Project risks include political, economic, implementation, social and environmental risks. At the political and governance levels, the coalition government has not yet completely stabilized and frequent institutional changes, as well as high turnover of government officials and skilled staff, could increase project oversight and implementation uncertainties. **Other specific risks that could substantially reduce potential project returns and impactare related to a) potential delays in the construction of irrigation infrastructure for rice and horticulture production that are expected to drive the market-oriented approach promoted by the project; (b) the level of subsidy in the project that could undermine the long term sustainability of activities and undermine the emergence of a viable network of financing institutions; and (c) the climate change risks to project-supported investments.**
107. To address these risks, IFAD will use its convening power to collaborate with ministries involved in implementation and strengthen project institutions for enhanced coordination. In addition, IFAD will jointly participate with other technical and financial partners in political dialogue. In terms of sector strategies and policies, the risks are low, yet unstable and unpredictable changes can occur during project implementation outside the project's **logical framework. Mitigation** measures include participation and support for policy dialogue, coupled with strengthening of policymaking capacities at the MoA. In addition, project implementation will retain sufficient flexibility to include emerging priorities, in particular at the mid-term review.
108. Economic risks are high. Mainly due to poorly-managed public finances inherited from the former regime, the International Monetary Fund (IMF)/World Bank Debt Sustainability Analysis classifies The Gambia as being in debt distress and at risk of defaulting on government securities, which would have a negative impact on the project. The GoTG is currently implementing an IMF Staff-Monitored Program (SMP) on economic and financial policies focused on debt sustainability and fiscal discipline. The GoTG has committed to exempt taxes on several project expenditure and failure to uphold the commitment would imply additional costs for the project. To address this risk, IFAD will secure a clear agreement on tax exemption during the loan negotiation process.
109. In terms of the technical design, the risks (and mitigation measures) include: (i) delayed tenders and poor quality construction works (addressed through civil works ITA and DCM support); (ii) difficulties with beneficiaries providing their contributions to the MG windows (ROOTS is proposing reduced MG contributions and improved access to finance, including innovative mechanisms); (iii) difficulties of the private sector (SMEs) to engage and maintain 4P arrangements (the project will provide financial, business advisory and capacity development support to engage with emerging FOs); (iv) youth unprepared and financially incapable of accessing project facilities (training and start-up capital provided through the Songhai Centre and other partners); and (v) innovative financing not delivering the expected results (approach to be developed based on best practices in the region and to be fully tested before mid-term review).
110. The institutional capacity for implementation and sustainability presents high risks. There might be inadequate and insufficient capacity to deliver the FFS/extension services to beneficiaries, which the project will address through training of trainers, additional capacity development and staff mobility. Also, the public sector might be insufficiently prepared to support the market driven approach of the project, which will be addressed through policy dialogue, awareness raising and training on inclusive commercial partnerships (4Ps). Finally, based on past experiences, the PSU could be insufficiently staffed for the scope of the project, but ROOTS is proposing a revised organigram with updated roles and more positions, coupled with international and national technical assistance where necessary.
111. The overall financial management risk is rated as high. Main risks that need to be addressed are the capacity gaps in internal controls, internal audit, high reliance on implementing partners without adequate due diligence and concentration of multiple donor funded projects with different requirements managed by the same finance team. With mitigating measures in place, the risk would be reduced to medium. Measures proposed to mitigate these risks include: (i) establishing a cost-sharing policy with all donors involved in ROOTS project implementation in a transparent manner; (ii) strengthening the internal audit unit in terms of qualified, experienced and trained staff whose roles are defined by a comprehensive TOR; (iii) organizing training sessions on the IFAD Anti-Corruption policy for the project staff at least once a year; (v) improving financial reports comparing actual expenditures with budgeted costs including variance analysis; (vi) closely monitoring the staffing configurations to ensure that adequate staff is assigned to fulfill core project management functions; and (vii) performing in-depth due diligence before the selection of implementing partners. The financial performance will be continuously assessed as well.
112. Stakeholder engagement also poses some moderate risks. For example, given the potential overlap, replication and conflicting implementation procedures among projects working in the same value chains in the same geographical areas, beneficiaries could be reticent to fully engage in ROOTS. To mitigate this risk, ROOTS will aim to ensure efficient coordination with other donor-funded projects as well as identification of implementation synergies. Also, beneficiaries could express their unwillingness to contribute financially to their investment projects due to legacies of free distribution of inputs and equipment. However, ROOTS will have lower beneficiary contribution requirements, coupled with additional pre- and post-investment support fully financed by the project. Also, given their novelty, AVIPs could suffer from low stakeholder engagement.
113. Climate risks include increasing temperatures, unpredictable rainfall patterns, drought, higher evapotranspiration, floods and insect infestation. The mitigation measures include the introduction of climate-resilient technologies and

practices (adapted seeds, agroforestry, integrated soil fertility), coupled with land development adapted to climate change (anti-salinization and anti-erosion works). Social risks include the exclusion of women from matching grant financing or their financial inability to provide their own contribution, which will be addressed through careful monitoring of gender quotas and specific access to finance. In addition, rural-urban migration and emigration (particularly of youth) will continue to depopulate rural areas, yet the project will focus on income generating rural-based activities and will provide dedicated training and matching grant financing for youth.

114. The overall FM risk is rated as high. Main risks that need to be addressed are the capacity gaps in internal controls, internal audit, high reliance on implementing partners without adequate due diligence and concentration of multiple donor funded projects with different requirements managed by the same finance team. With mitigating measures in place, the risk would be reduced to medium. Measures proposed to mitigate these risks include: (i) establishing a cost-sharing policy with all donors involved in ROOTS project implementation in a transparent manner; (ii) strengthening the internal audit unit in terms of qualified, experienced and trained staff whose roles are defined by a comprehensive TOR; (iii) organizing training sessions on the IFAD Anti-Corruption policy for the project staff at least once a year; (iv) improving financial reports comparing actual expenditures with budgeted costs including variance analysis; (v) closely monitoring the staffing configurations to ensure that adequate staff is assigned to fulfill core project management functions; and (vi) performing in-depth due diligence before the selection of implementing partners. The financial performance will be continuously assessed as well.

I. Environment and Social category

115. In line with IFAD's Social, Environmental and Climate Change Assessment Procedures (SECAP), ROOTS is classified as a **Category B Program**, implying that ROOTS is **unlikely** to cause **significant** adverse environmental effects. Key risks to environmental and social management are: poor governance and lack of institutional, technical and organizational capacity, which can be mitigated through capacity building of multiple actors in technical, management and governance aspects, and strengthening of women's and farmers organizations, upgrading of vegetable gardens with solar powered irrigation pumping systems, intercropping, systematically introducing nutrient and vitamin-rich crops, agroforestry, promotion of sustainable land and water management practices and youth training support/youth incubation including on sustainable management of natural resources. ROOTS will support ecosystem preservation activities such as the rehabilitation of 1,300ha of mangroves and 1,400ha of community forests. To mitigate potential social exclusion and improve income particularly for youth and women, the project will support the creation of solution-oriented inclusive platforms for high-level policy dialogue between private operators, FOs and public authorities and access to land and credit. **The project will not support Category A activities (see exclusion in the ESMF) and in addition and in case changes occur during implementation, as per IFAD policy the project will require an upgrade and resubmission for review to the Evaluation Committee and approval by the Executive Board.**

J. Climate Risk classification

116. Based on IFAD's climate risk categorization, **ROOTS is classified 'high'**. To **address the impact of** climate change, the project will be supporting climate resilient infrastructure in the targeted areas to expand arable land and water management productivity and reduce poor people's vulnerability to natural hazards, **food insecurity and nutrition, the nature of risks and exposure to climate change**. Sustainable land use and forest ecosystems will contribute to reducing GHG emissions. Climate resilient infrastructure (land and water development) and upgraded gardens will lead to secure production and reduce the risk of low yields while contributing to expanding the period of production from the three months of the rainy season to six to nine months within the dry season. Good climate resilient agricultural practices in rice and horticulture will be promoted to address drought, flooding, salinization, locusts effects and harsh environments (land degradation). Through the capacity building strategy, the project will address the limited knowledge of climate change impacts on smallholder agricultural value chains and landscapes and effective adoption and implementation of adaptation interventions. Specific training will be provided to women and youth on renewable energy for agriculture and climate smart agriculture. The project will also support the development of new modules on climate resilient agriculture, waste management and renewable energy for the Songhai training Centre.

4. Implementation

K. Organizational Framework

a. Project management and coordination

117. The MoA will be the lead agency and will be responsible for project oversight and implementation, and provide inter-

ministerial coordination. Through its CPCU, the MoA will ensure harmonization and alignment among donors. A National Steering Committee (NSC)^[1] and technical advisory committees will be established for project strategic direction and policy guidance. To ensure timely and effective execution of ROOTS' day-to-day activities, the MoA will establish a PSU at national level, seconded by five Regional Coordination Units (RCUs).

118. The PSU will be in charge of project-level coordination and oversight. The PSU will be comprised of: (i) a Project Director; (ii) a Capacity Development and Knowledge Management Officer; (iii) a Monitoring and Evaluation Officer; (iv) a Business Development Officer; (v) a Social Inclusion Officer; (vi) a Senior Climate-smart Agriculture Officer; (vii) a Climate Change and Natural Resources Management Officer; (viii) a Senior Engineer;^[2] (ix) a Water Resources Officer;^[3] (x) a Financial Controller; and (xi) a Procurement Officer. The Senior Climate-smart Agriculture Officer will be the team leader for Component 1 and the Business Development Officer will be the team leader for Component 2. The PSU will work through implementing partners, which will include: (i) technical units in the MoA or other line ministries; (ii) FOs; (iii) national and international NGOs; and (iv) the private sector.
119. In each of the five regions covered by the project, RCUs will be established. A Regional Coordinator post will be financed to strengthen the project delivery and to improve synergy and complementarity with other on-going projects. The RCU will be comprised of four field assistants posts to cover: (i) sustainable rice production (ii) integrated market-oriented vegetable gardens; (iii) FOs capacity development; and (iv) market and value-chains. The Regional Coordinator will work under the leadership of the MoA's Regional Agriculture Director. **At the loan negotiations stage, the type and length of contracts for each of the staff will be clearly defined and it is expected that staff will neither be terminated nor rotated without prior consent by IFAD.**
120. In line with ROOTS objectives and based on the main lessons learned from NEMA, International Technical Assistance,^[4] progressively phasing out after two years, will be recruited to ensure the smooth implementation of Component 2. An international Technical Assistant (Senior Engineer) supporting activities related to water resources management, infrastructure and irrigation will also be recruited for five.
121. To ensure a smooth transition between NEMA and ROOTS, priority will be given to NEMA's core team through performance evaluations. The unfilled positions after evaluation plus all new positions will be advertised and filled with the support of an international recruitment company. The MoA will lead and oversee the recruitment of PSU staff.
122. **As part of the RBA collaboration, ROOTS will partner with the FAO country office to provide technical support for the implementation of some components, including the GEF-financed activities. Through its field presence and knowledge, FAO will focus its technical assistance on capacity building of FOs, marketing, business planning etc., as well as the capacity building of the decentralised PMU on various tools and instruments for rice and vegetable production.**

Coordination arrangements concerning the flow of funds

123. **The overall coordination of this programme will be ensured by IFAD where the institution will have the following arrangements with regard to the flow of funds:**
124. **AfD Grant: IFAD will manage directly the AfD grants portion in accordance with the agreement between the two organizations and already reflected in the PDR. The financial management of and procurement for the AfD grant will be carried out in accordance with IFAD applicable rules and practices, as well as IFAD's Program Implementation Manual (PIM), the program specific PIM and loan administration arrangements established through the Letter to the Borrower. During the supervision missions, semi-annual and annual project reports will be prepared by the /Programme coordination unit; reports (progress reports, lessons learnt, expenditure, and project risk) will be provided by ROOTS PMU who monitors progress of implementation of the project. IFAD will conduct joint supervisions with AfDB and provide regular reporting to the AfDB on the use and performance of the AfDB grant.**
125. **With regard to the GEF grant, the IFAD internal procedures on supplementary funds will be applied. As the endorsed accredited entity, IFAD will develop the project information form (PIF) and the medium size project to submit to the GEF for approval. IFAD as Implementing Agency will manage the GEF grants and the executing entities (ministry of environment and agriculture) with the support of FAO will implement the activities. IFAD will report to the GEF secretariat on the performance of the grant with the Project Information /forms (PIFs). As the grant is fully blended with the IFAD investment, supervisions mission will be conducted at the same time the ROOTS and the GEF component using the supervision template and PCR. An annual PIR will submitted to the GEF with financial reports. A final completion report will be completed at the end of the project.**
126. **OFID: The IFAD internal procedures on OFID funds will be applied. The OFID loan repayment will be done based on the lending terms agreement between the GoTG and OFID. IFAD will provide reporting to OFID on the performance and the use of OFID funds through supervision, MTR and completion missions. The PMI will be used to support the implementation of the OFID funds.**

127. For these co-financing, government authorities, members of Project National Steering Committee and IFAD staff will conduct regular field visits to project sites based on the schedule established in the project's Inception Report/Annual Work Plan to assess project progress first hand. Procurement plans will be conducted in accordance with IFAD's procurement handbook and guideline Procurement plans will be prepared annually and validated by the steering committee.

b. Financial Management, Procurement and Governance

128. PSU will carry out procurement functions with the support of the CPCU in line with the current Gambia Public Procurement Law (2014). The Gambia has a history of practicing market-based and competition-based techniques for contracting the supply of goods, works and public service delivery. The legislation contains significant provisions on probity and anti-corruption, including sanctions and penalties in the event of discovery. All procurement under the project will be carried out under the supervision of the PSU's staff. Tendering for most works and locally-available goods would be carried out by the PSU in collaboration with the CPCU Contracts Committee (Evaluation Committee). Other procurement subject to local shopping methods will be carried out by the PSU, with implementing agencies providing necessary technical specifications, bills of quantities and terms of reference. Bids will be evaluated by the CPCU Contract Committee. In consultation with the borrower/recipient, an 18-month procurement plan has been prepared. It includes: (i) a description of each procurement activity to be undertaken; (ii) the estimated value of each activity; (iii) the method of procurement to be adopted; and (iv) the method of review IFAD will undertake for each activity (section III.H of IFAD Procurement Guidelines).
129. The project will apply IFAD's Anti-corruption policy under which there is zero-tolerance of activities where it has been determined, through an investigation performed by the Fund, the borrower or another competent entity, that fraudulent, corrupt, collusive or coercive actions have occurred in projects financed through its loans and grants, and it shall enforce a range of sanctions in accordance with the provisions of the applicable IFAD rules and regulations and legal instruments. 'Zero tolerance' means that IFAD will pursue all allegations falling under the scope of this policy and that appropriate sanctions will be applied where the allegations are substantiated. The Fund will continue to improve its internal controls, including controls inherent in or pertaining to its project activities, so as to ensure that it is effective in preventing, detecting and investigating fraudulent, corrupt, collusive and coercive practices. The Fund shall take all possible actions to protect from reprisals individuals who help reveal corrupt practices in its project or grant activities and individuals or entities subject to unfair or malicious allegations.
130. The PSU will prepare and submit to IFAD the following financial reports generated by the accounting software: (i) Quarterly consolidated interim financial reports (IFRs); and (ii) Annual consolidated Financial Statements within three months after the end of the fiscal year. In addition, the financial reports will include at the minimum the following information: (i) sources and uses of funds by financing source and expenditure category; (ii) incurred expenditures by component and financing source; (iii) actual expenditures vs budgeted expenditures by financing source by component and category; (iv) designated account reconciliations; (v) Statement of Expenditures - Withdrawal Application Statement; and (vi) a fixed asset register. The financial reports will also include cash contributions from all financing sources, and in-kind contributions will be estimated and disclosed in the notes as well.
131. The internal auditor will focus on activities such as delivery of trainings, identification of civil works sites, performance of contractors, distribution of equipment, performance of implementing partners and matching grants, and the related internal controls and segregation of duties. For the PSU of ROOTS, (i) the internal audit unit shall be appropriately staffed with qualified, experienced and trained staff; (ii) the internal auditor will be provided with a comprehensive TOR; and (iii) the internal audit reports will be shared with the PSU for management's response before being finalized and submitted to CPCU and IFAD.
132. As is the case with NEMA, the National Audit Office of the Gambia will be responsible for an annual financial audit for the project financial statements in accordance with INTOSAI/ISSAI standards and IFAD guidelines with project audits. The terms of reference for the audit will be prepared by the project and cleared by IFAD on an annual basis. The purpose of the audit is to express an opinion on the financial statements. According to the new directive, the auditor has to give a single opinion on the financial statements. Additionally, the auditors will also prepare a Management Letter giving observations and comments on the internal control systems of the PSU as well as the implementing partners, and providing recommendations for improvements in accounting, records management, systems, controls, compliance with financial covenants in the Financing Agreement and compliance with the previous year's auditors' recommendations. The audit report, including the management letter covering the audit observations on internal controls, will be submitted to IFAD within six months of the end of the fiscal year.

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

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

138. As per good practice and IFAD's standard requirement, the project will be implemented based on detailed AWPBs. The preparation of the AWPB, including the role of the various stakeholders, is described in the project implementation manual (PIM, Annex 8). The communities will be mobilized, sensitized and organized for this purpose by the ROOTS regional coordination units under the leadership of the regional agriculture directorates.
139. A robust and user-friendly planning, monitoring, evaluation, learning and communication system (PM&E) will be established in line with the IFAD's ORMS and GRIPS. The main objectives of the PM&E are to: (i) assess the project's achievements at the level of outcomes and impact, and compliance with the COSOP results management framework; (ii) provide timely and accurate information of project implementation progress, with an emphasis to monitor performance, based on outputs delivery; (iii) provide reliable and relevant information to all the stakeholders

to improve transparency; (iv) define and assign tasks, manage workflow on a timely basis and track the various components and milestone deadlines; and (v) evaluate the performance of implementing agencies and service providers. This system will include citizen engagement/ Third Party Monitoring (TPM) in order to involve beneficiaries and frontline actors in data collection and validation.^[1] Impacts will be evaluated against a baseline study, a mid-term evaluation and an ex post evaluation, which will use key indicators in line with the ORMS. This system will also feed the GANAD used by other organizations. The PM&E system will be developed to verify targeting performance and reflect gender and youth perspectives of impact.

140. The project PM&E organizational set up is aligned with the ROOTS institutional arrangement. Overall responsibility for M&E will rest with the M&E Officer. The M&E Officer will work closely with the CPCU. At the regional level, the Regional Coordinator will be in charge of M&E and report directly to the M&E officer. The Regional coordinator will work closely with Field Assistants, who will be in charge of the M&E at field level and support community participatory in the M&E process. To establish an integrated M&E system, the M&E officer will work with each component team leader. A comprehensive ROOTS M&E manual, together with a well-functioning web-based Management Information System (MIS), will be developed within project year 1.

141. Successive independent and self-evaluations have identified project M&E as an area for improvement in IFAD operations. Human resource capacity is highlighted as a major barrier in countries for better M&E performance. Furthermore, M&E in the agriculture sector, more particularly structures and skills to collect data, measure and manage for results has remained weaker in comparison to social sectors. To address this challenge, IFAD has developed an innovative training and certification framework for project staff on M&E in rural development. IFAD's flagship PriME trains and certifies staff in project management units. The training program included in ROOTS consists of two required modules on the Fundamentals of M&E. After each module, participants (M&E officer, Regional Coordinator, Field Assistants, but also all service providers) will be required to take a rigorous assessment to demonstrate uptake of the course material. Upon successful completion of the assessments, participants receive a certification in the Fundamentals of M&E. M&E officers recruited will be required to participate in PriME within the first year of project implementation.

142. The project will also recruit one Capacity Development and Knowledge Management officer (CD/KM Officer). The CD/KM Officer will be responsible for the capacity development, knowledge management and communication activities of ROOTS. Based on the needs and activities planned, the CD/KM officer will develop each year an annual capacity-building plan. This plan will be fully part of the project annual work plan and budget submitted for approval. In the first year of ROOTS, a knowledge management framework will be developed with the support of a service provider.

143. For external and internal communication, the project will consider the diversity of communication objectives according to the stakeholders to be reached (e.g., beneficiaries, implementing partners, policy makers) and to use the most appropriate communication channels for exchange, sharing and learning purposes (e.g., radio, brochures, studies, articles, newsletter, television and social media). A project website will be designed and operationalized and ROOTS will pay particular attention to the communication on cross-cutting themes promoted by the project, such as social inclusion, gender mainstreaming, youth inclusion and adaptation to climate change.

144.

b. Innovation and scaling up

145. With technical assistance from IFAD,^[1] ROOTS will gradually introduce innovations and sophistications in the matching-grant schemes, for example the access to capital from the diaspora community through crowdfunding platforms. This innovation, tested as a pilot, will allow the blending of financing sources grouped together thanks to the project (i.e. grants, entrepreneur equity, loans or equipment supplier loans) with additional sources of financing. It will allow the project to progressively move away from full subsidies to commercial activities that will be financially viable and self-sustaining.

146. Investment of diaspora capital in SMEs can have transformative effects on livelihoods and communities. IFAD has experience in supporting diaspora investment programs in Sub-Saharan Africa, mobilizing, channelling and blending diaspora funds with project grants for productive investments. IFAD recently developed two diaspora investment models that allow diaspora capital to be invested in a secure way, which have proven to be successful in helping to fill the SME and youth financing gaps. In a fragile setting like Somalia, IFAD supported local business owners and the diaspora to co-finance investment projects in the range of US\$20,000 to US\$250,000, through a local Somali AgriFood Fund linked to the diaspora. Fifteen businesses were financed in two years and about 400 direct and indirect jobs were created. In Mali, IFAD supported the set-up of the Babyloan Mali platform to enable the Malian community in France to pool small loans (less than EUR 40 each) to collectively finance rural young micro-entrepreneurs supported by IFAD. As the project is entering its second year of operation, 110 small youth-led agribusinesses have been financed.

147. In The Gambia, the potential for engineering similar innovative models is underlined by a conducive policy

environment (e.g. the Diaspora Strategy recognizes the diaspora as the “8th Region of The Gambia” and as a key investor for the country and includes diaspora investment targets),^[2] a large Gambian diaspora community and the existence of a burgeoning crowdfunding ecosystem (e.g. Money Farm and the online platform under construction at the GCCI). ROOTS will strengthen these local initiatives and support young entrepreneurs and SMEs leveraging private finance to expand their activities or small business.

M. Implementation plans

a. Implementation readiness and start-up plans.

148. ROOTS' start-up plan and activities to be implemented before project effectiveness include: (i) establishing/recruiting the project's technical team at national and regional levels, based on the performance assessment of NEMA staff, and an external recruitment process led by a third party (international recruitment company); (ii) developing a detailed M&E manual and MIS system; (iii) initiating the procurement of equipment and vehicles that are essential to start the project; (iv) embarking upon districts and village targeting; (v) launching the bidding process for the two international technical assistances supporting the project support unit; (vi) performing the baseline survey. The start-up plan will be financed, in part, by the FIPS (see annex 11).

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

149. One of the most important challenges identified during NEMA's mid-term review and ROOTS design is low implementation capacity. To respond to this challenge, and to ensure that project's resources are being used effectively to achieve the PDO, the implementation support strategy will use a number of instruments to review progress and address operational issues. These include:

150. *Implementation support missions*: IFAD's Country Programme Manager will conduct semi-annual review and implementation support missions to review ROOTS implementation performance and progress toward the achievement of the PDO. Given the overall design and scope of the project, a multi-disciplinary team (from headquarters, but also from the Dakar and Abidjan regional Hubs) comprised of technical specialists, along with fiduciary, environmental, social, and operations specialists will support the GoTG in implementing the project. Support from technical partners, such as DPI, will be sought when needed. The first implementation support mission will take place as soon as possible after effectiveness to provide start-up support through direct and timely feedback on the quality of the AWPB and its soundness and acceptability.

151. *Mid-term review (MTR)*: A MTR will be carried out mid-way through the implementation phase. It will include a comprehensive assessment of the overall progress with implementation and achievement of ROOTS objectives as laid out in the Results Framework. The MTR will also serve as a platform for revisiting design issues that may require adjustments to ensure satisfactory achievement of the project development objectives.

152. *Implementation completion*: At project closure, IFAD will carry out a project completion report to assess the success of the project, based on PDO level outcomes and outputs indicators, and draw lessons from its implementation.

Footnotes

Executive Summary

[1] <https://www.ifad.org/en/web/ioe/evaluation/asset/39828469>

[2] Roughly 3-5km each portion for every 200ha section.

National Context

[1] Economist Intelligence Unit.

[2] World Bank (2018). Remittances represent 20.5 per cent of GDP and have grown more than 10 per cent annually since 2009.

[3] World Bank. 2017. World Development Indicators.

[4] http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/brochure_ITC-Gambia%2010_web.pdf

Special aspects relating to IFAD's corporate mainstreaming priorities

[1] UNDP, Human Development Report, Education Index, 2017.

[2] UNDP, National Human Development Report, 2014.

[4] WFP-CFSVA, 2016; Joint Gambia Government/FAO/CILSS and WFP Pre-harvest Assessment, 2

Lessons learned

[1] Lowlands Agricultural Development Program (LADEP), Participatory Integrated Watershed Management Project (PIWAMP), Rural Finance Project (RFP), and National Agricultural Land and Water Management Development Project (NEMA)

[2] Nigeria Erosion and Watershed Management and Project (NEWMAP), World Bank-funded.

[4] Farmers' Organizations in The Gambia: Capacity Assessment in the NEMA intervening area, April 2017.

[6] CTA, 2018. Public, private, producer partnerships in East Africa. Experience Capitalization Series 2. Wageningen.

[7] *Projet d'Appui à l'Agriculture et Accès aux Marchés (PADAAM)*

[8] *Projet d'Appui aux Filières Inclusives (PRODEFI)*.

[9] *Appui au financement inclusif rural au Mali (INCLUSIF)*.

[10] Gambia Commercial Agriculture and Value-Chains (GCAV). Financed by World Bank.

[11] *Formation professionnelle, Insertion et appui à l'Entrepreneuriat des jeunes Ruraux ; Programme de Microfinance Rurale.*

Project objectives

[1] Detailed targeting strategy in Annex 8.

[2] See disaggregation of beneficiaries in the logical framework.

[3] Based on the average of 8 persons per household.

Components

[1] See Sub-Component 2.3, on Policy Dialogue and issues related to access of the poor, women and youth to agricultural land. The Project will work closely with NAWFA for this activity.

[3] (25-75 ha per community land)

[4] (3-5 km per portion)

[5] See detailed ToRs for the ITA in the PIM (Annex 8).

[6] Under the Ministry of Environment, Climate Change & Natural Resources.

[9] Eight by FAO from 2013 to 2016, 33 by the ongoing NEMA project, as well as 20 by the World Bank-funded GCAV.

[10] Network of Farmers Organizations and Agricultural Producers of West Africa (ROPPA)

[11] *Association Sénégalaise pour la Promotion du Développement par la Base (ASPRODEB)*.

[12] Details on the Matching Grant mechanism are presented in Annex 8, PIM.

Costs

[1] *As per the MDB Methodologies for Tracking Climate Adaptation and Mitigation Finance*

Project financing/co-financing strategy and plan

[1] **Faster Implementation of Project Start-up Instruments**

Exit Strategy

[1] See detailed ToRs for the ITA in the PIM (Annex 8).

Implementation/ organizational framework

Project Management

[1] See Project Implementation Manual (PIM) for the NSC detailed composition.

[2] International Technical Assistance described under component 1, sub-component 1.

[3] National technical assistance described under component 1, sub-component 1.

[4] ToRs of the 4P International Technical Assistance are available in the PIM.

Monitoring and Evaluation

[1] Beneficiaries and frontline actors will be significantly involved in data collection and validation, which will be verified by the project team and complement the M&E system. A social accountability approach will be entertained, tailored to the specific context, capacities (e.g., information systems), incentives and institutional arrangements. As such, a comprehensive yet rapid assessment should be carried on first to identify ongoing efforts to systematically engage citizens, including for government and private sector key stakeholders involved, and therefore better understand and prioritize the specific tranches within ROOTS' results chain that can be mostly benefited from increased citizen engagement, especially through third-party monitoring (TPM). After completion of the assessment, the objectives, mechanisms (e.g., citizen report cards, social audits), and organization responsible (e.g., non-profit organization, FO) for TPM will be specified, indicating the link with ROOTS LogFrame indicators, as well as the processes (e.g., data collection) and incentives to secure a two-way interaction between citizens (beneficiaries and/or non/beneficiaries) and government and private sector.

Innovation and scaling up

[1] Financing For Remittance Team (FFR).

[2] Diaspora Investment and diaspora bonds. The Central Bank of The Gambia (CBG) and GIEPA, together with Ministry of Finance and other partners, shall facilitate 20 Diaspora Direct Investments (DDIs) and issue 2 Diaspora Bonds by 2021.

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 1: Logframe

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Logical Framework

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outreach ROOTS	1.b Estimated corresponding total number of households members				Progress Report	Baseline, Mid-term	Completion PSU	80% Women 20% men. A 25% of young people targeted. Average per HH 9. Stable political and macro-economic environment.
	Household members		270000	360000				
	1.a Corresponding number of households reached				Progress Report	Baseline, Mid-term	Completion PSU	
	Women-headed households							
	Non-women-headed households		30000	40000				
	1 Persons receiving services promoted or supported by the project				Progress Report	Baseline, Mid-term	Completion PSU	
	Females		16000	32000				
	Males		4000	8000				
	Young		5000	10000				
	Not Young							
	Indigenous people							
Non-Indigenous people								
Project Goal To improve food security, nutrition and smallholder farmers' resilience to climate change in The Gambia	Targeted households with improved food security				Survey	Baseline, Mid-term, Completion	GoTG, IFAD	Stable political and macro-economic environment.
	targeted households	0	25	50				
	People with greater resilience including people with Disabilities				Survey	Baseline, Mid-term, Completion	GoTG, IFAD	
	People with greater resilience - men	0	4000	8000				

Results Hierarchy	Indicators			Means of Verification			Assumptions	
	Name	Baseline	Mid-Term	End Target	Source	Frequency		Responsibility
	People with greater resilience - women	0	16000	32000				
	People with greater resilience - young	0	5000	10000				
Development Objective To increase agricultural productivity and access to markets for enhanced food security, nutrition and resilience of family farms and farmers organizations	Households reporting an improved access to markets and a 30% income increase				Survey	Baseline, Mid-term	Completion, PSU	Stable political and macro-economic environment. No major natural disaster affects the Project Area
	Households with improved access to market	0	25	50				
	Yields				Progress report	Annual	PSU	
	Rice, non-SRI, tidal	1600	3600	3600				
	Tomatoes	9600	12600	12600				
	Onions	14400	19800	19800				
	% of ROOTS supported beneficiaries (smallholder farmers, processors and marketers) that have increased their real agricultural income (by average 25%)				Progress reports	Annual	PSU	
	Women		40	80				
	Men		10	20				
	Disabled		5	10				
	Young people		15	25				
	1.2.8 Women reporting improved quality of their diets				Progress reports	Annual	PSU	
	Percentage		25	50				
	% Reduction in the prevalence of child malnutrition (stunting, wasting, underweight)				Baseline, SM reports Impact Survey. PCR	Annual	PSU	
	stunting		5	10				
wasting		10	20					

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
	underweight		15	30				
Outcome 1. Environmentally sustainable, climate-resilient and nutrition sensitive technologies and practices are adopted by beneficiaries Environmentally sustainable, climate-resilient and nutrition sensitive technologies and practices are adopted by beneficiaries	1.2.2 Households reporting adoption of new/improved inputs, technologies or practices				Progress Report	Annual	PSU	No major natural disaster affects the Project Area
	Males							
	Females							
	Young							
	Households	0	10000	30000				
Output 1.1 Natural resources are sustainably managed for rice and vegetable production	1.1.2 Farmland under water-related infrastructure constructed/rehabilitated				Progress report	Bi annual	PSU	1st indic Suitable construction companies available Timely procurement 2nd indic Sufficient gardens meeting upgrading criteria Interested groups manage to secure their contribution
	Hectares of land	0	3000	5900				
	Upgraded women-led vegetable gardens (consolidated and new)				Progress Report	Bi Annual	PSU	
	Womoen-led vegetable gardens	0	20	40				
Output 1.2 Access to agricultural services is improved	1.1.4 Persons trained in production practices and/or technologies				Progress Report	Bi annual	PSU	1st indic Existing capacity to deliver FFS 2nd indic Availability of inputs 3rd indic Interested youth manage to secure their equity contribution 3rd indic Quality business plans are prepared
	Men trained in crop							
	Women trained in crop							
	Young people trained in crop							
	Total persons trained in crop	0	14830	23050				
	1.1.3 Rural producers accessing production inputs and/or technological packages				Progress Report	Bi annual	PSU	
	Females							
Males								

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
	Young							
	Total rural producers	0	6000	10000				
	Jobs created (100% youth-led agricultural service businesses)				Review Committee reports	Annual	PSU BDO	
	Jobs	0	200	480				
Outcome 2. Inclusive commercial partnerships between FOs and buyers (through the public-private producers' partnerships/4Ps) are established	2.2.3 Rural producers' organizations engaged in formal partnerships/agreements or contracts with public or private entities				Progress Report	Annual	PSU BDO	Well-functioning AVIPs and effective collaboration with NACOFAG
	Number of POs	0	40	60				
	Women in leadership position							
Output 2.1 Women- and youth-based FOs are equipped with the knowledge and bargaining power to enter into inclusive and sustainable 4Ps	Effective agricultural value chain interaction platforms (AVIPs)				Progress report	Bi annual	PSU, WARF	1st indic Interest of value-chains stakeholders to join VC platforms 2nd indic Suitable construction companies available and timely procurement
	Value chain platforms	0	12	12				
	2.1.6 Market, processing or storage facilities constructed or rehabilitated				Progress Report	Bi Annual	PSU, NACOFAG	
	Market facilities constructed/rehabilitated	0	2	4				
	Processing facilities constructed/rehabilitated	0	2	4				
	Storage facilities constructed/rehabilitated	0	2	4				
Output 2.2 Viable and sustainable 4P business plans are designed and financed	SMEs engaged in 4Ps				Review Committee reports	Annual	PSU BOD	Interested businesses manage to secure their contribution 4P partnerships effectively established
	SME	0	10	20				

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

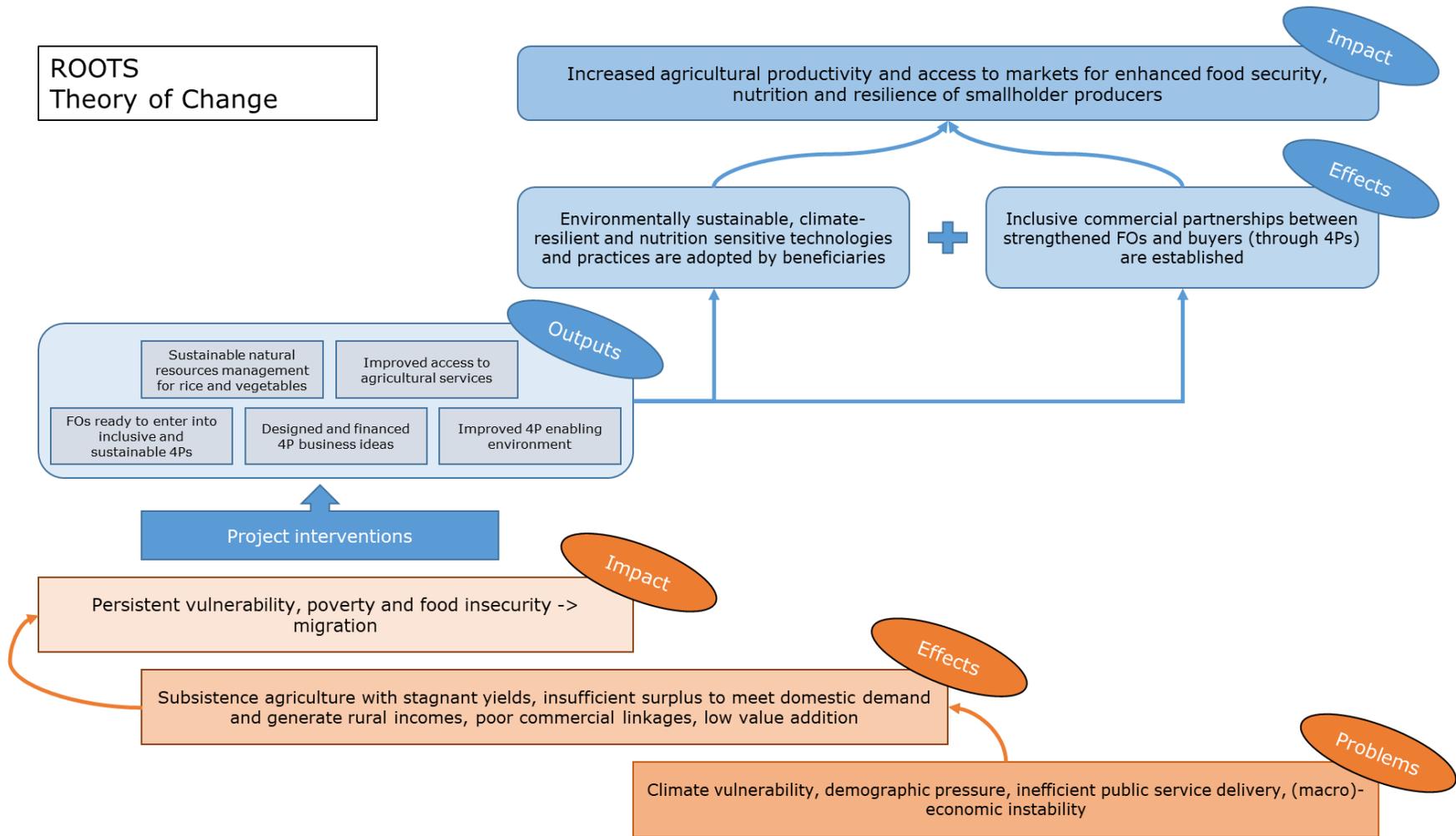
Project Design Report

Annex 2: Theory of change

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 2: Theory of Change



Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 3: Project cost and financing: Detailed costs tables

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 3: Project cost and financing: Detailed costs tables

I. Introduction

1. This annex presents the project cost analysis, performed with the Costab software. The cost estimation is based mainly on the primary data collected during the formulation mission, the lessons learnt from NEMA and other similar projects in The Gambia. The first part presents the basic assumptions regarding the start and duration of the project, the physical contingency and price increases, the official exchange rate, the unit costs, the expenditure categories and the share of taxes and currencies in the costs. The second part presents the project costs estimated by component and source of funding. The detailed costs tables for the different components and sub-components of the project are presented in table 3.

2. ROOTS is based on the participatory and demand driven approach and its costs should be considered as indicative by component, sub-component and activity. Although some quantities and unit costs are specified, it is more useful to consider the overall amount planned by activity. The fine-tuning of the activities will be done at the project starting according to the requests expressed by the government and the beneficiaries.

II. Costing assumptions

3. Project costs includes investment and recurrent costs. The main assumptions are:

- The duration of the project is 6 years. The presentation of ROOTS to IFAD' Board is planned for December 2019. The project starting is scheduled for January 2020 and ending in December 2025.
- Estimated costs include all taxes. They include import¹ duties and taxes, Value-Added Tax (VAT)² and direct taxes. The foreign exchange portion costs is the direct and indirect costs of imported goods, services and inputs incorporated into the cost of the project.
- The base costs of local products have been valued at market prices, which includes taxes and represents a real cost for the project. Basic costs of imported products and services includes CIF import prices³, customs duties, value-added tax and national added value (i.e. local handling charges, local transport, financial intermediation and margins of economic operators). The unit prices of goods and services were seized in Costab in United States Dollars (USD).
- For PSU staff costs, a salary grid has been prepared on the basis of NEMA and adjusted to be in line with the United Nations salary scale for national staff in the Gambia (as practiced by other donors).
- Provisions for price increases commonly referred to as "price contingencies", are designed to cope with the effects of inflation and exchange rate devaluation between Gambian Dalasi (GMD) and USD. They are calculated by Costab on the basis of national and international inflation levels. Based on data from the Central Bank of the Gambia and forecasts by the IMF, an inflation rate of 5 per cent at the local level was used. For inflation at the international level, a rate of 2.0 per cent was retained based on World Bank forecasts of the value index of manufactured exports from 15 developed and emerging countries to developing and intermediate income countries ("Manufactures Unit Value Index"/MUV).
- Provisions for physical contingencies are intended to deal with possible errors in estimating quantities and / or methods used in the implementation of the project. They are expressed in terms of percentage of the basic cost and applied for works and irrigation equipment and materials (5%).
- The mission retained the exchange rate of 50 GMD for 1 USD to estimate the project costs. This rate is derived on the official exchange rate of GMD compared to USD during the formulation mission. Based on the historical fluctuations of this exchange rate and the relatively large gap between levels of inflation at the national and international levels, this rate could vary during the project implementation period. However, it remains very difficult to make precise forecasts on this evolution.
- The definition of expenditure categories was made on the basis of IFAD Circular IC/FOD/02/2013 on the standardization of categories of expenditure. Table 1 shows the categories of expenditures and physical contingency rates, taxes and foreign currency units.

¹ The average tariff rate is 12%

² The actual rate is 15%

³ Cost, Insurance and Freight

Table 1: Tax and Currency Rates by Expenditure Category

expenditure categories		physical contingencies	Taxes ⁴ (% of total)	For. ex.
Investment costs				
Works		5%	15%	0%
Equipment, Materials and vehicles	equipment & materials	5%	25%	75%
	vehicles	0%	25%	75%
	Goods, service & inputs	0%	0%	0%
consultancies	studies	0%	0%	25%
	technical assistance national	0%	0%	0%
	international technical assistance	0%	0%	100%
	workshop and training	0%	0%	25%
Grants and Subsidies		0%	0%	0%
Recurrent costs				
Operation costs	Salaries & Allowances	0%	0%	0%
	Operation costs	0%	0%	25%

⁴ Taxes are computed to indicate the revenues foregone by GoTG, as project expenditure is exempted.

III. Project costs

4. The total costs of the project over a period of 6 years including provisions for physical contingencies and price increase is GMD 4 billion, equivalent to USD 80 million. The base costs are GMD 3.5 billion (USD 70.2 million). Provisions for physical and financial contingencies amount to respectively to GMD 71.3 million (USD 1.4 million) and GMD 416.5 million (USD 8.3 million).

5. Project base costs by component (Table 2) are as follows: (Component 1) Agricultural productivity and adaptation to climate change: USD 53.26 million (66.6% of project costs); and (Component 2) Inclusive commercial partnerships and value-addition: USD 18.39 million, equivalent to 23% of the project costs. The management and coordination of ROOTS is estimated at USD 8.36 million or 10.4% of the project cost.

Table 2: Project Cost by Component

The Gambia Resilience of Organisations for Transformative Smallholder Agriculture (ROOTS) Project							%	% Total
Components Project Cost Summary			(GMD '000)			(US\$ '000)	Foreign	Base
	Local	Foreign	Total	Local	Foreign	Total	Exchange	Costs
A. Agriculture Productivity and Adaptation to Clim:								
Infrastructure Development and Management	1 703 495	71 813	1 775 308	34 070	1 436	35 506	4	51
Agricultural Services Provision	411 514	113 299	524 814	8 230	2 266	10 496	22	15
Subtotal	2 115 009	185 112	2 300 121	42 300	3 702	46 002	8	65
B. Access to Markets								
Building Value Chain and Market Linkages	408 087	4 825	412 912	8 162	97	8 258	1	12
4P Financing	409 658	14 653	424 310	8 193	293	8 486	3	12
Subtotal	817 745	19 478	837 222	16 355	390	16 744	2	24
C. Project Management and Coordination	303 016	72 319	375 335	6 060	1 446	7 507	19	11
Total BASELINE COSTS	3 235 770	276 908	3 512 678	64 715	5 538	70 254	8	100
Physical Contingencies	71 157	-	71 157	1 423	-	1 423	-	2
Price Contingencies	405 933	10 222	416 155	8 119	204	8 323	2	12
Total PROJECT COSTS	3 712 860	287 130	3 999 990	74 257	5 743	80 000	7	114

6. The project financing (Table 3) is as follows: (i) IFAD 11 DSF grant for USD 17.02 million (21.3%) (ii) IFAD 11 loan for USD 4.25 million (5.3%); (iii) GEF for USD 5.30 million (6.6%); (iv) OFID for USD 10 million (12.5%); (v) AFD for USD 11.17 million (14.0%); (vi) the Government of the Gambia for USD 5.41 million from tax exemption (6.8 %); and (vii) beneficiaries for USD 6.25 million (7.8%). USD 700,000 allocation for FIPS through the loan component; The financial gap is estimated at USD 20.60 million (corresponding to 25.7% of the project costs) and could be covered from the IFAD 12 allocation (subject to availability of funds, to financial conditions to be determined, and to internal procedures) or from other financiers to be identified.

Table 3: Project Financing Plan by Component

The Gambia
Resilience of Organisations for Transformative Smallholder Agriculture (ROOTS) Project

Components by Financiers
(US\$ '000)

	IFAD 11 Grant		IFAD 11 Loan		IFAD 11 FIPS		GEF		OFID		AFD		Financing Gap		The Government		Beneficiaries		Total		
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
A. Agriculture Productivity and Adaptation to Clim																					
Infrastructure Development and Management	4 406	10.6	826	2.0	-	-	4 216	10.1	10 000	24.0	9 015	21.7	8 414	20.2	4 248	10.2	465	1.1	41 590	52.0	
Agricultural Services Provision	4 977	42.7	1 045	9.0	-	-	508	4.4	-	-	1 106	9.5	1 996	17.1	210	1.8	1 824	15.6	11 666	14.6	
Subtotal	9 383	17.6	1 871	3.5	-	-	4 724	8.9	10 000	18.8	10 121	19.0	10 410	19.5	4 458	8.4	2 289	4.3	53 255	66.6	
B. Access to Markets																					
Building Value Chain and Market Linkages	2 237	23.0	559	5.8	-	-	-	-	-	-	1 047	10.8	5 098	52.5	774	8.0	-	-	9 715	12.1	
4P Financing	1 714	19.8	999	11.5	-	-	200	2.3	-	-	-	-	1 784	20.6	15	0.2	3 960	45.7	8 673	10.8	
Subtotal	3 951	21.5	1 559	8.5	-	-	200	1.1	-	-	1 047	5.7	6 882	37.4	789	4.3	3 960	21.5	18 388	23.0	
C. Project Management and Coordination	3 682	44.1	124	1.5	700	8.4	376	4.5	-	-	-	-	3 308	39.6	165	2.0	-	-	8 356	10.4	
Total PROJECT COSTS	17 016	21.3	3 554	4.4	700	0.9	5 300	6.6	10 000	12.5	11 169	14.0	20 600	25.7	5 412	6.8	6 249	7.8	80 000	100.0	
IFAD 11 Allocation (US\$ '000)	21 270																				
IFAD 11 Grant (80%) (US\$ '000)	17 016																				
IFAD 11 Loan (20%) (US\$ '000)	4 254																				

*Please note that the FIPS has been presented separately in this table, but it is part of the IFAD 11 Loan portion.

7. The breakdown of the expected financing of each financier by category of expenditure is as follows.

Table 4: Funding by category of expenditure

The Gambia
Resilience of Organisations for Transformative Smallholder Agriculture (ROOTS) Pro

Expenditure Accounts by Financ
(US\$ '000)

	IFAD 11 Grant		IFAD 11 Loan		IFAD 11 FIPS		GEF		OFID		AFD		Financing Gap		The Government		Beneficiaries		Total		
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
I. Investment Costs																					
A. Consultancies																					
1. Training & Workshop	1 998	55.1	327	9.0	-	-	100	2.8	-	-	312	8.6	888	24.5	0	-	-	-	3 626	4.5	
2. Studies	208	18.5	11	1.0	370	32.9	-	-	-	-	-	-	536	47.6	0	-	-	-	1 125	1.4	
3. International Technical Assis	2 042	59.9	324	9.5	20	0.6	-	-	-	-	255	7.5	768	22.5	0	-	-	-	3 409	4.3	
4. National Technical Assistanc	140	27.3	25	5.0	20	3.9	281	54.8	-	-	31	5.9	16	3.1	-	-	-	-	513	0.6	
Subtotal	4 388	50.6	688	7.9	410	4.7	381	4.4	-	-	597	6.9	2 209	25.5	0	-	-	-	8 673	10.8	
B. Equipment, Materials and V																					
1. Equipment & Materials	252	54.0	91	19.5	-	-	-	-	-	-	-	-	7	1.5	117	25.0	-	-	467	0.6	
2. Vehicles	733	66.2	83	7.5	-	-	-	-	-	-	-	-	14	1.3	277	25.0	-	-	1 106	1.4	
3. Goods, Services & Inputs	3 802	33.8	789	7.0	290	2.6	3 597	32.0	-	-	482	4.3	2 272	20.2	3	-	-	-	11 235	14.0	
Subtotal	4 787	37.4	963	7.5	290	2.3	3 597	28.1	-	-	482	3.8	2 294	17.9	396	3.1	-	-	12 808	16.0	
C. Works	1 253	3.7	313	0.9	-	-	746	2.2	10 000	29.2	6 425	18.8	10 479	30.6	5 016	14.7	-	-	34 231	42.8	
D. Grants & Subsidies	4 481	23.4	1 553	8.1	-	-	200	1.0	-	-	3 665	19.1	3 037	15.8	-0	-	6 249	32.6	19 185	24.0	
Total Investment Costs	14 909	19.9	3 517	4.7	700	0.9	4 924	6.6	10 000	13.4	11 169	14.9	18 018	24.1	5 412	7.2	6 249	8.3	74 897	93.6	
II. Recurrent Costs																					
A. Operating Costs																					
1. Salaries & Allow ances	1 710	42.1	-	-	-	-	376	9.3	-	-	-	-	1 980	48.7	-	-	-	-	4 066	5.1	
2. Operating Costs																					
International travel	32	46.3	-	-	-	-	-	-	-	-	-	-	37	53.7	-	-	-	-	70	0.1	
Office O&M	39	46.3	-	-	-	-	-	-	-	-	-	-	45	53.7	-	-	-	-	84	0.1	
Vehicles O&M	326	36.9	37	4.2	-	-	-	-	-	-	-	-	520	58.9	-0	-	-	-	883	1.1	
Subtotal	397	38.3	37	3.6	-	-	-	-	-	-	-	-	602	58.1	-0	-	-	-	1 036	1.3	
Total Recurrent Costs	2 107	41.3	37	0.7	-	-	376	7.4	-	-	-	-	2 582	50.6	-0	-	-	-	5 102	6.4	
Total PROJECT COSTS	17 016	21.3	3 554	4.4	700	0.9	5 300	6.6	10 000	12.5	11 169	14.0	20 600	25.7	5 412	6.8	6 249	7.8	80 000	100.0	

8. The breakdown of project expenditures by year is as follows.

Table 5: Project Expenditures by Year and by Category of Expenditure

The Gambia
Resilience of Organisations for Transformative Smallholder Agriculture (ROOTS) Project
Project Components by Year -- Totals Including Contingencies
(US\$ '000)

	Totals Including Contingencies						
	2020	2021	2022	2023	2024	2025	Total
A. Agriculture Productivity and Adaptation to Climate Change							
Infrastructure Development and Management	856	8 107	15 458	15 755	1 302	111	41 590
Agricultural Services Provision	1 703	1 766	2 346	2 893	2 035	922	11 666
Subtotal	2 559	9 873	17 804	18 648	3 337	1 034	53 255
B. Access to Markets							
Building Value Chain and Market Linkages	666	2 554	2 111	2 260	1 917	206	9 715
4P Financing	231	1 483	1 544	2 588	2 571	256	8 673
Subtotal	898	4 037	3 655	4 848	4 488	462	18 388
C. Project Management and Coordination	2 473	1 215	1 079	1 245	1 117	1 228	8 356
Total PROJECT COSTS	5 929	15 126	22 537	24 740	8 942	2 725	80 000

The Gambia
Resilience of Organisations for Transformative Smallholder Agriculture (ROOTS) Project
Table 1: Infrastructure Development and Management

Detailed Costs	Quantities											Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)						Breakdown of Totals Incl. Cont. (US\$ '000)				Parameters (in %)				Summary Divisions		Expenditure		Other Accounts	
	2020	2021	2022	2023	2024	2025	Total	2020	2021	2022	2023		2024	2025	Total	Low	(Excl. Duties & Taxes)	Duties & Taxes	Total	Phy. Cont. Rate	For. Exch.	Gross Tax Rate	Component	Account	Disb. Acct.	Fin. Rule						
I. Investment Costs																																
A. Infrastructure Development and Management for Resilient Rice Cultivation																																
1. Water Resources Monitoring																																
Meeting	-	1	-	-	-	-	1	20,000	-	21.3	-	-	-	-	21.3	5.2	16.1	-	21.3	0.0	25.0	0.0	0.0	SC11	STUD_EA	STUD_DA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Renovate Groundwater Observation Stations & Networks /a	Set	-	6	-	-	-	6	5,000	-	32.3	-	-	-	-	32.3	-	32.3	-	32.3	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Renovate River Flow Data Collection Stations & Networks /b	Set	-	8	-	-	-	8	5,000	-	43.1	-	-	-	-	43.1	-	43.1	-	43.1	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Establish New surface Water Gauging Station and Networks /c	Set	-	-	2	-	-	2	10,000	-	-	22.6	-	-	-	22.6	-	22.6	-	22.6	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Establish New Groundwater Data Collection Networks /d	Set	-	-	5	-	-	5	8,000	-	-	45.2	-	-	-	45.2	-	45.2	-	45.2	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Support Water Resources Management Database & MIS /e	Set	-	1	1	-	-	2	150,000	-	161.4	189.5	-	-	-	350.9	-	350.9	-	350.9	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Subtotal																																
2. FSADD, Supervision/Quality Management, TAs & Capacity Building																																
Irrigation Planning FSADD and Supervision	Lumpsum	50	80	50	-	-	180	1,000	53.8	80.4	59.3	-	-	-	203.5	-	173.0	30.5	203.5	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Community Participatory Consultation /f	Lumpsum	10	20	10	10	-	50	1,000	10.3	21.5	11.3	11.9	-	-	54.9	-	54.9	-	54.9	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Capacity Development and Transfer of Earth Map and Collect Earth /g	Lumpsum	1	-	-	-	-	1	170,000	179.4	-	-	-	-	-	179.4	-	179.4	-	179.4	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (80% FOR 30% FOR 3); IFAD11.L1 (20% FOR 30% FOR 3); FINGAP (0% FOR 3:100% FOR 3)					
Tidal Irrigation Consolidation /h	Ha	300	1,000	-	-	-	1,300	20	6.5	22.6	-	-	-	-	29.1	-	24.7	4.4	29.1	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	IFAD (40%); IFAD11.L1 (10%); OFID (50%)					
New Tidal Irrigation /i	Ha	1,300	1,500	-	-	-	2,800	146	204.3	247.5	-	-	-	-	451.8	-	364.0	87.8	451.8	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	OFID (50%); FINGAP (50%)					
Wet-Season Valley Water Control Cascaded Dykes /j	Ha	100	100	-	-	-	200	120	12.9	13.6	-	-	-	-	25.5	-	22.5	4.0	25.5	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	GEF (10%); FINGAP (90%)					
Micro-Catchments Runoff Harvesting Dykes /k	Ha	300	500	-	-	-	800	80	25.8	45.2	-	-	-	-	125.0	-	60.4	10.7	71.0	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	GEF (8%); AFD (62%); FINGAP (31%)					
Causeway to Access Rice Farm /l	Km	10	10	-	-	-	20	600	6.5	6.8	-	-	-	-	13.2	-	11.3	2.0	13.2	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	AFD (70%); OFID (25%)					
Strengthen Water Users Association for Sustainability /m	WUMU	-	-	20	20	-	40	4,840	-	-	107.5	112.1	-	-	219.6	51.4	168.2	-	219.6	0.0	25.0	0.0	0.0	SC11	TW_EA	TW_DA	IFAD (100%)					
Creation of micro-catchment management committees	committee	-	-	8	7	-	15	48.0	-	-	43.0	39.2	-	-	82.2	19.3	63.0	-	82.2	0.0	25.0	0.0	0.0	SC11	TW_EA	TW_DA	IFAD (70%); AFD (30%)					
On-Site Irrigators Training on Water Management and O&M /n	Person	-	-	1,400	2,400	2,600	1,800	8,200	45.4	-	72.3	129.2	146.0	105.5	403.0	103.4	349.6	-	403.0	0.0	25.0	0.0	0.0	SC11	TW_EA	TW_DA	IFAD (70%); AFD (30%)					
International Technical Assistance (ITA) /o	Month	6	6	6	6	-	24	20,000	123.6	126.1	126.6	131.2	-	-	509.5	509.5	-	509.5	0.0	100.0	0.0	0.0	0.0	SC11	INT_TA_EA	INT_TA_DA	IFAD (36.3%); AFD (50%); FINGAP (13.7%)					
Third Party Quality Enhancement and Control /p /q	Lumpsum	-	-	-	-	-	-	-	150.0	260.0	340.0	10.0	-	-	760.0	-	760.0	-	760.0	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	IFAD (35%); AFD (50%); FINGAP (15%)					
Subtotal																																
3. Infrastructure Development																																
Tidal Irrigation Consolidation	Ha	-	300	600	400	-	1,300	2,000	-	678.0	1,423.9	996.7	-	-	3,098.6	-	2,633.8	464.8	3,098.6	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	IFAD (40%); IFAD11.L1 (10%); OFID (50%)					
New Tidal Irrigation	Ha	-	600	100	1,300	-	2,000	5,835	-	3,956.3	6,231.2	9,450.7	-	-	19,638.3	-	16,922.6	2,940.7	19,638.3	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	OFID (50%); FINGAP (50%)					
Wet-Season Valley Water Control Cascaded Dykes	Ha	-	20	70	40	-	200	5,000	-	113.0	415.3	436.1	261.6	-	1,226.0	-	1,042.1	183.9	1,226.0	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	GEF (24%); FINGAP (76%)					
Micro-Catchments Runoffs Control Dykes	Ha	-	150	350	300	-	800	3,000	-	508.5	1,245.9	1,121.3	-	-	2,875.7	-	2,444.4	431.4	2,875.7	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	GEF (20%); AFD (62%); FINGAP (17.5%)					
Causeway Construction to Access Rice Farms	Km	-	3	7	3	-	20	25,000	-	84.8	207.6	218.0	98.1	-	608.5	-	517.3	91.3	608.5	5.0	0.0	0.0	15.0	SC11	W_EA	W_DA	AFD (70%); OFID (25%)					
4x4 Vehicles /r	Number	1	-	-	-	-	1	35,000	35.4	-	-	-	-	-	35.4	26.5	8.8	35.4	0.0	75.0	25.0	0.0	0.0	SC11	VEH_EA	VEH_DA	IFAD (100%)					
Laptop /s	Number	2	-	-	-	-	2	1,500	3.0	-	-	-	-	-	3.0	2.3	0.8	3.0	0.0	75.0	25.0	0.0	0.0	SC11	EQUIPMAT_EA	EQUIPMAT_DA	IFAD (100%)					
Desktop Computers /t	Number	1	-	-	-	-	1	1,500	1.5	-	-	-	-	-	1.5	1.1	0.4	1.5	0.0	75.0	25.0	0.0	0.0	SC11	EQUIPMAT_EA	EQUIPMAT_DA	IFAD (100%)					
Printers /u	Number	1	-	-	-	-	1	1,000	1.0	-	-	-	-	-	1.0	0.8	0.3	1.0	0.0	75.0	25.0	0.0	0.0	SC11	EQUIPMAT_EA	EQUIPMAT_DA	IFAD (100%)					
Photocopiers /v	Number	1	-	-	-	-	1	2,000	2.0	-	-	-	-	-	2.0	1.5	0.5	2.0	0.0	75.0	25.0	0.0	0.0	SC11	EQUIPMAT_EA	EQUIPMAT_DA	IFAD (100%)					
Subtotal																																
4. Sustainable Forest and Land Management (SFLM)																																
a. Community Agroforestry																																
Community Institution Building	Hectare	200	400	400	400	-	1,400	65	13.3	27.7	28.9	30.1	-	-	99.9	23.8	76.2	-	99.9	0.0	25.0	0.0	0.0	SC11	TW_EA	TW_DA	GEF (100%)					
Survey, Mapping, Management Plans	Hectare	200	400	400	400	-	1,400	180	36.9	77.5	81.4	85.4	-	-	281.2	-	281.2	-	281.2	0.0	0.0	0.0	0.0	SC11	NAT_TA_EA	NAT_TA_DA	IFAD (100%)					
Planting Material	Hectare	200	400	400	400	-	1,400	266	54.5	114.5	120.2	126.3	-	-	415.5	-	415.5	-	415.5	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	GEF (100%)					
Cash for Work	Hectare	200	400	400	400	-	1,400	500	102.5	215.3	228.0	237.3	-	-	781.1	-	781.1	-	781.1	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	GEF (100%)					
Subtotal																																
b. Mangrove Restoration																																
Planting Material	Hectare	100	300	300	300	300	1,300	265.5	27.3	86.0	90.3	94.9	99.6	-	398.2	-	398.2	-	398.2	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	GEF (100%)					
Other Material	Hectare	100	300	300	300	300	1,300	126	12.6	40.4	42.4	44.5	46.7	-	196.6	-	196.6	-	196.6	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	GEF (100%)					
Transport Materials to Site	Hectare	100	300	300	300	300	1,300	375	38.4	121.1	127.1	133.5	140.2	-	560.3	-	600.3	-	600.3	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	GEF (100%)					
Cash for Work	Hectare	100	300	300	300	300	1,300	500	51.3	161.4	169.5	178.0	186.9	-	747.1	-	747.1	-	747.1	0.0	0.0	0.0	0.0	SC11	GSLEA	GSLEA	GEF (100%)					
Subtotal																																
Subtotal																																
B. Market-oriented Integrated Vegetable Gardens																																
1. Upgrading Existing Vegetable Gardens																																
a. Inventory of Existing Gardens	Lumpsum	1	-	-	-	-	1	5,000	5.1	-	-	-	-	-	5.1	-	5.1	-	5.1	0.0	0.0	0.0	0.0	SC11	NAT_TA_EA	NAT_TA_DA	FIRS (< 100% > FT)					
b. FSADD and Supervision	Garden	-	20	20	-	-	40	350	-	7.5	7.9	-	-	-	15.4	-	15.4	-	15.4	0.0	0.0	0.0	0.0	SC11	NAT_TA_EA	NAT_TA_DA	IFAD (80%); IFAD11.L1 (20%)					
c. Upgrading of Existing Gardens	Garden	-	20	20	-	-	40	35,000	-	753.4	791.0	-	-	-	1,544.4	-	1,544.4	-	1,544.4	0.0	0.0	0.0	0.0	SC11	GS_EA	GS_DA	IFAD (80%); IFAD11.L1 (20%)					
d. Irrigators & WUMUs Training on Water Mgt & O&M /w	Person	-	800	800	-	-	1,600	20	-	17.0	17.8	-	-	-	34.8	-	34.8	-	34.8	0.0	25.0	0.0	0.0	0.0	SC11	TW_EA	TW_DA	IFAD (80%); IFAD11.L1 (20%)				
Subtotal																																
2. Financing New Vegetable Gardens																																
a. Identification of Potential Sites																																
Technical Assistance - Desktop Work and Field Visits	Lumpsum	-	1	-	-	-	1	10,000	-	10.8	-	-	-	-	10.8	-	10.8	-	10.8	0.0	0.0	0.0	0.0	0.0	SC11	NAT_TA_EA	NAT_TA_DA	IFAD (100%)				
Community Consultations	Session	-	15	-	-	-	15	1,000	-	16.0																						

Unit	Quantities							Unit Cost (US\$)	Totals Including Contingencies (US\$ '000)							Breakdown of Totals Incl. Cont. (US\$ '000)												
	2020	2021	2022	2023	2024	2025	Total		2020	2021	2022	2023	2024	2025	Total	Local			Phy.			Summary Divisions				Other Accounts		
	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Gross Tax Rate	Component		Expenditure Account	Disb. Acct.	Fin. Rule																	
I. Investment Costs																												
A. Business Plan Development																												
1. Support to GCCI																												
International Technical Assistance	Month	2	2	-	-	-	4	20,000	40.4	41.2	-	-	-	-	81.6	81.6	-	-	81.6	0.0	100.0	0.0	SC22	INT_TA_EA	INT_TA_DA	IFAD (80%); IFAD11.L (20%)		
Training	Session	1	1	-	-	-	2	5,000	5.1	5.3	-	-	-	-	10.4	2.6	7.9	-	10.4	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Study Tour in the Sub-Region/a	Trip	1	-	-	-	-	1	15,000	15.3	-	-	-	-	-	15.3	3.8	11.5	-	15.3	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Vehicles	Unit	2	-	-	-	-	2	30,000	60.6	-	-	-	-	-	60.6	45.5	-	15.2	60.6	0.0	75.0	25.0	SC22	VEH_EA	VEH_DA	IFAD (80%); IFAD11.L (20%)		
Contribution to Staffing Costs	Person	2	2	2	2	2	12	12,000	24.6	25.8	27.1	28.5	29.9	31.4	167.3	-	-	-	167.3	0.0	0.0	0.0	SC22	GS_EA	GS_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
2. Promotion/Awareness Raising																												
National TV Campaigns	Campaign	-	1	1	1	1	4	1,000	-	1.1	1.1	1.2	1.2	-	4.5	1.1	3.5	-	4.5	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Regional Radio Campaigns	Campaign	-	5	5	5	5	20	100	-	0.5	0.6	0.6	0.6	-	2.3	0.5	1.7	-	2.3	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Information Sessions	Session	-	6	6	6	6	24	1,000	-	6.4	6.7	6.9	7.2	-	27.2	6.4	20.9	-	27.2	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
3. Supporting 4P Arrangements																												
Preparation of Standard 4P Contracting Templates/b	Lumpsum	1	-	-	-	-	1	5,000	5.1	-	-	-	-	-	5.1	-	5.1	-	5.1	0.0	0.0	0.0	SC22	NAT_TA_EA	NAT_TA_DA	IFAD (80%); IFAD11.L (20%)		
4P Trade Fairs/c	Session	2	2	2	2	2	8	2,500	5.1	5.3	5.6	5.8	-	-	21.8	5.2	16.6	-	21.8	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Information Sessions/d	Session	5	5	5	5	-	20	1,000	5.1	5.3	5.6	5.8	-	-	21.8	5.2	16.6	-	21.8	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
4. Business Plan Preparation																												
SMEs	Plan	-	6	6	9	9	30	1,000	-	6.5	6.8	10.7	11.2	-	35.1	-	35.1	-	35.1	0.0	0.0	0.0	SC22	GS_EA	GS_DA	IFAD (80%); IFAD11.L (20%)		
Farmers' Organizations (FOs)	Plan	-	35	35	50	50	170	1,000	-	37.7	39.6	59.3	62.3	-	198.9	-	198.9	-	198.9	0.0	0.0	0.0	SC22	GS_EA	GS_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
5. Engagement of the Financial Sector																												
Roundtables on Financing Agriculture	Session	1	1	1	1	1	6	2,500	2.6	2.7	2.8	2.9	3.0	3.1	17.1	4.0	13.1	-	17.1	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Training for Credit Officers	Lumpsum	1	-	-	-	-	3	5,000	5.1	-	5.6	-	6.0	-	16.7	3.9	12.8	-	16.7	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Contribution to Co-Financing FSPs Staff	Lumpsum	1	1	1	1	1	6	10,000	10.3	10.8	11.3	11.9	12.5	13.1	69.7	-	69.7	-	69.7	0.0	0.0	0.0	SC22	GS_EA	GS_DA	IFAD (80%); IFAD11.L (20%)		
Engagement with Equipment Providers (leasing option MoUs) /e	Lumpsum	1	-	-	-	-	3	1,000	1.0	-	1.1	-	1.2	-	3.3	0.8	2.6	-	3.3	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
B. Access to Finance (4P matching grant window)																												
1. Business Plan Review and Approval																												
Review Committee Meeting	Session	-	1	1	1	1	4	800	-	0.9	0.9	0.9	1.0	-	3.6	0.8	2.8	-	3.6	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Allowance for Participation of Applicants	Applicant	-	24	24	34	38	120	50	-	1.3	1.3	2.0	2.3	-	6.9	1.6	5.3	-	6.9	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
2. MG Financing																												
SMEs	business	-	4	4	4	4	16	200,000	-	800.0	800.0	800.0	800.0	-	3,200.0	-	3,200.0	-	3,200.0	0.0	0.0	0.0	SC22	GS_EA	GS_DA	IFAD (5%); IFAD11.L (5%); BEN (80%); FINGAP (10%)		
Green SMEs	business	-	4	4	4	2	4	250,000	-	-	-	500.0	500.0	-	1,000.0	-	1,000.0	-	1,000.0	0.0	0.0	0.0	SC22	GS_EA	GS_DA	BEN (80%); GEF (20%)		
Farmers' Organizations (FOs)	business	-	10	10	20	20	60	50,000	-	800.0	800.0	1,000.0	1,000.0	-	3,000.0	-	3,000.0	-	3,000.0	0.0	0.0	0.0	SC22	GS_EA	GS_DA	IFAD (20%); IFAD11.L (20%); BEN (20%); FINGAP (40%)		
Subtotal																												
C. Post-investment monitoring and business support																												
1. Access to Specialized Business Development Needs																												
Specialized Trainings	Session	-	-	5	5	5	5	5,000	-	-	27.8	28.9	30.2	31.5	118.4	27.1	91.3	-	118.4	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Support to certification	Lumpsum	-	-	1	1	1	4	10,000	-	-	10.5	10.7	10.9	11.2	43.3	43.3	-	-	43.3	0.0	100.0	0.0	SC22	INT_TA_EA	INT_TA_DA	IFAD (80%); IFAD11.L (20%)		
Support to Participation in Sub-regional Fairs	Person	-	-	3	3	3	12	5,000	-	-	16.7	17.4	18.1	18.9	71.0	16.2	54.8	-	71.0	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Support to Participation in International Fairs	Person	-	-	1	1	1	4	10,000	-	-	11.1	11.6	12.1	12.6	47.4	10.8	36.5	-	47.4	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
2. Continuous 4P Engagement																												
4P Roundtables	Session	-	4	4	4	4	20	2,500	-	10.6	11.1	11.6	12.1	12.6	58.0	13.4	44.6	-	58.0	0.0	25.0	0.0	SC22	TW_EA	TW_DA	IFAD (80%); IFAD11.L (20%)		
Revising 4P Contractual Arrangements	Lumpsum	-	-	1	-	-	2	5,000	-	-	5.7	-	-	6.5	12.2	-	12.2	-	12.2	0.0	0.0	0.0	SC22	NAT_TA_EA	NAT_TA_DA	IFAD (80%); IFAD11.L (20%)		
Ad hoc Advisory to 4P Producers	Lumpsum	-	1	1	1	1	5	15,000	-	16.1	17.0	17.8	18.7	19.6	89.2	-	89.2	-	89.2	0.0	0.0	0.0	SC22	NAT_TA_EA	NAT_TA_DA	IFAD (80%); IFAD11.L (20%)		
Subtotal																												
3. Innovative Financing																												
Diaspora Investment/Diaspora Investment Survey	Lumpsum	1	-	-	-	-	2	50,000	51.1	-	-	-	-	63.0	114.1	26.6	87.5	-	114.1	0.0	25.0	0.0	SC22	STUD_EA	STUD_DA	FINGAP (100%)		
Diaspora Investment/Webpage on Investment Opportunities in AVC /f	Lumpsum	-	1	1	1	1	5	5,000	-	5.3	5.6	5.8	6.0	6.3	29.0	6.7	22.3	-	29.0	0.0	25.0	0.0	SC22	STUD_EA	STUD_DA	FINGAP (100%)		
Diaspora Investment/Crowdfunding Platform /TA/g	Lumpsum	-	-	1	1	-	2	20,000	-	-	22.6	23.7	-	-	46.3	-	46.3	-	46.3	0.0	0.0	0.0	SC22	GS_EA	GS_DA	FINGAP (100%)		
Diaspora Investment/Crowdfunding Platform Awareness Raising Campaign and Marketing /h	Lumpsum	-	-	-	1	1	3	20,000	-	-	23.7	24.9	26.2	27.4	74.8	-	74.8	-	74.8	0.0	0.0	0.0	SC22	GS_EA	GS_DA	FINGAP (100%)		
Subtotal																												
Total																												

/a for 3 GCCI staff directly involved in the 4P business plan preparation
/b including consultations
/c at national level
/d at regional level
/e identification, consultation and preparation of MoUs
/f Updated yearly
/g Updated yearly
/h Updated yearly

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 4: Economic and Financial Analysis

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 4: Economic and Financial Analysis

1. This annex presents the EFA of the proposed IFAD-funded Resilience of Organizations for Transformative Smallholder Agriculture (ROOTS) project in The Gambia. The evaluation is built on the Cost-Benefit Analysis (CBA) applied to a range of agricultural production models (irrigated and rain-fed rice, irrigated vegetable gardens, poultry) and income-generating activities (youth-led agricultural service provision, agri-SMEs and cooperatives) and it incorporates the estimated benefits resulting from the GHG accounting, using the EX-ACT software. Part I of this annex introduces the identification of benefit streams, followed by Part II which describes the methodology and assumptions used for the CBA analysis, Part III summarizes the financial results of the main models. The GHG accounting is presented in Part IV, and finally Part V summarizes the results of the economic analysis, including sensitivity analysis to explore how the results might change under different scenarios.
2. The financial analysis shows profitable investments with an Economic Internal Rate of 16.3 percent and generating a net present value (at 6 percent discount rate) of US\$37.1 million, including the environmental benefits (on a budget of US\$80 million). The results are robust under various scenarios of implementation delays, reduced benefits and adoption. The economic analysis takes into account all aggregate benefits of the production activities, 4Ps and environmental co-benefits. The sensitivity analysis shows robust results in all scenarios using different risk levels.

I. Identification of benefits

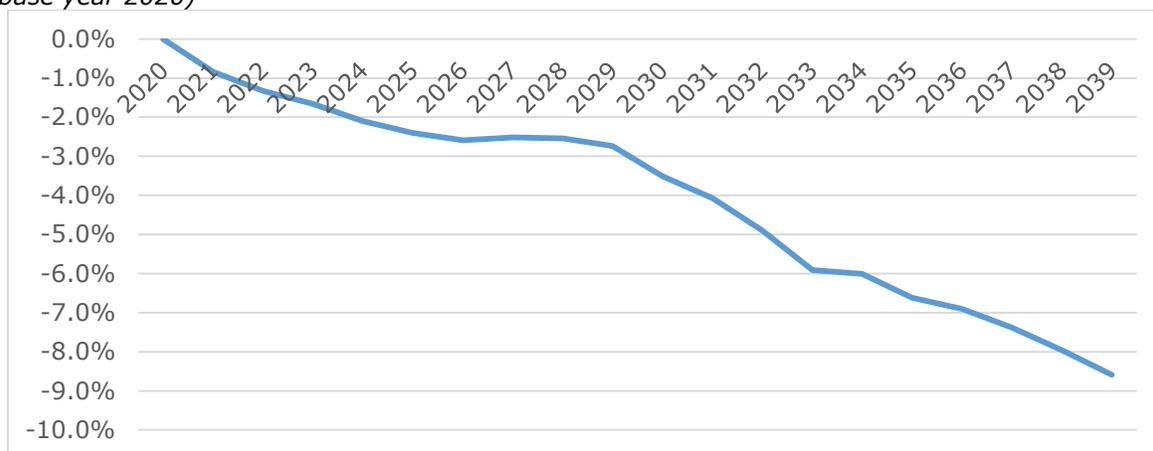
3. The identification of benefits is based on the analysis of the project's main intervention areas and the main cost building blocks. As the first component, focused on agricultural productivity and adaptation to climate change, accounts for two-thirds of the overall budget, the present analysis is centered on the benefits arising from the main production-related activities. In particular, the project is expected to generate additional improved production and incomes for beneficiaries through its mix of land of land development and support to agricultural input provision tailored to irrigated and rain fed rice and upgraded and new vegetable gardens. In addition, poultry production (broilers and layers) will be integrated into some of the new market-oriented vegetable gardens. The first component will also generate income-generation benefits to the youth, which will be supported to engage in agri-businesses.
4. The second component, designed to promote access to markets, will generate two streams of benefits: first, its main intervention areas, coupled with the support to SMEs and cooperatives, will generate a pull effect for the production activities. Effects are expected to include a reduction of post-harvest losses, in particular for vegetables, gradual price increases (through better FO organization and linkages with buyers) as well as value addition. Second, the project will support based on demand 4P-engaged SMEs and cooperatives/FOs in 4Ps, which will generate additional benefits as they develop and grow.
5. The project will generate net positive environmental benefits through its reforestation activities (mangroves and forests) and improved cropping practices (including better water management, intercropping, soil fertility management). ROOTS will also impact other developmental outcomes, unquantifiable at this stage, but which include better nutrition and human health, improved policy dialogue and enabling environment for

agriculture and rural development, lower food imports, better value chain integration, value addition and equity.

II. Methodology and assumptions

6. This analysis follows the standard methodology recommended for evaluating agriculture and rural development investment operations, as described in Gittinger (1982) and Belli et al. (2001), and is aligned to the IFAD guidelines for economic and financial analysis. The financial analysis was conducted to assess the profitability of the proposed project activities, modelled from the perspective of the target beneficiaries, and compared with the without-project situation (which reflects the current situation and has been considered static for the purpose of the analysis). Crop budgets have been prepared for the different rice production systems and for each season, with computed costs and benefits experienced by the beneficiaries, using market prices (full list in the Excel file). A total of 13 production models have been prepared: eight rice crop budgets (non-SRI irrigated tidal rice: wet season cultivation in rehabilitated and new perimeters, dry season cultivation in rehabilitated perimeters, dry season cultivation in new perimeters; same models for SRI irrigated tidal rice; rain fed tidal zone rice; rain fed lowland rice), three mixed vegetable garden crop budgets (wet season cultivation in upgraded gardens; dry and wet season cultivation in new gardens) and two models for poultry (broiler and layer). The economic analysis followed a similar approach, but using economic prices and aggregating the results at the level of the project and from the society viewpoint. The economic analysis uses the incremental benefits, adoption rates and expected total number of beneficiaries (aligned to the logical framework), adding to that the environmental co-benefits arising from reduced GHG emissions and subtracting the total project economic costs to determine the overall economic viability of the project. The discount rates used are in line with the recommended guidelines, the practice of recent project and in-country discussions: 8 percent for the financial analysis and 6 percent for the economic analysis.
7. Given The Gambia's climate change vulnerability and the increasing use of climate-related tool in EFAs, the present analysis has used the newly developed IFAD Climate Adaption in Rural Development (CARD) tool, in order to include the estimate of climate-induced yield variability. Given the project's target value chains and the tool's current scope, only rice production has been considered, using the data for irrigated production, under the pessimistic scenario, for the analysis period 2020-2039. As shown in figure 1 below, the climate-induced yield decrease for irrigated rice is expected to reach about 9 percent by the end of the analysis period, when compared with the base year.

Figure 1 Climate-induced yield variability for irrigated rice in The Gambia (percentage change relative to base year 2020)



Source: IFAD Climate Adaptation for Rural Development (CARD) Tool

8. *Key assumptions for rice models.* As detailed in table 1 below, the analysis has identified four rice production systems and modelled their *without project* (WOP) and *with project* (WP) parameters: non-SRI irrigated tidal rice (2-season cultivation in rehabilitated and new perimeters), SRI irrigated tidal rice (same cultivation patterns), rain fed tidal zone rice (wet season cultivation with better water retention due to dykes), and rain fed lowland rice (wet season cultivation with better water retention due to dykes). The proposed yield increases are significant, yet they are realistic based on the fact that project will shift production from rain fed to irrigated, water managed systems and on the field observations during the design mission. In addition, the project will promote the adoption of SRI practices in the irrigated perimeters and the analysis has assumed that 20 percent of the beneficiaries will adopt it gradually over a normal-distribution 6-year period. It is worth noting that the yield targets below are not adjusted for climate variability, which has been done directly in each model. Overall, all the rice models have been modelled with a three-year learning curve, to recognize that the productivity gains will be gradual despite the infrastructure investments and input provision.

Table 1 Key assumptions and parameters for rice production models

Rice models: Key parameters		Target Yields (kg/ha)			Target Yields (kg/ha)		
		WOP Situation	WOP Yield (wet)	WOP Yield (dry)	WP Situation	WP Yield (wet)	WP Yield (dry)
Irrigated tidal rice	Rehabilitated perimeters	Rain fed, traditional tidal production (local seeds, no/limited fertilizer application)	1,500	1,600	2-season cultivation, with improved water control, better agronomical practices and use of improved seeds and fertilizer	3,200	3,600
<i>Non-SRI (80%)</i>	New perimeters		1,500	700		3,200	3,600
Irrigated tidal rice	Rehabilitated perimeters	As above	1,500	1,600	As above, but with SRI practices (differentiated water management, additional labour, etc.)	6,000	6,000
<i>SRI (20%)</i>	New perimeters		1,500	700		6,000	6,000
Rain fed tidal zone rice	Existing sites	Rain fed, wet season traditional production (local seeds, no/limited fertilizer application)	600	N/A	Wet season cultivation with better water retention due to dykes, better agronomical practices, use of improved seed and fertilizer	1,800	N/A
Rain fed lowland rice	Existing sites	Rain fed, wet season traditional production (local seeds, no/limited fertilizer application)	700	N/A	Wet season cultivation with better water retention due to dykes, better agronomical practices, use of improved seed and fertilizer	1,800	N/A

9. *Key assumptions for vegetable gardens.* Garden users cultivate a wide range of vegetables, based on individual consumption preferences and market demand. For the purpose of this analysis, the four of the most widely cultivate vegetables have been

selected: tomato, onion, cabbage and chili pepper. For the upgraded gardens, which are cultivated only in the dry season given labor constraints, it is assumed that the project intervention will have two impacts: one is to increase yields, while reducing post-harvest losses, and the second to double the land utilization from the current low average level of 30 percent to 60 percent. For the new, market-oriented gardens, it is planned to design them with land utilization rates of 80 percent, drip irrigation throughout and to have the beneficiaries participate in FFS, thus resulting in higher productivity levels. The WOP situation for the new gardens has been considered a partial valuation of the used labor.

10. *Key assumptions for poultry activities.* Based on the lessons learned from other projects and expected demand from beneficiaries, the project will include poultry activities for some of the new vegetable gardens. To estimate these additional benefits, layer and broiler models have been prepared based on data collected during the design mission and the standard parameters for these poultry activities. A 1000-bird broiler unit using day-old chicks (DOC) has been considered, with seven-week cycles and three to four week rest period, resulting in five cycles per year. Mortality has been assumed at 5 percent and gradual uptake over three years has been modelled. Similarly, a 1000-bird layer unit, also using DOCs and mortality 10 percent, has been considered, with an average laying per production cycle of 78 percent and gradual uptake in the first three years.
11. *Key assumptions for matching grant financed activities.* During the design mission, there was insufficient information available to model in detail the activities that are expected to be financed by two of the three matching grant windows. Yet, indicative returns of investment could be approximated on two grounds. First, given the proposed mechanism for business plan formulation and approval, the focus of the matching grant will be on financing viable businesses. In particular, the business plan to be submitted will be required to include a cash flow analysis and profitability indicators (IRR), together with a solid market assessment. Second, a brief literature review¹ of profitability analysis of small agribusinesses in the sub-region indicate that rates of return between 15-30 percent are to be expected, in strong correlation with the business size. For these reasons, the present analysis has retained the following, rather conservative, IRRs as indicative in the economic analysis: 15 percent for youth-led businesses, 20 percent for cooperatives and 25 percent for SMEs. Depending on the matching grant ceiling for each of these businesses, a 10-year cash flow has been estimated and included in the overall economic aggregation.
12. *Financial and economic prices.* Market prices for the financial analysis were collected on the ground during the formulation mission, and economic prices were estimated using conversion factors designed to reflect prevailing taxes and subsidies. The conversion factors were estimated as follows: 1.11 for rice, 0.95 for imported inputs (like fertilizer and pesticides), and 0.8 for labor given the current market conditions, while for the rest of the inputs and outputs it has been considered that the economic prices were in line with the market prices. It is important to mention that accurate information on the use of non-family labor (paid labor) in the total labor requirements was not readily available: the analysis estimated that 80 percent of the labor needs for improved rice production

¹ World Bank (2016) *Financing Agribusiness in Sub-Saharan Africa: Opportunities, Challenges, and Investment Models*; AGRA (2017) *Africa Agriculture Status Report: The Business of Smallholder Agriculture in Sub-Saharan Africa*; AgriProFocus, ICCO Cooperation and Rabobank Foundation (2018) *Critical Capital for African Agri-Food SMEs*; Dalberg (2018) *The Economics of Agri-SME Lending in East Africa*; FAO (2010) *Private sector agribusiness investment in sub-Saharan Africa*.

will be met by family members (with a day of work valued at 80 GMD), while the remaining 20 percent is contracted outside of the family at a price of 100 GMD. In the vegetable gardens, it has been hypothesized that only family labor will be employed.

III. Financial results

13. All of the models assessed as part of this analysis appear viable, generating significant amounts of additional income and attractive returns on the investment (see Table 2 below).

Table 2 Summary results of the financial analysis

Financial Analysis: Summary results		Unit	Additional benefits/year		FIRR	NPV @ 8% (10-year)	
			(GMD)	(USD)	(percentage)	(GMD)	(USD)
Irrigated tidal rice	Rehabilitated perimeters	ha	42,238	845	N/A	255,386	5,108
<i>Non-SRI (80%)</i>	New perimeters	ha	47,948	959	N/A	292,573	5,851
Irrigated tidal rice	Rehabilitated perimeters	ha	105,345	2,107	N/A	656,120	13,122
<i>SRI (20%)</i>	New perimeters	ha	111,055	2,221	N/A	694,434	13,889
Rain fed tidal zone rice	Existing sites	ha	11,723	234	N/A	69,892	1,398
Rain fed lowland rice	Existing sites	ha	12,093	242	N/A	77,016	1,540
Upgraded vegetable garden	Existing sites	unit	525,016	10,500	38%	1,764,860	35,297
New vegetable garden	New sites	unit	1,290,758	25,815	22%	2,664,653	53,293
Poultry - broiler	New sites	unit	409,590	8,192	N/A	2,328,352	46,567
Poultry - layer	New sites	unit	481,430	9,629	N/A	2,655,853	53,117
Youth-led agribusiness*	New	unit	75,000	1,500	15%	103,171	2,063
Coop agribusiness*	Existing	unit	600,000	12,000	20%	1,215,692	24,314
SME agribusiness*	New/existing	unit	3,000,000	60,000	25%	7,352,085	147,042

* Conservative estimates

IV. Greenhouse gas (GHG) accounting

14. The environmental externalities of the project were estimated using the EX-ACT tool, developed by FAO to provide estimations of the impact of AFOLU (agriculture, forestry and other land use) projects and policies on the carbon balance. The carbon balance is defined as the net balance across all GHGs expressed in CO₂ equivalents (CO₂e) that will be emitted or sequestered due to project implementation (WP), as compared to a business-as-usual scenario (WOP). EX-ACT is a land-based accounting system, estimating CO₂e stock changes (i.e. emissions or sinks of CO₂) expressed in equivalent tons of CO₂ per hectare and year. The tool was designed using mostly data from the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (NGGI-IPCC, 2006), which furnishes EX-ACT with recognized default values for emission factors and carbon values in soils and biomass (the so-called "Tier 1 level" of precision).

15. For ROOTS, the GHG accounting calculations are based on characteristics in the predominant Agro-Ecological Zones (AEZ) in The Gambia (moist tropical climatic

conditions with HAC2 soils) and the land use and crop management practices for WP and WOP situations. The changes³ expected to result from the project were included in the tool's different modules (in full alignment with the EFA assumptions and budget provisions) and include increased rice cultivation (irrigated and rain fed), land use changes, and increased use of chemical inputs, which are offset through mangrove replanting and reforestation activities. Overall, the carbon balance results are positive, with ROOTS's activities leading to a total reduction in CO₂ emissions of 136,475 tons over a period of 20 years starting from project implementation. Per year, the mitigation potential is roughly 6,824 tons of CO₂-e.

16. Assigning an economic value to this mitigation potential is a complex task. According to the World Bank Guidance Note on the Social Value of Carbon (2014), the value of carbon can be derived from three different measures: (i) the social cost of carbon; (ii) the marginal abatement costs; and (iii) the carbon market prices. The social cost of carbon attempts to capture the marginal global damage (cost) of an additional unit of CO₂e emitted. The recent World Bank Guidance Note on Shadow Price of Carbon in Economic Analysis (September 2017) recommends "projects' economic analysis use a low and high estimate of the carbon price starting at USD40 and 80, respectively, in 2020 and increasing to USD50 and 100 by 2030". Following these World Bank guidelines, this analysis has used the yearly average between these two scenarios in the valuation of the environmental benefits. Overall, the environmental externalities amount to 6% of the total project benefits.

V. Economic results

17. The overall benefits of the project were estimated using the economic results of the models and of the carbon balance, against the economic project costs and including phasing rates aligned with the Costab and the logframe (see Table 3 below). The analysis, developed over 20 years, assumed a full adoption rate, given that: (i) learning curves have been included in each model; (ii) several project activities are fully demand driven and logical framework targets represent the minimal results (e.g. targets for matching grant windows are based on the maximum investment size, yet in practice lower values will be financed, resulting in a higher number of beneficiaries); and (iii) the NEMA experience indicates high adoption rates for production activities. In addition, to model the pull effect of the inclusive commercial partnerships, markets and rural access roads supported by the second component, an increase factor of five percent has been applied to SRI rice (considered the prime avenue for surplus and increased commercialization) and of 10 percent for the new vegetable gardens. These adjustments have been made in order to reflect the project's logic of increased value chain integration, better bargaining power through grouped sales and ultimately higher prices for producers. Lastly, the project financial costs were converted into economic costs in Costab, by removing the effects of inflation and transfer payments (i.e. taxes and subsidies). In addition, costs already included in the models were removed from Costab to avoid double-counting.

² High activity clay

³ PSU/ IFAD/ International TA air/car travels were not accounted.

Table 3. Beneficiary household phasing into the economic analysis

	Benef. HH	1	2	3	4	5	6
Rice producers	17,700	0	3,570	6,600	7,410	120	0
Irrigated tidal rice non-SRI & SRI	12,300	0	2,700	4,500	5,100	0	0
Rain fed tidal zone rice	4,800	0	810	1,890	2,100	0	0
Rain fed lowland rice	600	0	60	210	210	120	0
Vegetable producers	13,400	0	3,900	5,400	4,100	0	0
Upgraded gardens	10,400	0	3,900	3,900	2,600	0	0
New gardens	3,000	0	0	1,500	1,500	0	0
Youth-led agribusinesses	240	0	60	60	60	60	0
Coop agribusiness/FQ	6,000	0	1,000	1,000	2,000	2,000	0
SME agribusiness	1,000	0	200	200	300	300	0

18. Under all these parameters, ROOTS is a profitable project, with an EIRR of 16.3 percent and generating a new present value (NPV at six percent) of the net additional benefits of USD 37.1 million (GMD 1.8 billion), including the environmental benefits (on a budget of USD 80 million). The results are conservative, given the difficulty of quantifying ex-ante the project's impact on nutrition and health, rural-urban migration and emigration as well as import substitution for rice and other agricultural products. It has also been estimated that under the current analysis' hypotheses (particular in terms of SRI adoption and yield achievement), at the full realization of benefits, the yearly additional production of rice due to the project could reach up to 30,000 tons, or about 24 percent of the 2013-2017 average of yearly rice imports.
19. The sensitivity analysis shows that the baseline results are robust under most scenarios, as summarized in table 4. The robustness of these results was explored by testing the effects of changes in several critical parameters: (i) reduced project benefits; (ii) increased project costs; (iii) delayed project benefits; (iv) decreased output prices; (v) increased input prices; and (vi) reduced adoption rate. Even in the most unlikely scenarios of a four-year delay, or a decrease in benefits by 30% or an increase in costs by 50 percent, the project remains profitable. The analysis has also included rice-specific scenarios, which further demonstrate the robustness of the results.

Table 4 Summary of the sensitivity analysis

Scenarios		EIRR	NPV (6.0%)	
			GMD billion	USD million
Base scenario		16.3%	1.8	37.1
Costs +	10%	14.3%	1.6	32.3
Costs +	20%	12.7%	1.3	27.6
Costs +	50%	8.7%	0.6	13.3
Benefits -	10%	14.1%	1.4	28.6
Benefits -	20%	11.9%	1.0	20.2
Benefits -	30%	8.0%	0.3	6.9
Benefits delayed by 1 year		13.4%	1.4	29.8
Benefits delayed by 2 year		11.3%	1.1	23.0
Benefits delayed by 3 year		9.6%	0.8	16.6
Benefits delayed by 4 year		8.2%	0.5	10.5
Adoption rate -	10%	14.7%	1.5	30.4

Adoption rate -	20%	13.0%	1.1	23.8
Production prices -	10%	13.9%	1.3	27.9
Production prices -	20%	11.5%	0.9	18.7
Input prices +	10%	16.1%	1.7	36.2
Input prices +	20%	15.9%	1.7	35.4
Rice price -	10%	14.5%	1.4	29.9
Rice price -	20%	12.6%	1.1	22.8
Rice price -	30%	10.6%	0.8	15.6
Rice yield -	10%	13.8%	1.3	27.3
Rice yield -	20%	11.2%	0.8	17.6
Rice yield -	30%	8.4%	0.4	7.9

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

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

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

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

I. Introduction

1. Climate change, environmental degradation and social exclusion are key challenges for the Gambia agricultural sector development and to achieve poverty reduction, food security, nutrition and jobs creation and income generation particularly for youth and women. Risk-informed public policy and investment in the agriculture in the context of climate change to design a robust country cooperation framework between IFAD and the Gambia requires scientific evidence, environmental, and climate risk profiles and trends, institutional and context analysis for optimum future investment and policy reforms to strengthen resilience.
2. The main focus of the SECAP review note is to identify potential impacts of the project on the environment and the society, to categorise the project following the SECAP procedures and to prepare an environmental and social management plan (ESMP) for its direct and indirect impacts by identifying mitigation measures for the different possible risks.

II. Situational analysis and potential project impacts

1. Socio-economic assessment

3. The Republic of The Gambia is one of the smallest countries in West Africa surrounded by the Republic of Senegal on the northern, eastern and southern sides, and bounded on the Atlantic Ocean. The Gambia is less than 48.2 km wide at its widest point, with a total area of 11,295 km² and a generally flat terrain, with the highest point only 53m above sea level.
4. The Gambia has an estimated population of 1.88 million of which nearly half is rural and has greater incidence of poverty (2013 census). The Gambia is one of the most densely populated countries in Sub-Saharan Africa (population density in 2013 was 176.1 per km². The population is expected to nearly double in 21 years with a growth rate of 3.1% per year and dominated by youth.

a. Overall poverty situation

5. Notwithstanding a 10 percent reduction of poverty in the last ten years, The Gambia remains among the poorest and unequal countries in the World. The country is classified by the UN as a Least Developed Country (LDC) with a Gross National Income (GNI) per capita of USD 450 in 2017 (UNDP, 2018). The Human Development Index (HDI), valued at 0,460 in 2018, puts The Gambia in the low human development bracket (174 position) and reflects the "multi-dimensional" aspect of poverty, with low literacy and education levels, poor health indicators and weak government infrastructure and services. Sixty two percent of the Gambians live with less than USD 3.1 per day and 48 percent live below the national poverty line of USD 1.25 per day. Poverty is more pronounced in rural than urban areas as 74 percent of Gambians below the national poverty line live in rural areas (World Bank, 2017)⁵⁰.
6. The rural poor are essentially engaged in agricultural production on average land holdings of 2 hectare per household. Poor women headed households are slightly more prevalent than poor male headed households. Farmers remain the poorest socio economic group and represent more than 60% of people living below the poverty line. The contribution of the agricultural

⁵⁰ World Bank. 2017. World Development Indicators. Washington, D.C: World Bank. Available at: <http://data.worldbank.org/>

sector to the creation of wealth and the acceleration of growth remains below the potential of the sector. The low productivity of the agro pastoral sector, exacerbated by the climate crises and frequent natural disasters (drought, flooding, sand storms, and locusts, among others), has made the conditions of the poorest rural households (women and youth) even worse, leaving a large part of the population in situations of chronic vulnerability.

b. Gender

7. The Gambia is a highly patriarchal society with cultural values and roles constraining female participation and leadership in society. According to the 2015 Gender Inequality Index, The Gambia ranked 148th out of 159 countries. Some progress has been achieved in attaining gender equality but much remains to be accomplished. In education, there is gender parity at the preschool, primary, and secondary levels, but inequality remains at the tertiary level and in vocational training. The literacy rate for women is low at 40 per cent compared with 64 per cent for men. According to a Demographic and Health Survey, the percentage of women who reported having experienced gender-based violence was 41 per cent in 2013.
8. While women make up 70 per cent of the agricultural labour force, produce 70 per cent of the output and perform 50 to 70 per cent of the agricultural tasks, they have minimal control over their own land, income and access to credit, and are extremely vulnerable to climate change. They mainly grow vegetables, groundnuts, rice, millet and maize for both household consumption and for sale. Unpaid work which is at the foundation of the Gambia society includes preparing food, collecting fire wood and fetching water; childcare; rearing small animals and poultry; and petty trade. Closing the gender gap in agricultural would increase crop productivity and increase the GDP. The project will support the scaling up of upgraded market-oriented integrated vegetable gardens for women; resilient rice farming for women associations during the dry season and capacity building to enter into win-win commercial partnerships.

c. Youth

9. According to recent United Nations report, 64 per cent of the population is below the age of 25 and 42 per cent below the age of 15. Poverty disproportionately affects youth, with 60 per cent of the poor under the age of 20. Youth, particularly unemployed rural youth, have very low levels of education and vocational training relative to regional comparators and leave school earlier than their urban counterparts. They have very limited access to productive resources (e.g. land and credit) to establish farming enterprises. This accentuates rural to urban migration and creates on-farm labour shortages during planting and harvesting time.
10. In the Gambia, few young people see a future for themselves in agriculture or rural areas. Attracted by modernity and opportunities, rural Gambian millennials from families that are highly dependent on agriculture are migrating from rural areas to cities and abroad at an astounding rate. Rural youth that have migrated to cities are generally unemployed, in poor health, socially excluded and living in inadequate conditions. They are also highly vulnerable to sex tourism and human trafficking or are tempted to join extremist groups in the Sahel. Rural transformation requires making smallholder agriculture sustainable, profitable and attractive to youth. Therefore, the project will be promoting agro-preneurial training and development with the support of the Songhai Centre as an incubator for a new generation of youth and women agripreneurs and farmers in the Gambia. Rural Youth Awards will be supported and used as a tool to attract youth in agriculture.

d. Nutrition

11. High levels of poverty translate into tenuous food security and malnutrition. In the 2018 Global Hunger Index (GHI) established by IFPRI, Gambia ranks 75th out of 119 countries (scoring 22.3) and suffers from a level of hunger that is considered as "serious". The country is also on the verge of a nutrition emergency. As of August 2016, an estimated 551,000 people were food insecure, with 60,726 suffering from extreme food insecurity. Malnutrition is widespread, being most prevalent in the local government areas (LGAs) of Kuntaur, Janjanbureh, Basse and Kerewan (all above 10 per cent). According to the World Bank, 20 per cent of infants are born with low birth weights; some 28 per cent of children under five years are stunted, increasing the risk of impaired cognitive development. More than one third of child deaths are due to undernutrition from increased severity of disease. Anemia affects more than 75 per cent of pregnant women and preschool-aged children and vitamin A deficiency is also widespread. Therefore, the project will introduce systematically nutrient and vitamin rich crops, such as the orange sweet potato to boost nutrition impacts, and integrate poultry farming (eggs and broilers) within gardens to diversify income and household diet sources and, where appropriate, establish partnerships with the World Food Programme (WFP) School Feeding Program and nutrition capacity building.

2. Environment and climate context, trends and implications

a. Environmental assessment

Biodiversity, agro-ecological zones and natural resources

12. The Gambia is endowed with rich and varied agro-ecological systems despite its small size (closed and open woodlands, trees and shrub savannah, wetland ecosystems, grassland savannah, marine and coastal ecosystems and agricultural ecosystems.) The River Gambia, which is over 1,130 km long, originates in the Fouta Djallon highlands in Guinea and flows the length of the country before emptying into the Atlantic Ocean and define the production systems.

13. The three major biological regions of the country are : i) The marine and coastal zone along the western coast, ii) the area along the River Gambia and related freshwater and estuarine ecosystems, and iii) the terrestrial ecosystems behind the coastline and to the north and south of the river – harbour biodiversity that is globally significant, as well as biodiversity and natural resources of great significance at national and local levels. Wetland ecosystems cover almost 20% of the total land area, consisting primarily mangrove forests (64%), uncultivated swamps (7.8%) and cultivated swamps (3.2%).

14. The Gambia has designated 3 RAMSAR Sites and is on the verge of designating additional sites. The country's total forest area, including mangroves, is estimated to be 505,300 hectares or 43% of the total landmass of the country⁵¹. At present, no forest areas are classified as protected forest. State forestlands account for 78% of the total forest area; approximately 7% of the total forest area is included in the 66 gazetted forest parks. Community and private forest areas constitute only 17,487 ha, but are expected to increase as more state forestland is brought under these management systems.

15. The Gambia has three primary agro-ecological production zones: **The Sudano-Sahelian Zone or Riverine Zone**: characterised by savannah woodland, covers a great part of the country (492,999 ha); 76% of this zone is cultivated and it accounts for more than 60% of national

⁵¹ State of the Environment report (2010)

agricultural production. The main agricultural production in this area is early millet, groundnuts, sorghum, maize, cotton, upland rice and irrigated rice.

16. **The Sahel-Savannah Zone or Semi-Arid Zone** : covers approximately 147,684 ha; only 44% of the area is cultivable and the area only accounts for about 12% of national agricultural production. This zone has relatively low rainfall (below 900 mm) and concentrates on the cultivation of early maturing cereals such as maize, early millet, upland rice and "Findi grass"; the zone also has a fairly large livestock population that puts significant pressure on natural resources.
17. **The Guinea-Savannah Zone or Humid zone**: located along the coastline, has high and moderately reliable rainfall (1000 mm and above), and covers an area of 179,790 ha, of which 66% is cultivable. Major cereals produced in this zone are primarily late varieties such as late millet, sorghum, and upland rice; the zone also has a large cattle population and extensive use of animal traction in agricultural production.

Key environmental challenges/treats and effects on agricultural development and rural poverty

18. Unsustainable extraction and management of natural resources from forest ecosystems by rural households are increasingly resulting in reduced agricultural production. The Gambia experiences rapid depletion and degradation of the natural resource base as a result of increasing population pressure, salinization, extended periods of shifting cultivation, deforestation, recurrent droughts and increasing climate variability, decreasing fertility of the arable land, and finally migration and out-migration. Agricultural productivity is hindered by reduced water infiltration, high water run-off rates and the drying of inland valleys and river tributaries, which have been observed. Erosion and siltation of the Gambia River have reduced water flow and resulted in increased saltwater intrusion into the marginal lands. Siltation and sedimentation continue to threaten the viability and sustainability of lowland agriculture. These effects combined with periodic floods and epidemics place the country at risk to disasters. Agricultural production systems for crop farming in The Gambia consist of intensive land use characterized by low levels of input. Currently, widespread environmental degradation and unsustainable land-use practices are reducing the generation of ecosystem goods and services (medicines, recreation for tourism), that support both agricultural productivity and rural livelihoods in The Gambia. Common unsustainable land-use practices are overstocking of livestock and reliance on slash-and-burn agricultural techniques that in turn have resulted in a widespread depletion of soil fertility, thereby reducing agricultural productivity.
19. Shifting cultivation is still widely practiced in the country, although fallow periods have been considerably reduced as land becomes scarce in most farming communities. The compounding effect of high population pressure and the scarcity of land has forced farmers to intensively cultivate small areas of land year after year, which exhausts the soil nutrients and ultimately leads to declines in crop yields. Furthermore, land placed under continuous cultivation has high levels of erosion that produce sedimentation of downstream rice fields and aquatic and marine habitats. Soil erosion and siltation from agriculture (and livestock grazing) are important processes in habitat loss and fragmentation in The Gambia. Annual soil erosion is estimated at 12.5 tonnes per hectare per year for frequently cultivated soils having a slope of 2% or more⁵². These processes have diminished soil productivity, and the eroded materials are deposited in the lowlands of the river basin, causing sedimentation in the rice growing areas and adverse impacts on aquatic life. In addition, the country faces other sources of

⁵² Ministry of Agriculture (2010) *Gambia National Agricultural Investment Plan (GNAIP)*. Government of The Gambia

degradation, such as over-extraction of woodland trees, uncontrolled bushfires, and production of charcoal results in a considerable loss of vegetation cover which leads to widespread soil erosion and sediment transfer into the Gambia River. This in turn affects the agricultural productivity; forest development; and livestock production which impact on rural livelihoods.

20. Ecosystem (forest, mangrove forests, forests) degradation and conversion: Habitat conversion is one of the major factors of biodiversity loss in The Gambia. Rising demand for food and other agricultural products, among others, has resulted in clearing of natural habitats to make space for agricultural land; and economic, demographic and social pressures are likely to put further pressure on habitats. Wetland ecosystems are increasingly being used for rice cultivation and for dry season vegetable gardening as well as grazing for livestock. Harvesting of mangroves for fuel wood and other domestic uses has greatly reduced the area of mangrove forests. Demand for timber and non-timber products from protected areas is high, and many areas within and adjacent to protected areas are being degraded. Between 1946 and 1998, woodland cover in the country decreased from 81% to 42%; during this period, closed woodland disappeared almost entirely and tree density in open woodlands decreased, while the area of tree and shrub savannah increased as a result of the extensive conversion and degradation of the other forest classes. According to the 2010 National Forest Assessment (NFA)⁵³, forest cover decreased from 505,300 ha (44% of the country's surface area) in 1981/82 to 423,000 ha (37%) by 2009/2010. During this period, mangrove forests alone declined from 67,000 ha to 35,700 ha. Under business-as-usual rates of deforestation (estimated at 5-7%)⁵⁴, more than half of the remaining forest/woodland cover in The Gambia will be lost in the next ten years.
21. Overgrazing: The Gambia has a large livestock population with high stocking density. Livestock are reared in an extensive free-range system in open grasslands / rangelands. Due to the high stocking density and the incidence of annual bush fires that consume most of the feed resources, there is consistent scarcity of livestock feed during the dry months of the year. The convergence and concentration of livestock in and around isolated pockets of remaining grazing areas leads to range degradation, loss of topsoil, and the proliferation of unpalatable species.
22. Bush burning: During the long dry season, bush fires are a common feature of the rural landscape; according to some estimates at least 80% of the standing biomass is consumed by fire in a given year (Forster, 1983), which constitutes a significant threat to habitat and species diversity in the country. The Gambia's inability to regulate and control wild forest fires is influenced by out-of-date policies that lack clear-cut measures and enforcement mechanisms. There is an urgent need for a new policy that recognizes and adapts current thinking and practices related to early-dryseason controlled burning, which has proven successful in Niokolo Koba National Park, and in the Kiang West National Park in both Senegal and the Gambia.
23. Increasing pressure on coastal and marine areas: A large proportion of the country's population resides in coastal areas and depends upon coastal resources for their livelihoods, but large-scale migration into coastal zones as a result of land degradation and disrupted rainfall patterns in the hinterland is exerting tremendous pressure on coastal and marine Infrastructures (road, dams, bridges, manufacturing and processing units): Construction and other infrastructure development such as the have caused major disruptions in the processes and functions of key ecosystems such as wetlands. Although positive outcomes will be generated by the trans Gambian corridor of Farefeni which will be opened in January 2019, it is foreseen social and environmental impacts on local ecosystems. The erection of new villages/towns along the

⁵³ National Forest Assessment, 2010. Government of The Gambia and FAO

⁵⁴ IUCN and Department of Forests. 2010

corridor may also change the agricultural map between the two countries. The planned hydro dam of Sambangalo in Senegal will increase the power supply including on agriculture but will generate negative impacts on hydroelectric power station at Sambangalo. This dam should provide an artificial base flow, which creates opportunities for irrigation and reduces maximum saline intrusion in the dry season. However, studies have shown if not well managed, saline intrusion in the Gambia River from the dam may affect negatively agricultural production, mangroves and fishing industry.

24. Oil and Gas development sector: massive oil offshore reserves have been discovered in the Gambian seas. The exploration and exploitation may impact the marine ecosystems and biodiversity and reduce the fish stock, pollute mangroves forests and the river and pollution of soils and water for agriculture if not well managed. Specific measures including environmental safeguards, clauses in all contracts to protect existing natural capital base, promote social inclusion must be developed. On the long term, the reduction in ecosystem goods and services is leading to negative effects on rural Gambia’s food supply, health, nutritional status, income streams and socio-economic well-being. Therefore, any actions towards mitigating those impacts must be included in policies, strategies, plans, programmes and investments.

b. Climate trends and impacts

25. The Gambia experiences a Sahelian climate, characterized by a long, dry season (November to May) and a short, wet season (June to October). Average temperatures in Gambia range from 18°C to 30°C during the dry season and 23°C to 33°C during the wet season. In La Niña years, temperatures tend to be cooler than average throughout the year. The long-term mean annual rainfall of 860 mm is largely determined by July, August and September rainfall, where mean monthly rainfall varies between 150 mm (in the northern extremes) and 300 mm (in the southern extremes).

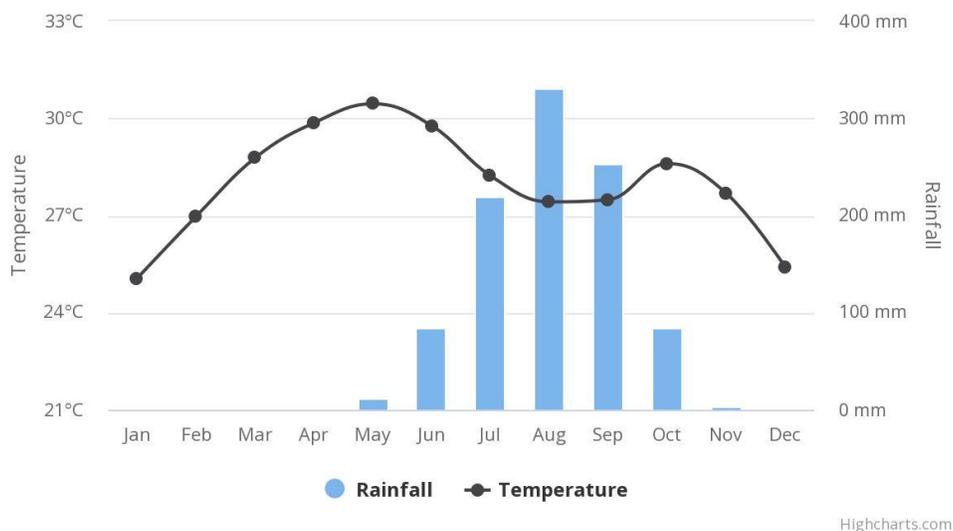


Figure 2: Average Monthly Temperature and Rainfall of Gambia (1991-2016)

26. **Temperature.** In The Gambia, mean annual temperatures have increased by 1.0°C since 1960, an average rate of 0.21°C per decade. The rate of increase has been most rapid in the months of October, November and December, at 0.32°C per decade.

27. The mean annual temperature in The Gambia is projected to increase by between 1.1°C to 3.1°C by the 2060's and by between 1.8°C to 5.0°C by the 2090's. The projected rate of warming is faster in the interior regions of The Gambia than in those areas closer to the coast. All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in current climate.

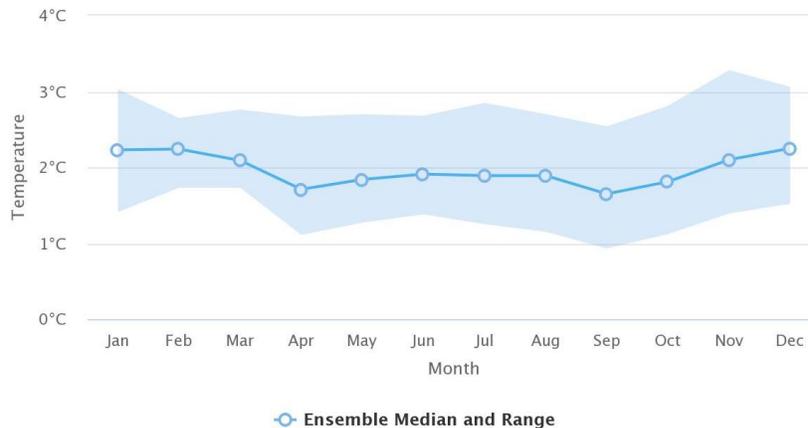


Figure 3: Projected Change in Monthly Temperature for Gambia for 2040-2059

28. **Precipitation.** Linear trends indicate that wet season (July, August and September) rainfall in The Gambia has decreased significantly between 1960 and 2006, at an average rate of 8.8 mm per month per decade. The length of the rainy season has also been decreasing with increasing variability in inter-annual rainfall.

29. Projections of mean annual rainfall averaged over the country from different models in the ensemble project a wide range of increases and decreases in precipitation for the Gambia, but tend towards decreases, particularly in the wet season (July, August and September).

30. Projected annual precipitation changes range from -23 to +18% by the 2090's, with ensemble means between 0 and -3% and with increasing occurrence of heavy rainfall events. Projected July, August and September changes ranges from -53 to +74% by the 2090's, with ensemble means between -7 and -20%. The range of projections from different models in the ensemble includes both increases and decreases in all seasons.

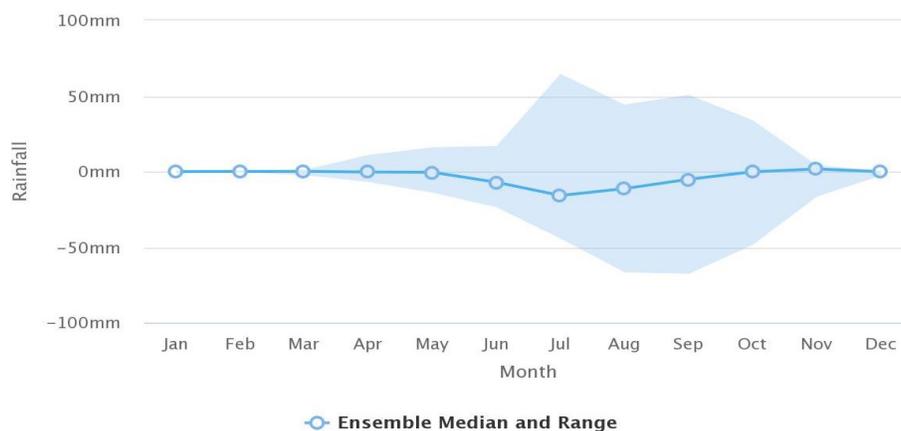


Figure 4: Projected Change in Monthly Rainfall for Gambia for 2040-2059

31. **Vulnerability to climate change.** The Gambia ranks as one of the country's most vulnerable to climate change based on the GAIN index, ranking 146 out of 181 countries, (or 16th most vulnerable). The food security vulnerability to climate change, which is measured in terms of food production, food demand, nutrition and rural population, is 177th out of 186 ranked countries. The indicators for the score include projected change of cereal yields, projected population growth, food import dependency, rural population, agriculture capacity and child malnutrition. (IFAD, 2015b). The most vulnerable areas from a climate change perspective will be the lower-central part of the country where saline water meets freshwater, the balance of which is determined by rainfall conditions and, increasingly, sea level rise. However, other regions are also vulnerable. In the Western part of the country, which is more densely populated, lowland rice and horticulture are vulnerable to saline ground water resources and short periods for low rains and heavy rains that will worsen land degradation in the uplands. In the Eastern part of the country, rainfall variability threatens both droughts and floods, and here too temperature increases will be felt more keenly (IFAD, 2015b).
32. **Agriculture and climate change.** Agricultural production in the Gambia is largely dependent on rain-fed subsistence farming which is inhibited by numerous climate factors including rainfall variability, increased temperatures and sea level rise.
33. For instance in 2011, decline in yield owing to unpredictable rainfall patterns was high at 79% for upland rice, 54% for millet and 67% for groundnuts compared to 2010 records on the same crops⁵⁵. Since 1960, the Gambia has experienced increasingly erratic rainfall patterns, higher intensity storms, intra-seasonal drought and increasing average air temperatures, accompanied by periodic cold spells and heat waves⁵⁶. Available literature points to an increased average temperature between 3 and 4.5° C, bringing with it an increase in potential evapotranspiration by 2075. With respect to projected rainfall, GCM model outcomes vary widely between -59% and +29% of the 1951-1990 average of 850 mm per annum. It is also reported that the low-lying topography of the country coupled with a 1 m rise in sea level could potentially inundate over 8% of the country's land area. This includes over 61% of current mangroves, 33% of swamps, and over 20% of current lowland rice growing areas⁵⁷.

⁵⁵ GoTG. 2009. Agriculture and Natural Resources (ANR) Policy (2009-2015).

⁵⁶ Urquhart, P. 2016. National Climate Change Policy of the Gambia Final Report: Final Draft Policy

⁵⁷ Yaffa, S. 2011. Assessment of the Impacts of Climate Change on Gambian Smallholder Food Crop Production and Livelihood Conditions, ActionAid the Gambia.

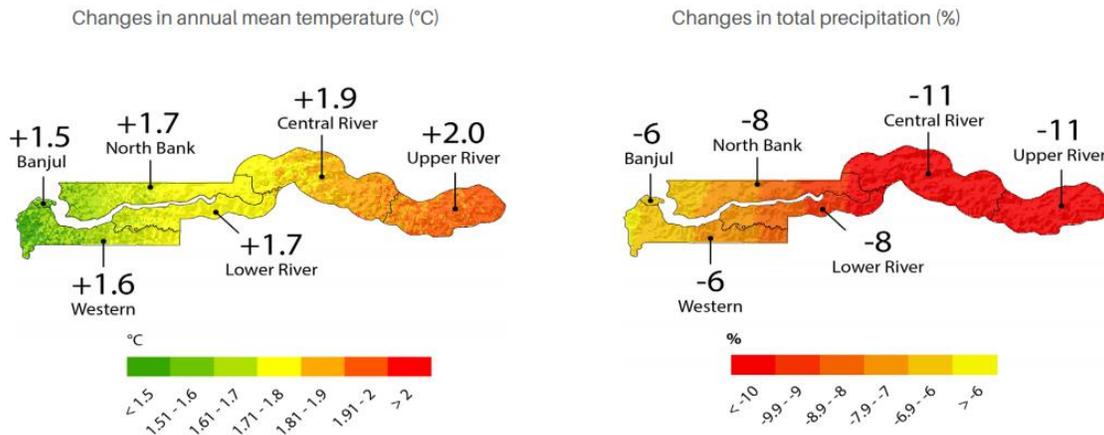


Figure 5: Projected changes in temperature and precipitation in the Gambia by region by 2050

34. **Agricultural greenhouse gas emissions.** Although the Gambia is one of the countries least responsible for climate change, it has ratified the United Nations Framework Convention on Climate Change (UNFCCC) and has committed to engage in the development and implementation of many of the actions of the framework. The Gambia's current total GHG emissions stand at 7.2×10^{-7} Mt Co₂ eq as at 2013. Sectorally, the highest emissions (79%) came from agriculture while the energy sector contributed about 10%. Minimal emissions from waste management (0.5%) and other sources are also reported. With respect to the agriculture sector, about 65% came from the livestock sub-sector where enteric fermentation contributed to about 36% of methane emissions while manure left on pastures constituted about 26% of emissions from methane and nitrous oxide⁵⁸.

c. Climate change adaptation

35. In the Gambia, there are already farming systems practices being undertaken by smallholder farmers that conform to the principles and strategies of sustainable agriculture. The practices can generally be categorized as follows:

- **Soil and nutrient management** – where farmers use compost from manure and crop residues, legumes for natural nitrogen fixation or as green manures planted in intercropping systems as part of a scheme of crop rotation or in agro-forestry systems. Using these methods and practices markedly reduce the need of synthetic fertilizers which, apart from their high costs contribute to GHG emissions.
- **Water harvesting and use:** Improved water harvesting and retention (such as pools, dams, pits, retaining ridges, etc.) and irrigation systems are fundamental for increasing production and addressing the increasing irregularity of rainfall patterns. Common irrigation facilities in the Gambia are pump and tidal systems and boreholes with different distribution facilities such as reservoir tanks and overhead drip systems. Water catchment tanks are also used in some schools to harvest rain water that is used for irrigation in vegetable gardens and orchards. There are also soil and

⁵⁸ GNAIP. 2015. Republic of the Gambia National Agricultural Investment Plan (GNAIP). Banjul, the Gambia.

water conservation structures in the form of dikes, bunds and spillways that facilitate water retention and combat salinity.

- **Pest and disease control:** There is evidence that climate change is altering the distribution, incidence and intensity of animal and plant pests and diseases as well as invasive and alien species. Control measures from the CSA perspective and which are common in the Gambia include traditional and physical approaches. The integrated pest management approach is also widespread following its introduction by the Pest Management Unit of the Ministry of Agriculture.
- **Resilient ecosystems:** Improving ecosystem management and biodiversity can provide a number of ecosystem services, which can lead to more resilient, productive and sustainable systems that may also contribute to reducing or removing greenhouse gases. In the Gambia agroforestry systems such as alley farming, farm border planting as well as the use of energy-efficient equipment such as improved cooking stoves are carried-out in many communities.
- **Genetic resources:** The National Agricultural Research Institute (NARI) of the Gambia continues to release new crop and animal breeds suitable for climate change adaptation. These include early maturing, high yielding and drought resistant crop varieties suitable for the changing climate. Similarly, there are diversified and sustainable livestock husbandry systems that have marked improvements on food security and nutrition for farmers.

III. Institutional analysis

36. Country responses to climate change and environmental degradation are compounded in the following policies and fully aligned on the National Development Plan (2018-2021). These are : The national climate change policy of the Gambia; National Adaptation Plan (NAP) process in the Gambia; National Policies on Climate Change, Agriculture and Natural Resources; The Nationally Determined Contribution; Forestry sub-sector policy 2010-2019; Anti-littering regulations; Hazardous chemicals regulations and Environmental impacts assessment regulations.
37. Other plans include the Gambia Environment Action Plan (GEAP), the National Environmental Management Act (NEMA), the Agriculture and Natural Resources (ANR) policy, the National Biodiversity Strategy and Action Plan (NBSAP), the Fisheries Policy, and the Forestry Policy. In turn, all of these policies fed into the medium-term national development strategy and investment plan known as the Programme for Accelerated Growth and Employment (PAGE) developed in 2012, which aims to improve livelihoods and food security, and reduce the poverty of populations that depend on the Gambia's natural resources (including rangeland, forests, fisheries, and wildlife) through sustainable management and use of these resources.
38. At the institutional level, the mandate of the National Environment Agency (NEA) is largely one of coordination, advice and consultation, including overseeing implementation of the GEAP, as well as overseeing environmental quality and monitoring standards and controlling the importation and use of pesticides and hazardous chemicals. The Ministry of Agriculture and the Ministry of Environment have traditionally had the most direct role in land-use and management, and are responsible for policies, plans and programs that ensure sustainable land management. The National Agricultural Research Institute (NARI) manages an agricultural research system that develops appropriate technologies (i.e. integrated pest management, biological pest control mechanisms, soil fertility amendment strategies etc.) for farmers. The

Department of Parks and Wildlife Management (DPWM) is the government agency responsible for the protection and the management of the nation's wildlife resources, and has jurisdiction over wildlife both within and outside of wildlife protected areas. The Department of Forestry is mandated to manage 30% of the total land area under forest with a view to enhancing environmental protection through minimizing soil degradation and erosion, maintaining river bank stability, protecting wetlands and improving, conserving and preserving biodiversity. Other agencies with responsibilities relevant to the proposed project include the departments of Community Development, Livestock Services, Water Resources, Agricultural Services, Fisheries, and Physical Planning, as well as the National Disaster Management Agency (NDMA) and the Gambia Bureau of Statistics (GBOS). The National Environment Management Council (NEMC) has the overarching role of overseeing environmental governance.

39. **Nationally Determined Contribution.** In its NDC, the Gambia offers to conditionally reduce its greenhouse gas emissions, excluding the land use, land use change and forestry (LULUCF) sector, by 1.4 MtCO₂e in 2025 compared to business-as-usual (BAU). The Gambia is offering to reduce emissions by 0.08 MtCO₂e in 2025 (or 2.4%) below BAU unconditionally; A 44% emissions cut by 2025, compared to business as usual projections, and a 45% cut by 2030. The targets exclude land use and forestry. Two of 12 sectoral mitigation schemes, with associated emissions reduction targets, are unconditional. The rest are conditional on international financial support and technology transfer. Includes section on adaptation. The Gambia's NDC also includes abatement in the LULUCF and agriculture sectors: it plans to unconditionally abate 0.28 MtCO₂e by 2025 and 0.33 MtCO₂e by 2030 through afforestation as well as 0.69 MtCO₂e in 2025 and 0.67 MtCO₂e in 2030 by replacing flooded rice fields by dry upland ones, and by using efficient cook stoves reduce the overuse of forest resources, conditional on international support.
40. Agriculture is a key element in the Gambia's NDC. Adapting the Agriculture System to Climate Change in The Gambia will strengthen diversified and sustainable livelihood strategies for reducing the impacts of climate variability and change in agriculture and livestock sectors of The Gambia. Through the NDC, the Gambia intends to mainstream climate change adaptation priorities into national agriculture and livestock policies, plans and programmes; promote value addition of products to complement and support crop diversification; improve vulnerability and risk assessment tools and agro-climatic monitoring and early warning for food security; promote climate information services to the agriculture sector and dissemination to wider rural communities; diversify livelihoods and sources of income for vulnerable communities; enable sustainable crop intensification by introducing innovative crop improvement and management practices; improve implementation of poultry, small-ruminants and cattle production at the local level; and expand and intensify sustainable livelihoods and soil and water management interventions to improve vegetative cover and to sustain livelihoods of livestock dependent communities.

IV. Environmental and social category

41. In line with IFAD's Social, Environmental and Climate Change Assessment Procedures (SECAP), ROOTS is classified as a **Category B** Programme, implying that ROOTS is likely to cause minimal adverse environmental effects. Key risks to environmental and social management are: poor governance and lack of institutional, technical and organizational capacity, which can be mitigated through capacity building of multiple actors in technical, management and governance aspects, and strengthening of women's and farmers organizations, upgrading of vegetable gardens with equipment's and drip irrigation with solar water, intercropping, systematically introduce other nutrient and vitamin-rich crops, agroforestry, promotion of sustainable land and water management practices, youth training support/youth incubation including on sustainable management of natural resources. ROOTS will support ecosystem

preservation activities such as the rehabilitation of 1,300ha of mangroves and 3,850ha of community forests. To mitigate potential social exclusion and improve income particularly for youth and women, the project will support the creation of solution-oriented platforms for high-level policy dialogue between private operators, FOs and public authorities for inclusion; and access to land and credit.

V. Climate risk category

42. Based on IFAD's climate risk categorization, the climate risk is classified as **'high'**. To address the impact of climate change, the project will be supporting climate resilient infrastructures in the targeted areas to expand arable land and water management productivity and reduce poor people's vulnerability to natural hazards, food insecurity and nutrition, the nature of risks and exposure to climate change. Sustainable of land use and forest ecosystems promoted will contribute to reducing the GHG emissions. Climate resilient infrastructures (land and water development) and upgraded gardens will lead to secure production and reduce the risk of low yields while contributing to expanding the period of production from the 3 months of the rainy season to 6 to 9 months within the dry season. Good climate resilient agricultural practices in rice and horticulture will be promoted to address drought, flooding, salinization, locusts effects and harsh environments (land degradation). Through the capacity building strategy, the project will address the limited knowledge of climate change impacts on smallholder agricultural value chains and landscapes and effective adoption and implementation adaptation interventions. Specific trainings will be provided to women and youth on renewable energy for agriculture and climate smart agriculture. The project will also support the development of new modules on climate resilient agriculture, waste management and renewable energy for the Songhai training Centre.

VI. Further studies needed

43. Based on the climate risk category (high) and in line with the SECAP procedures, a detailed climate analysis is required.

VII. Environmental and Social Monitoring Plan

Parameter	Activity	Monitoring Indicator	Responsibility for monitoring	Monitoring means	Recommended frequency of monitoring
ENVIRONMENTAL MONITORING					
Site specific impacts	Environmental screening and baseline study	Baseline on status of the environmental conditions in selected communities	PCU	ESIA reports Adherence to laid legal and policy requirements	Once, at beginning of project
Environmental baseline	Conduct a baseline assessment to obtain baseline values of key environmental parameters in selected communities	See environmental indicators mentioned from next row	PCU	Field survey	Baseline, once at beginning of project
Land and soil degradation	Monitor quality of soil and other biological conditions	Soil micro-organism count Soil organic matter count	PCU	Field measurement, incl. soil sample analysis	Annual (or after cropping cycle)
Surface and subsurface water quality	Monitor quality of surface and subsurface water at sample sites	Water quality	PCU	Field measurement and Laboratory test	Annual (or after cropping cycle)
Degradation of Forest and wetland	Monitor quality of forest and wetlands	Changes in forest and wetland area	PCU	Remote sensing and field assessment	Baseline, Mid-Term, End-Term
Erosion and gully	Monitor quality of land	Changes in area of bare surfaces	PCU	Remote sensing and field assessment	Baseline, Mid-Term, End-Term
Bush and pipeline fire	Monitor quality of vegetation	Changes in vegetal cover	PCU	Remote sensing and field assessment	Annual
Loss of biodiversity	Monitor quality of biodiversity	Changes in abundance of biodiversity	PCU	Field survey	Annual
Waste proliferation	Monitor quality of land, water and air	Changes in soil, air and water quality	PCU	Field measurement and laboratory test	Annual
Use of	Monitor quality	Changes in	PCU	Laboratory	Annual

agrochemicals	of plant, soil and water	quality of plant, soil and water		test	
Flooding	Monitor quality of land	Extent of land inundation	PCU	Field survey and remote sensing	Quarterly
GHG emissions	Monitor quality of air	Preponderance of GHG in the air	PCU	Field measurement	Annually
Socio-economic conditions	Conduct a combined sustainable livelihood analysis (SLA) / resilience assessment, providing baseline status of key socio-economic conditions in selected communities	Food security, assets, employment, income, production methods and volumes, access to markets and finance, social inclusion, disaster preparedness	PCU	Field survey Field measurement (update)	
Community conflict (internal)	Monitor conflict situation	Occurrence of violent conflicts within selected communities	PCU	Community visit	
Youth violence (militancy and cultism)	Monitor youth violence situation	Occurrence of youth violence within selected communities	PCU	Community visit	Quarterly
Resource-based conflict (farmers – pastoralists)	Monitor conflict situation	Occurrence of violent conflicts between selected communities and external parties	PCU	Community visit	Quarterly
Loss of (access to) agricultural land	Monitor land access and ownership	Change in land access and ownership for women and youth	PCU	Community visit	Annually
Social exclusion	Monitor inclusion of women and youth in decision-making	Percentage of women and youth represented in community-level decision-making committees, associations	PCU	Community visit	Annually

		and meetings			
Elite capture	Monitor (political) interference, conflicts of interest, corruption	PCU	PCU	Community visit	Annually
Unsafe and non-healthy working conditions	Monitor health impacts and child labour	Number of cases reported and suspected of health impact due to use of agro-chemicals, accidents due to use of production and processing machinery and related faulty wiring, and use of child labour.	PCU	Community visit	Annually

Sector	Adaptation mechanism	Description
Forestry	<i>Establishment and expansion of community natural forests, plantations, national parks and forest parks</i>	As an adaptation measure with mitigation co-benefits, the proposed action should enhance the resilience of forest ecosystems including provisioning functions in support of sustainable livelihood of direct beneficiaries. The activity will empower communities with the legal security, skills and knowledge necessary to rationally utilize their natural resources and conserve the remaining biodiversity.
	<i>Expansion and intensification of agro-forestry and re-forestation activities</i>	This adaptation measure which targets specific areas across the country will enhance the contributions of restored forest ecosystems to forest-based poverty alleviation, and, more broadly, to other national economic goals. The measure is expected to achieve the following:
	<i>Mainstreaming climate change in forest policies and plans</i>	In order to be fully responsive to the challenges of climate change, forestry sector policies and programs need to incorporate the realities of climate change.
Rangelands	<i>Development and implementation of effective policies on integrated natural resources management</i>	The negative impacts of climate change on rangelands can be attenuated through formulation and implementation of effective policies that seek to improve production and also take into consideration the needs of other natural resources-based sectors of the economy.

Sector	Adaptation mechanism	Description
	<i>Restoration of rangeland landscape</i>	This adaptation option includes the manipulation and monitoring of animal stocking rates, institutionalization of strict grazing controls and management of the vegetation and soils.
	<i>New management strategies</i>	New strategies consist of a combination of measures including active selection of plant species, and stimulation of livestock economy to encourage owners to supply livestock and meat products on local/regional markets. .
Health	Vector control program	Health impacts from malaria will need investment in social mobilization and education, prevention techniques such as mosquito repellents, insecticide treated nets, (ITN) low-cost anti-malarial drugs. Use of ITNs in particular has been shown to reduce malarial morbidity and mortality in The Gambia.
	Continuous public health education and awareness creation program	Health education and awareness-raising are conducted at community level to help audiences in their decision-making on thematic issues. Health education and promotion programs should therefore incorporate elements of climate
	Integrated disease surveillance and response	Disease surveillance is a fundamental building block of infectious disease control program. In this regard, there is a clear need to create or improve on the design of health databases, and strengthening of the integrated disease surveillance program of MOHSW.
	Nutritional support to vulnerable groups	The National AIDS Secretariat with support from the global fund assists the ministry by providing nutritional support to vulnerable groups and their family members
	Public health infrastructure	Proper waste disposal should be promoted to prevent pathogenic and toxic contamination during floods. There are numerous tools and technologies that can be used to reduce the impacts of climate variability on the health of vulnerable human populations. In Kanifing Municipal Council (KMC), these include promotion of healthy housing environment and enforcement of building regulations. In areas where people depend on untreated water, reliable and safe drinking water as well as the use of simple measures such as proper storage of drinking water in narrow-mouthed vessels, filtering drinking water and use of use of chlorine tablets.
	Vaccination programme	Under its Expanded Programme of Immunization, The Gambia has one of the highest coverage of immunization in the West Africa sub region. Vaccination campaigns for all possible diseases need to be supported. Yellow fever vaccine is administered at the age of 9 months in all RCH clinics throughout the country. Meningitis vaccine is given only to Muslim pilgrims prior to the annual hajj and when an outbreak of the disease threatens.
Agriculture	Technical adaptation measures	Selection of drought-, pest- disease-, and salinity-resistant, high-yield crop varieties under local conditions. For this purpose the genetic potential of local crop species must be investigated and specimens stored in seed banks;
		Change in planting dates and replacement of long-duration upland

Sector	Adaptation mechanism	Description
		and lowland rice varieties with short-duration varieties Demonstration, promotion and diffusion of improved post harvest technologies. This will have the long-term effect of reducing extensive cultivation of marginal lands
	Regulatory adaptation measures	Discouraging cultivation on marginal areas
		Cooked food waste reduction
		Diversification of eating habit (change from rice to other cereals)
	Livestock	Increase fodder production from intensive feed gardens
		Promote crop/livestock integration;
		Improve feed conservation techniques and access to supplements
		Engage with other institutions, for example, the International Trypanotolerance Centre (ITC), to explore the potential of intensive livestock production systems in different areas in The Gambia
Further explore opportunities for selective/cross-breeding of Ndama cows with higher milk-producing breeds		
Infrastructures	Roads, dams, bridges, lands; irrigation systems, oil plans	Conduct all EMSF and ESMPs that address potential environmental and social issues and ensure adherence to SECAP and adhere to international sustainability standards, a detailed EMSF with ESMPs in each site and attached budget was developed. For each of the potential environmental and climate impacts per site and along the entire value chain , the plans indicate a significance rating and (geographical) extent/prevalence of each impact, recommend mitigation measures, identify who is responsible for implementation of the mitigation measures, how implementation can be verified, and how frequently and with which budget
Climate Change	Climate risks preparedness reduction, and risk transfers	Introduce crop/livestock insurance policies; Sustainable renewable to energize the agricultural value chain ;Weather forecasts are broadcasted on private local radio stations; set up early warning systems on climate-related natural hazards;_eehanced research and awareness building and training on CC



Investing in rural people

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

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

Document Date: 15/10/2019

Project No. 2000001065

West and Central Africa Division
Programme Management Department

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

	Unit	Quantities			Unit Cost		amount (USD)		
		1st semester	2nd semester	Total	(GMD'000)	(USD)	1st semester	2nd semester	Total
		2020					2020		
Component 1: Agricultural productivity and adaptation to climate change									
Sub-Component 1.1. : Infrastructure development and management									
Infrastructure Development and Management for Resilient Rice Cultivation									
1. FS&DD, Supervision/Quality Management, TAs & Capacity Development									
	Irrigation Planning, FS&DD and Supervision	Lumpsum	50	50	50	1,000		50,000	50,000
	Community Participatory Consultation	Lumpsum	10	10	50	1,000		10,000	10,000
	Capacity Development and Transfer of Earth Map and Collect Earth /p	Lumpsum	1	1	8.750	175,000		175,000	175,000
	Tidal Irrigation Consolidation	Ha	300	300	1	20		6,000	6,000
	New Tidal Irrigation	Ha	1,300	1,300	9	180		234,000	234,000
	Wet-Season Valley Water Control Cascaded Dykes	Ha	100	100	6	120		12,000	12,000
	Micro-Catchments Runoff Harvesting Dykes	Ha	300	300	4	80		24,000	24,000
	Causeway to Access Rice Farm	Km	10	10	30	600		6,000	6,000
2. Infrastructure Development									
	4*4 Vehicles	Number	1	1	1.750	35,000	35,000		35,000
	Laptop	Number	2	2	75	1,500	3,000		3,000
	Desktop Computers	Number	1	1	75	1,500	1,500		1,500
	Printers	Number	1	1	50	1,000	1,000		1,000
	Photocopiers	Number	1	1	100	2,000	2,000		2,000
3. Sustainable Forest and Land Management (SFLM)									
a. Community Agroforestry									
	Community Institution Building	Hectare	650	650	3,75	75		48,750	48,750
	Survey, Mapping, Management Plans	Hectare	650	650	9	180		117,000	117,000
	Planting Material	Hectare	650	650	12,5	250		162,500	162,500
	Cash for Work	Hectare	650	650	22,5	450		292,500	292,500
b. Mangrove Restoration									
	Planting Material	Hectare	100	100	12,5	250		25,000	25,000

	Other Materials	Hectare		100	100	6,25	125		12,500	12,500
	Transport Materials to Site	Hectare		100	100	18,75	375		37,500	37,500
	Cash for Work	Hectare		100	100	22,5	450		45,000	45,000
Market-oriented Integrated Vegetable Gardens										
	1. Upgrading Existing Vegetable Gardens									
	a. Inventory of Existing Gardens	Lumpsum	1		1	250	5,000	5,000		5,000
	2. Implementation Support									
	Technical Assistance	Month	1.2	1.2	2,4	1.000	20,000	24,000	24,000	48,000
	Vehicle	Number	1		1	1.750	35,000	35,000		35,000
Total Sub-Component 1.1. : Infrastructure development and management										1,807,250
Sub-Component 1.2. Agricultural Services Provision										
Agricultural productivity enhancement										
	1. FFS Module Development									
	FFS Training Module Development Gambia College /Universities	Day	20		20	30	600	12,000		12,000
	FFS DoA Pre and In-Service Training Module Development	Day	30		30	30	600	18,000		18,000
	DoA Field Staffs In-Service Cohort Training	Session	1		1	750	15,000	15,000		15,000
	2. International Technical Assistance	Month	6	6	12	1.000	20,000	120,000	120,000	240,000
	3. Training									
	DoA Master Trainers Training	Session	1	1	2	1.500	30,000	30,000	30,000	60,000
	DoA Facilitators Training	Trained	40	25	65	50	1,000	40,000	25,000	65,000
	4. Logistical Support									
	Vehicles	Number	6		6	1.750	35,000	210,000		210,000
	Motorcycles	Number	65		65	150	3,000	195,000		195,000
	Bicycles	Number	509		509	22,5	450	229,050		229,050
	5. Nutrition in FFS									
	FFS Nutrition Module Development	Module	1		1	500	10,000	10,000		10,000
Youth-Based Services										
	1. Training support/Youth incubation									
	a. Support to SONGHAI									
	Diversification of Curricula	Module	7		7	1.250	25,000	175,000		175,000
	Digital Technologies	Lumpsum	1		1	1.000	20,000	20,000		20,000
	Small Processing Equipment for On-site Demonstrations /b	Unit	1	1	2	750	15,000	15,000	15,000	30,000

	Additional Infrastructure	Building	3	-	3	2,000	40,000	120,000	-	120,000
	Partnership Development for Trainee Placement	Session	2	2	4	50	1,000	2,000	2,000	4,000
2. Agricultural Services Matching Grant Window										
a. Promotion/Awareness Raising										
	Regional Radio Campaigns	Campaign	5	5	10	5	100	500	500	1,000
	Regional Promotional Sessions	Session	3	2	5	37,5	750	2,250	1,500	3,750
b. Support to Business Plan Preparation										
	International TA for Business Plan Preparation	Month	2	2	4	1.250	25,000	50,000	50,000	100,000
Capacity development of FOs										
1. Improving Savings Capacity through Credit Unions (CUs)										
	Community Sensitization	Session		5	5	375	7,500	-	37,500	37,500
	Marketing Campaigns/Member Enrollment	Session	3	3	6	250	5,000	15,000	15,000	30,000
	Production and Distribution of Savings Boxes	Box	400	600	1,000	1,6	32	12,800	19,200	32,000
	Motorcycles	Unit	6		6	150	3,000	18,000		18,000
	Laptops and External Hard drives	Lot	6		6	75	1,500	9,000		9,000
	Chapter Meetings	session	3		3	200	4,000	12,000		12,000
	Managers and Chairpersons Conference	Session	1		1	200	4,000	4,000		4,000
	Allowance to Bookkeepers	Month	36	36	72	3	60	2,160	2,160	4,320
	Allowance to Compliance Officers	Month	36	36	72	4	80	2,880	2,880	5,760
Improving Savings Capacity through Microfinance Institutions (MFIs)										
	Consultative and Promotional Roundtables	Session	1		1	200	4,000	4,000		4,000
	Training for Lending to Agricultural Sector	Session	1		1	250	5,000	5,000		5,000
	Support to Promotion of membership in MFIs	Lumpsum	1		1	500	10,000	10,000		10,000
Customized Financial Education to Target Group										
	Adapting Training Modules and Delivery Methods to Target Group	Days	20	20	40	37,5	750	15,000	15,000	30,000
Total Sub-Component 1.2. Agricultural Services Provision										1,709,380
Total Component 1. Agricultural productivity and adaptation to climate change										3,516,630
Component 2 : Access to markets										
Sub-Component 2.1. : Value-chain and market linkages										
Agricultural Value-Chain Interaction Platforms (AVIPs)										
	Consultation, Information, Sensitization and Mobilization	Event	6	6	12	290	5,800	34,800	34,800	69,600

	Value-Chain Mapping and Market Analyses	Study	3	3	6	250	5,000	15,000	15,000	30,000
	Communication and Visibility	Month	6	6	12	125	2,500	15,000	15,000	30,000
	MIS Expansion to New Markets (11) and Crop (rice)	Market	1	1	2	125	2,500	2,500	2,500	5,000
	Integration of additional Local Languages (Fula, Jola, Serehuleh)	Language	1	1	2	165	3,300	3,300	3,300	6,600
	Awareness Raising on MIS Service and Use	Radio program	125	125	250	7,25	145	18,125	18,125	36,250
	Market Information Facilitators Identification and Training	Workshop	12	13	25	112	2,240	26,880	29,120	56,000
	ICT Technical Support and Mobil Development	Package	2	2	4	1.700	34,000	68,000	68,000	136,000
	Cloud Based Server Operation	Month	6	6	12	16	320	1,920	1,920	3,840
	Smart Phones	Lumpsum	1		1	175	3,500	3,500		3,500
	Climate Information Dissemination Pilot	Pilot		0.25	0	9.000	180,000	-	45,000	45,000
Strengthening apex farmer organizations										
1. NACOFAG Institutional Strengthening										
	Capacity Development for Board Members	Pers	4	5	9	250	5,000	20,000	25,000	45,000
	Capacity Development to NACOFAG Technical Secretariat	Pers	1	1	2	250	5,000	5,000	5,000	10,000
	Capacity Development for Field Officers and Managers	Pers	4	5	9	50	1,000	4,000	5,000	9,000
	Annual Audit	Number		1	1	100	2,000		2,000	2,000
	Strategic Development Plan	Number		1	1	250	5,000		5,000	5,000
	Exchange Visit for Board Members	Pers		9	9	150	3,000		27,000	27,000
	Motorcycles	Number	3	3	6	150	3,000	9,000	9,000	18,000
	IT Equipment (Laptops, Printers)	Lumpsum	1	1	2	125	2,500	2,500	2,500	5,000
	Service Provider	Lumpsum	0.5		1	1.000	20,000	10,000	-	10,000
4. Strengthening the Association of Food Processors (AFP)										
	Institutional Support and Strengthening	Number	1	1	2	1.100	22,000	22,000	22,000	44,000
	Specialized Training (Packaging, Labelling, Food Safety/Quality)	Number	1	1	2	850	17,000	17,000	17,000	34,000
	Annual Food Fair (organization)	Number				500	10,000			
	Regional trade Fairs Attendance (Marketing of Products)	Number		1	1	750	15,000		15,000	15,000
Market infrastructures and rural roads										
	Users Consultation, Technical Study, Design and Construction Supervision	Lumpsum	10	10	20	50	1,000	10,000	10,000	20,000
Total Sub-Component 2.1. : VC and market linkages										655,790
Sub-Component 2.2. 4P financing										
Business Plan Development										

	1. Support to GCCI									
	International Technical Assistance	Month	2		2	1.250	25,000	50,000	-	50,000
	Training	Session		1	1	250	5,000	-	5,000	5,000
	Study Tour in the Sub-Region	Trip	1		1	750	15,000	15,000		15,000
	Vehicles	Unit	2		2	1.500	30,000	60,000		60,000
	Contribution to Staffing Costs	Person	2		2	600	12,000	24,000		24,000
					-			-		-
	2. Supporting 4P Arrangements									
	Preparation of Standard 4P Contracting Templates /b	Lumpsum	1		1	250	5,000	5,000		5,000
	4P Trade Fairs	Session		2	2	125	2,500	-	5,000	5,000
	Information Sessions	Session	2	3	5	50	1,000	2,000	3,000	5,000
	3. Engagement of the Financial Sector									
	Roundtables on Financing Agriculture	Session		1	1	125	2,500	-	2,500	2,500
	Training for Credit Officers	Session	1		1	250	5,000	5,000		5,000
	Contribution to Co-Financing FSPs Staff	Lumpsum	1		1	500	10,000	10,000		10,000
	Engagement with Equipment Providers (leasing option MoUs) /e	Lumpsum	1		1	50	1,000	1,000		1,000
	Post-investment monitoring and business support									
	1. Innovative Financing									
	Diaspora Investment/Diaspora Investment Survey	Lumpsum	1		1	2.500	50,000	50,000	-	50,000
Total Sub-Component 2.2. 4P financing										237,500
Total component 2 : Access to markets										913,290
Component 3 : Project Management and Coordination-										
	A. Support to Steering Committees									
	Establishment and Support to Project Steering Committee (PSC) /a	lumpsum	1	1	2	100	2,000	2,000	2,000	4,000
	Establishment and Support to Technical Advisory Committee (TAC)	lumpsum	10		10	50	1,000	10,000	-	10,000
					-					
	B. Coordination and Awareness									
	National Inception Workshop	lumpsum	1		1	1.500	30,000	30,000		30,000
	Regional Inception Workshop	Number	5		5	250	5,000	25,000		25,000
	Regional Annual Work Plan and Budget Preparation	Number	5		5	100	2,000	10,000		10,000
	C. Training of PSU Staff									
	Gender and Social Inclusion Training	Number	1		1	250	5,000	5,000	-	5,000
	Other General Training	Number		1	1	250	5,000	-	5,000	5,000

	D. Gender Action Learning System (GALS) implementation				-				
	Training, Follow-up Support and Monitoring	Lumpsum	1		1	300	6,000	6,000	6,000
	International Technical Backstopping	Man-month	2		2	500	10,000	20,000	20,000
	Training manuals	Lumpsum	1		1	50	1,000	1,000	1,000
	Functional Literacy and Numeracy Training	Lumpsum	1		1	500	10,000	10,000	10,000
	E. Project Management and Implementation Support								
	International Technical Assistance for 4P Implementation /d	Lumpsum	0.5		1	25,000	500,000	250,000	250,000
	F. Mobility Support				-			-	-
	Motorcycles	Number	24		24	150	3,000	72,000	72,000
	Vehicles (Station Wagon)	Number	1		1	3,000	60,000	60,000	60,000
	Vehicles (Pick up)	Number	9		9	1,750	35,000	315,000	315,000
	G. Knowledge Management and Communication								
	Annual Consultative Forum	Number	1		1	500	10,000	10,000	10,000
	Thematic Learning Forum	Number		1	1	500	10,000	-	10,000
	Development of Knowledge Management Strategy	lumpsum	1		1	1,250	25,000	25,000	-
	Development of Communication Strategy	lumpsum	1		1	1,250	25,000	25,000	-
	Exchange Visits and Travel	Pers		3	3	150	3,000	-	9,000
	H. Monitoring and Evaluation								
	M&E Manual Development	Lumpsum	1		1	1,250	25,000	25,000	25,000
	Baseline Survey	Lumpsum	1		1	2,000	40,000	40,000	40,000
	DataBase and MIS Development	Lumpsum	1		1	1,250	25,000	25,000	25,000
	Training on Program in Rural M&E (PRIME)	Lumpsum		2	2	600	12,000		24,000
	Planning, M&E Training for PSU Staff	Number		1	1	500	10,000		10,000
	Planning, M&E Training for ROOTS Implementing Partners	Number	1		1	500	10,000	10,000	-
	Support to CPCU M&E Technical Working Group	Lumpsum		1	1	500	10,000		10,000
	Mid-Term Review	Lumpsum				2,500	50,000		
	Third Party Monitoring (TPM) Implementation	Lumpsum	1		1	3,500	70,000	70,000	-
	International Annual Audit	Lumpsum		1	1	1,000	20,000	-	20,000
	I. Office Equipment				-				
	Equipment of ROOTS Headquarters	Lumpsum	1		1	5,000	100,000	100,000	100,000
	Equipment of ROOTS Regional Coordination Units	Lumpsum	1		1	2,500	50,000	50,000	50,000

	J. Support to policy dialogue									
	Rice Value-Chain Competitiveness Analysis	Study	1		1	1.000	20,000	20,000		20,000
	Policy Dialogue Round-Tables about the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)	Workshop		1	1	2.000	40,000		40,000	40,000
	K.Salary and allowance									
	1. Management Staff									
	Project Director	Month	6	6	12	100	2,000	12,000	12,000	24,000
	Financial Controller	Month	6	6	12	80	1,600	9,600	9,600	19,200
	Procurement Officer	Month	6	6	12	80	1,600	9,600	9,600	19,200
	M&E Officer	Month	6	6	12	75	1,500	9,000	9,000	18,000
	Accountant	Month	6	6	12	60	1,200	7,200	7,200	14,400
	Account clerk	Month	6	6	12	40	800	4,800	4,800	9,600
	2. Technical staff		6	6	12					
	Business Development Officer	Month	6	6	12	80	1,600	9,600	9,600	19,200
	Social Development Officer	Month	6	6	12	75	1,500	9,000	9,000	18,000
	CD/KM Officer	Month	6	6	12	75	1,500	9,000	9,000	18,000
	Social Climate Smart Agriculture Officer	Month	6	6	12	80	1,600	9,600	9,600	19,200
	Climate Change and Natural Resources Management Officer	Month	6	6	12	70	1,400	8,400	8,400	16,800
	Water Resources Officer	Month	6	6	12	75	1,500	9,000	9,000	18,000
	Regional Coordinators	Month	30	30	60	60	1,200	36,000	36,000	72,000
	Field Assistant	Month	144	144	288	37,5	750	108,000	108,000	216,000
	3. Support staff									
	Administrative assistant	Month	6	6	12	30	600	3,600	3,600	7,200
	Secretary	Month	6	6	12	30	600	3,600	3,600	7,200
	Assistant	Month	6	6	12	30	600	3,600	3,600	7,200
	Drivers/Messenger	Month	60	60	120	25	500	30,000	30,000	60,000
	K. Operating Costs									
	Office O&M at ROOTS HQ	Lumpsum		1	1	512.5	10,250		10	10
	Office O&M at RCU level	Lumpsum		1	1	102.5	2,050		2	2
	Vehicles O&M	Lumpsum		1	1	2,818.8	56,375		56	56
	International Travel	Lumpsum		1	1	512.5	10,250		10	10

total component 3 Project Management and Coordination	2,048,125
contingencies	96,955
Total ROOTS AWPB 2020	6,535,000

Guiding questions for environment and social screening	Yes/No	Comments/explanation
Category A – the following may have significant and often irreversible or not readily remedied adverse environmental and/or social implications.		
Project location		
1. Would the project develop any wetlands? (Guidance statement GS1)	No	
2. Would the project cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. conversion of more than 50 hectares of natural forest, loss of habitat, erosion/other form of land degradation, fragmentation, and hydrological changes)? (GS 1, 2 and 5)	No	
3. Does the proposed project target area include ecologically sensitive areas,⁵⁹ areas of global/national significance for biodiversity conservation and/or biodiversity-rich areas and habitats depended on by endangered species? (GS1)	No	
4. Is the project location subjected to major destruction as a result geophysical hazards (tsunamis, landslides, earthquakes, volcanic eruptions)?	No	
Natural resources		
5. Would the project lead to unsustainable natural resource management practices (fisheries, forestry, livestock) and/or result in exceeding carrying capacity. For example, is their development happening in areas where little up-to-date information exists on sustainable yield/carrying capacity? (GS 4, 5 and 6)	No	

⁵⁹ “Sensitive areas” include: protected areas (national parks, wildlife/nature reserves, biosphere reserves) and their buffer zones; areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability.

6. Would the project develop large-scale ⁶⁰ aquaculture or mariculture projects, or where their development involves significant alteration of ecologically sensitive areas?	No
7. Would the project result in significant use of agrochemicals which may lead to life-threatening illness and long-term public health and safety concerns? (GS 14)	No
8. Does the project rely on water-based (ground and/or surface) development where there is reason to believe that significant depletion and/or reduced flow has occurred from the effects of climate change or from overutilization? (GS7)	No
9. Does the project pose a risk of introducing potentially invasive species or GMOs which might alter genetic traits of indigenous species or have an adverse effect on local biodiversity? (GS1)	No
10. Does the project make use of wastewater (e.g. industrial, mining, sewage effluent)? (GS7)	No
Infrastructure development	
11. Does the project include the construction/ rehabilitation/upgrade of dam(s)/reservoir(s) meeting at least one of the following criteria? (GS8) <ul style="list-style-type: none"> - more than 15 metre high wall or - more than 500 meter long crest or - more than 3 million m³ reservoir capacity or - incoming flood of more than 2,000 m³/s 	No
12. Does the project involve large-scale irrigation schemes rehabilitation/development (above 100 hectares per scheme)? ⁶¹ (GS7)	No
13. Does the project include construction/rehabilitation/upgrade of roads that entail a total area being cleared above 10 km long, or any farmer with more than 10 per cent of his or her private land	No

⁶⁰ The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations on minimum size (usually ranging from a unit area of 10 to 50 hectares) and these will be adopted where they exist. However, where there are no standards, it is proposed to use 25 hectares as an aquaculture unit size to trigger ESIA.

⁶¹ The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations determining size of irrigation development requiring a full ESIA and these will be adopted where they exist. However, where there are no standards, it is proposed to use 100 hectares as an irrigation development unit size to trigger an ESIA.

taken? (GS10)	
14. Does the project include drainage or correction of natural water bodies (e.g. river training)? (GS7)	No
15. Does the project involve significant extraction/diversion/containment of surface water, leaving the river flow below 20 per cent environmental flow plus downstream user requirements? (GS7)	No
Social	
16. Would the project result in economic displacement⁶² or physical resettlement of more than 20 people, or impacting more than 10 per cent of an individual household's assets? (GS13)	No
17. Would the project result in conversion and/or loss of physical cultural resources? (GS9)	No
18. Would the project generate significant social adverse impacts to local communities (including disadvantaged and vulnerable groups and indigenous people) or other project-affected parties? (GS13)	No
Other	
19. Does the project include manufacture and transportation of hazardous and toxic materials which may affect the environment? (GS2)	No
20. Does the project include the construction of a large or medium-scale industrial plant?	No
21. Does the project include the development of large-scale production forestry? (GS5)	No
Rural finance	
22. Does the project support any of the above (Q1 to Q22) through the provision of a line of credit to financial service providers? (GS12)	No
Category B – the following may have some adverse environmental and/or social implications which can be readily remedied.	
Location	
23. Does the project involve agricultural intensification and/or	No

⁶² Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (guidance statement 13).

expansion of cropping area in non-sensitive areas that may have adverse impacts on habitats, ecosystems and/or livelihoods? (GS1, 2 and 12)		
Natural resource management		
24. Do the project activities include rangeland and livestock development? (GS6)	no	
25. Does the project involve fisheries where there is information on stocks, fishing effort and sustainable yield? Is there any risk of overfishing, habitat damage and knowledge of fishing zones and seasons? (GS4)	No	
26. Would the project activities include aquaculture and/or agriculture in newly introduced or intensively practiced areas? Do project activities include conversion of wetlands and clearing of coastal vegetation, change in hydrology or introduction of exotic species? (GS4)	No	
27. Do the project activities include natural resources-based value chain development? (GS 1, 6 and 12)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
28. Do the project activities include watershed management or rehabilitation?	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
29. Does the project include large-scale soil and water conservation measures? (GS 1 and 5)	No	
Infrastructure		
30. Does the project include small-scale irrigation and drainage, and small and medium (capacity < 3 million m³) dam subprojects? (GS 7 and 8)	No	
31. Does the project include small and microenterprise development subprojects? (GS 12 and 13)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
32. Does the project include the development of agro processing facilities? (GS 2, 6 and 12)	no	
33. Would the construction or operation of the project cause an increase in traffic on rural roads? (GS10)	No	
Social		
34. Would any of the project activities have minor adverse impacts on physical cultural resources? (GS9)	No	

35. Would the project result in physical resettlement of less than 20 people, or impacting less than 10 per cent of an individual household's assets (GS13)?	No	
36. Would the project result in short-term public health and safety concerns? (GS14)	No	
37. Would the project require a migrant workforce or seasonal workers (for construction, planting and/or harvesting)? (GS13)	No	
Rural finance		
38. Does the project support any of the above (Q24 to Q37) through the provision of a line of credit to financial service providers? (GS12)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 7: Procurement Plan for first 18 months

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 7: Procurement Plan for first 18 months

1. PSU would carry out procurement functions for ROOTS with the support of the CPCU in line with the current Gambia Public Procurement Law (2014). The Gambia has a history of practicing market-based and competition-based techniques for contracting the supply of goods, works and public service delivery. The legislation contains significant provisions on probity and anti-corruption, including sanctions and penalties in the event of discovery.
2. All procurement under the project would be carried out under the supervision of the PSU's staff. Tendering for most works and locally-available goods would be carried out by PSU in collaboration with the CPCU Contracts Committee (Evaluation Committee). Other procurement subject to local shopping methods would be carried out by the PSU, with implementing agencies providing necessary technical specifications, bills of quantities and terms of reference. Bids would be evaluated by CPCU Contract Committee.
3. An initial 18-month Project Procurement Plan has been prepared (see below) and will be fine-tuned at start-up. Under IFAD's new procurement guidelines (2010), the International Competitive Bidding would be mandatory for:
 - Goods equivalent to or above USD 200,000;
 - Civil works equivalent to or above USD 1 million; and
 - Services equivalent to or above USD 100,000.
4. Appropriate national procurement procedures in line with IFAD guidelines would be applicable for all types of procurement methods. However, the thresholds governing the procurement methods within the country, (national competitive bidding and local shopping), set forth by the national policy have been found to be a considerable limiting factor in project execution. Appropriate thresholds that can maximize the efficiency of the procurement implementation and reduce the governance risks are specified in the PIM.
5. The project would contribute to building up the in-house procurement capacity of the Contracts Committee, instilling best practices and the required approach and methodology, and monitoring the timeliness and quality of the process. The effectiveness of procurement would need to be assessed during supervision and alternate arrangements put in place if necessary.

Civil works

ROOTS Project- The Gambia																			
Nema		Basic Data						Request for No-obj., incl. specifications and quantities			Request for Tenders		Evaluation of Tenders		Notification of Award of Contract			Execution of Contract	
Description	Procurement Method	Number of Lots	Lump-sum or Time-based	Estimated Amount in US \$	Prior/post Review	Plan vs. Actual	Preparation of ToR/bidding Doc by PSU/Consultant	Submit ToR/bidding Doc.	Prep & Submission by External Agency	No-objection Date	Requets for Tenders	Submission/ Opening Date	Submission Evaluation Report by Ex Agency	No-objection Evaluation Report	Contract Amount in US\$	Contract Award	Contract Signature	Provisional Acceptance of Works	Final Acceptance of Works
Norm Duration of Proc Steps						Plan Actual			2 - 3 wks	1 - 2 wks	1 - 2 wks	2 - 3 wks	1 - 2 wks	1 - 2 wks		1 wk	1 wk		
List of Contracts																			
Tidal Irrigation Consolidation	NCB	2	Ls	600,000.00	Prior	Plan Revised Actual	1/10/2021	1/10/2021	1/26/2021	2/5/2021	2/12/2021	3/4/2021	3/16/2021	3/28/2021	600,000	4/4/2021	4/11/2021		
New Tidal Irrigation	NCB	2	Ls	3,600,000.00	Prior	Plan Revised Actual	1/15/2021	1/15/2021	1/22/2021	1/27/2021	1/30/2021	2/13/2021	2/20/2021	2/23/2021	3,600,000	2/26/2021	3/1/2021		
Wet Season valley water control cascaded dykes	NCB	1	Ls	100,000.00	Prior	Plan Revised Actual	2/1/2021	2/1/2021	2/8/2021	2/13/2021	2/16/2021	3/2/2021	3/9/2021	3/12/2021	100,000	3/15/2021	3/18/2021		
Micro-Catchment runoff harvesting Dykes	NCB	1	Ls	24,000.00	Prior	Plan Revised Actual	1/10/2021	1/10/2021	1/26/2021	2/5/2021	2/12/2021	3/4/2021	3/16/2021	3/28/2021	24,000	4/4/2021	4/11/2021		
Access to rice fields (Causeway)	NCB	1	Ls	75,000.00	Prior	Plan Revised Actual	1/10/2021	1/10/2021	1/26/2021	2/5/2021	2/12/2021	3/4/2021	3/16/2021	3/28/2021	75,000	4/4/2021	4/11/2021		
Upgrading of Existing Gardens	NCB	2	Ls	525,000.00	Prior	Plan Revised Actual	1/10/2021	1/10/2021	1/26/2021	2/5/2021	2/12/2021	3/4/2021	3/16/2021	3/28/2021	525,000	4/4/2021	4/11/2021		

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 8: Project Implementation Manual (PIM)

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 8: Project Implementation Manual

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I. Introduction

Purpose of the Project Implementation Manual

1. The purpose of the Project Implementation Manual (PIM) is to provide clear guidance to implementers, project stakeholders, beneficiaries (more particularly smallholder farmers and their organizations), Development Partners (DPs – given the level of co-financing) on how the Resilience of Organisations for Transformative Agriculture Project (ROOTS) is to be implemented. It sets forth the rules, the methods, the guidelines and the procedures to carry out the Project, especially on financial management and procurement and other Government of the Gambia related documents and laws to ensure consistency with both IFAD and GoG norms.
2. The PIM is designed to provide detailed and time-bound procedures to undertake Project-related activities at various levels. The PIM is a tool for implementation, supervision, monitoring and evaluation by the project steering committees and the DPs. It also allows implementers, stakeholders, beneficiaries and DPs to understand the approaches that have underpinned the preparation of the Project.
3. The PIM is a tool for transparency. It provides the criteria and procedures for selecting the beneficiaries of the Project's activities in order to ensure good governance, community engagement and inclusiveness.
4. It describes the responsibilities and procedures for Project targeting, execution, monitoring and evaluation and reporting arrangements, financial management and procurement. The PIM also depicts the process for the elaboration and approval of the Annual Work Plan and Budget (AWPB). It details the implementation mechanisms for each intervention area including the main activities to be undertaken, the sequence and period of these activities, and the responsibilities to perform them.
5. The first part of this Manual provides the basic background to the project as specified in the PDR with chapters which elaborates on a detailed targeting strategy;
(ii) institutional and project coordination arrangements; (iii) a description of components and implementation modalities; (iv) the monitoring and evaluation, communication and knowledge management system; and (v) fiduciary arrangements and disbursement system procurement, financial management. On environmental, climate and social safeguards, an ESMF is attached to the PIM and provide key guidance the environmental and social standards requirements and procedures as well as the environmental and social management framework; (b) procedures for sub-projects (screening, preparation and assessment); (c) environmental and social screening; (d) environmental and social assessment in Gambia; (e) strategy for stakeholder engagement, including social inclusion; and (f) communications and outreach strategy
6. Finally, the Manual is a living document and should and should respond to changing situations based on implementation experience, etc. Therefore, one responsibility of the PMU is to periodically consider potential updates to this PIM, with IFAD's approval.

Project development objective

7. **Project objectives.** The goal of the Project is to improve food security, nutrition and smallholder farmers' resilience to climate change in The Gambia.
8. The Project Development Objective (PDO) is to increase agricultural productivity and access to markets for enhanced food security and nutrition, and resilience of family farms and farmers organizations

Implementation period and costs

9. The total costs of the project over a period of 6 years including provisions for physical contingencies and price increase is GMD 4 billion, equivalent to USD 80 million. The base costs are GMD 3.5 billion (USD 70.2 million). Provisions for physical and financial contingencies amount to respectively to GMD 71.3 million (USD 1.4 million) and GMD 416.5 million (USD 8.3 million).
10. The project financing is as follows: (i) IFAD 11 grant for USD 17.016 million (21.3%) (ii) IFAD 11 loan for USD 4.254 million (5.3%); (iii) GEF for USD 5.3 million (6.6%); (iv) OFID for USD 10 million (12.5%); (v) AFD for USD 11,2 million (14.0%); (vi) the Government of the Gambia for USD 5.4 million from tax exemption (6.8 %); and (vii) beneficiaries for USD 6.2 million (7.8%). USD 700,000 allocation for FIPS through the loan component; The financial gap is estimated at USD 20.6 million (corresponding to 25.8% of the project costs) and could be covered from the IFAD 12 allocation (subject to availability of funds, to financial conditions to be determined, and to internal procedures) or from other financiers to be identified.

Targeting strategy

Geographic targeting

11. The Project will consolidate the achievements of NEMA and previous IFAD projects in 39 districts of five regions: (i) Central River Region; (ii) North Bank Region; (iii) Lower River Region; (iv) West Coast Region; and (v) Upper River Region. The selected districts are listed in the table below. The agro-ecological characteristics of these regions are mainly flat floodplains along the Gambia River, which is flanked on both banks by low altitude hills (uplands) that do not receive tidal flooding. The area is also characterized by the limited availability of surface water, degraded soils with poor nutrient value and low vegetative cover in the central and west Sudanian Savanna. The project zone experiences seasonal issues with both the rapid run-off of heavy rains and the flooding of large areas from the main watercourses, complicated by the intrusion of saline water above and below the surface of the Gambia River.

Region	Selected Districts
West Coast (3)- all	Kombo North, Kombo South, Kombo Central, Kombo East, Foni Brefet, Foni Bintang-Karanai, Foni Kansala, Foni Bondali, Foni Jarrol
Lower River (3)- all	Kiang East, Kiang Central, Kiang West, Jarra East, Jarra Central, Jarra West
North Bank (1)- all	Lower Niumi, Upper Niumi, Jokadu, Lower Baddibu, Central Baddibu, Upper Baddibu, Saba Sanjal, Lower Saloum, Upper Saloum, Nianija, Niani, Sami
Central River (3)- all	Niamina West, Niamina Dankunku, Niamina East, Fuladdu West, Upper Fuladu

Upper River (2) - all	Jimara, Basse Fulladu East, Tumana, Kantora, Wuli East, Wuli West, Sandu
--------------------------	--

12. The list of geographic areas are codified as follow: new infrastructure only (1); rehabilitation only (2); new and rehabilitated infrastructures (3). In these regions, areas were selected that have the highest poverty rate and are most vulnerable to climate change. The Project will focus on (i) climate resilient value-chain development (primary lowland and tidal rice production and vegetables); (ii) integrated farming systems and diversification (livestock, agroforestry, ecotourism); and (iii) malnutrition, particularly North Bank, Central and upper regions (Basse, Kantur, Kerewan and Janjanbureh) showing higher prevalence.

Target group.

13. **Target group.**¹ Targets groups are mainly women (80%) and youth (25%). Farmers, especially the poor and the small producers in the poorest areas, suffer from three primary sets of constraints that inhibit the development of their livelihoods, food and nutrition security, and job creation: (i) low productivity related to poor irrigation infrastructures, inadequate production systems, and lack of access to appropriate technology inputs, knowledge and support services; (ii) limited access to financial services (agricultural credit and loans) and markets; and (iii) vulnerability to the effects of climate change.
14. Selection criteria will be developed and validated with communities. These criteria include: (i) poverty and food insecurity; (ii) community interest and demand; (iii) synergies with other donor-supported projects; (iv) site potential (including hydrogeological potential and saline-water intrusion dynamics in rice production schemes); (v) proximity to markets (*lumos*) and linkages with off-takers; and (vi) land size of group members (not exceeding five hectares of land under rice/vegetables). The project will consolidate the outcomes generated by NEMA while initiating new interventions in new areas. The project will support existing VFAs in cluster of cooperatives as well as their registration at the MoA Agribusiness Department. The targeting of the poorest will include : (i) women's *kafos with track records*; (ii) social inclusion of the vulnerable members and; (iii) good governance mechanisms with evidence of women and youth representation in management committees. The legal status of groups will not be considered as part of the selection criteria . The project will support registration and strengthening of informal groups as required².

Interventions	Beneficiaries	Size of the land
- Infrastructure development	Community (between 200-500)	25-75 ha
- Roads	All communities - traders-buyers	-
- Vegetable gardens	Farmers groups (< 100 people)	3 to 5 ha
- Financing	SMEs- Smallholder farmers-FOs	Variable up to 75 ha
- Capacity building	All groups- Smallholder farmers	-

15. The Project will directly benefit 40,000 households,³ involving about 320,000

¹ Detailed targeting strategy in Annex 8.

² FAs are registered with the Ministry of Justice. VFAs willing to become Cooperatives Societies are registered with the MoA.

³ See disaggregation of beneficiaries in the logical framework.

people.⁴ The primary target groups are: (i) smallholder farmers, predominantly women, organized in formal or informal associations (*kafos*); (ii) female and male youth from 18 to 35 years old, involved in farming and off-farm activities; and (iii) farmers and entrepreneurs involved in cooperatives and SMEs engaged in 4P arrangements for commercialisation and value addition. It is expected that 80 per cent of direct beneficiaries will be women and 25 per cent will be youth as most of the rural areas are depopulated. As more than 10 per cent of The Gambian population are people with disabilities either as result of mental, sensory or physical impairment, the Project will involve them in the most appropriate segment of the selected value chains. The project will conduct a participatory process based on data from the Integrated Household Surveys, the FAO/WFP Harmonized Framework and national nutrition surveys to target vulnerable, food and nutritional insecure smallholders. The GoTG with World Bank support is currently developing a nationwide social registry identifying poor and extremely poor households, which will provide targeting data once available.

16. **Access to land:** In The Gambia, the two main types of land tenure systems are informal and formal. Informal land tenure is based on traditional customs and practices. The customary laws state that where an original piece of land is cleared by a Kabilo (a collection of families) the ownership of land is vested in the head of the Kabilo. For vegetable gardens and rice production allocation is done through this informal process. The formal land tenure system, on the other hand, consists of leaseholds and freehold tenures. In leasehold land tenure, the ownership rights are granted by the State for a term of generally 99 years. The right is only legalised through registration of the property leading to the production of a formal title deed or lease document, which is subsequently registered at the Attorney General's Chambers. The project will support land access rights for youth and women in line with the land tenure systems which will accelerate and secure investments .
17. **The gender strategy** of the Project will consist of the following pillars: (i) expanding women's economic empowerment through access to and control over household and productive assets, in particular land; (ii) strengthening women's decision-making role in the community and their representation and leadership in local institutions; (iii) functional literacy, numeracy and business skills training; (iv) gender awareness and women empowerment measures, including GALS training; (v) capacity building of project staff and technical service providers on gender-sensitive enterprise development and social inclusion; and (vi) minimum quotas (at least 50 per cent) to ensure women's active participation in all decision-making bodies and committees (water use management units, women *kafos*, village farmers associations, cooperative societies). Beyond production, the gender strategy will look at job opportunities along the entire value chain (rice, vegetable).
18. **A youth strategy** will be based on (i) awareness raising and organization of youth groups; (ii) strengthening of leaders of youth groups; (iii) specific support for youth SMEs, including access to finance and business development services; (iv) capacity building of project staff and technical service providers on youth-sensitive enterprise development and social inclusion; and (v) minimum quotas (at least 15 per cent) to ensure the active participation of youth in all decision-making bodies and committees (water use management units, youth *kafos*, village farmers associations, cooperative societies).
19. **Community and household targeting.** Farmers will be targeted at both individual and group level using the village/ community as the unit of aggregation or entry

⁴ Based on the average of 8 persons per household.

point, and working with existing groups and supporting the proposal of farmers for new groups. To facilitate identification of these grassroots organizations, ROOTS will liaise with the MoA, other sector ministry NACOFAG, Kafos, and FAO. In each farmer's community groups, poor households, especially women and youth would be mobilized to be active participants in the whole process of implementation, including the monitoring of activities. Women and Youth will be particularly targeted as service providers.

20. **Specific targeting measures for women and youth.** The direct beneficiaries of the project are 40,000 smallholder farmers, of which at least, 80 percent will be women and 25% young farmers, respectively. In order to meet the targets for women and youth the following measures will be followed:

- **Women.** The quota of the women of 50% will be a prerequisite for having a business plan approved for the financing and FOs to receive support from ROOTS. The project will therefore pay additional attention to promoting inclusion of women in the FBOs focussed on rice and vegetable
- **Youth.** Meeting the share of 25% youth, defined as people between 15 and 35 years of age, in the business plans will be a precondition for having a business plan approved as in the case of women's participation. Additionally, the project will specifically promote youth participation in service provision as well as on land access.

21. ROOTS will target women/youth groups/*kafos*, and village farmer associations (VFAs) and cooperative societies around the rice production schemes. Each village has a number of *kafos composed by local community based*, organization including women and youth organizations. village wide *kafos membership is* opened to all residents, regardless of origin or religion. The village-wide women's *kafos* often has several sub-*kafos* with different membership and/or objectives, such as the women's vegetable *kafos*. The women's vegetable *kafos* has 200-500 female members, depending on the size of the population and land availability⁵. *Kafos* are characterized by their solidarity, and mutual assistance, in-depth knowledge poverty structure within the communities to better target the poorest of the poor. They play a social regulation and mentorship within the communities. Within women's *kafos*, around 95 percent are women (young and adult) and 5 percent men (young or adult). In VFAs for rice production schemes, there is a high involvement of women as well as youth (75 percent female members, 55 percent female VFA committee members, 30 percent youth).

22. **Self-Targeting Measures:** The project will ensure that activities provided are of relevance to the targeted groups based on their interest and priorities identified by them. Farmers particularly women and youth must already be engaged at some level of primary production or value addition and/or indicate a willingness to be part of a farmer group to be selected as a project beneficiary. In addition to the production, the project will encourage the inclusion of women and youth on the processing, packaging and marketing. Also, in order to reduce the risk of elite capture, Implementing Partners will clearly explain the targeting criteria to the whole community, so that FBOs and communities are aware of project activities,

⁵ Due to land availability and land size requirements for commercial viability, there are limitations on the number of participants per garden. To further facilitate social inclusion in new gardens, the process will be linked to the Gender Action Learning System (GALS) approach outlined in the GALS section below. Furthermore, in consultation with the community, a minimum quota will be established for youth to access vegetable schemes in newly constructed gardens.

goal and approach, informed of what to expect from the project, and also involved in the selection of beneficiaries. All procedures established for accessing services and project support will take into account levels of literacy, local language and the need for simplicity as required.

23. **Targeting of other entities.** In addition to farmers, some agribusinesses,; input dealers, financial institutions and commercial farmers, involved in the implementation of ROOTS , could benefit from the Project, through a matching grant arrangement. Their involvement will be crucial to ensure effective access to inputs, capital, services, know-how and markets for the targeted smallholders. Other indirect beneficiaries include government staff in targeted ministries, departments, and agencies, private sector and other non-state institutions and the Songhai Center . All partners would be required to demonstrate their commitment to rural poverty alleviation, gender equality, and women's empowerment.
24. *Social inclusion in women/youth groups.* ROOTS will target women/youth groups/*kafos*, and village farmer associations (VFAs) and cooperative societies around the rice production schemes. Each village has a number of *kafos composed by local community based* , organization including women and youth organizations. village wide *kafos membership is* opened to all residents, regardless or origin or religion. The village-wide women's *kafos* often has several sub-*kafos* with different membership and/or objectives, such as the women's vegetable *kafos*. The women's vegetable *kafos* has 200-500 female members, depending on the size of the population and land availability⁶. *Kafos* are characterized by their solidarity, and mutual assistance, in-depth knowledge poverty structure within the communities to better target the poorest of the poor. They play a social regulation and mentorship within te communities . Within women's *kafos*, around 95 percent are women (young and adult) and 5 percent men (young or adult). In VFAs for rice production schemes, there is also a high involvement of women as well as youth (75 percent female members, 55 percent female VFA committee members, 30 percent youth).

Gender strategy

25. As part of the early implementation measures and through the FIPS, the project will be developing youth and gender strategies . Women farmers represent the majority of tidal and lowland rice farmers and vegetable producers in The Gambia. The vegetable and rice value chains have been selected based on their potential to achieve commercial, food and nutrition security, pro-poor growth and women's economic empowerment objectives. However, building on the experience of NEMA and other projects in The Gambia, the focus on women's groups requires specific measures to change gender relations and power dynamics, and close gender gaps. The major issues facing women farmers are drudgery of fieldwork, time poverty, limited land tenure rights, illiteracy, lack of empowerment and limited decision making.
26. The gender strategy will developed around the following intervention areas: (i) expanding women's economic empowerment through access to and control over productive and household assets; (ii) strengthening women's decision-making role in the household and community, and their representation and leadership in local institutions, and; (iii) achieving a reduced workload and equitable workload balance

⁶ Due to land availability and land size requirements for commercial viability, there are limitations on the number of participants per garden. To further facilitate social inclusion in new gardens, the process will be linked to the Gender Action Learning System (GALS) approach outlined in the GALS section below. Furthermore, in consultation with the community, a minimum quota will be established for youth to access vegetable schemes in newly constructed gardens.

between women and men iv) expanding opportunities for youth and women along the other sections of the VCs.

27. *Women's workload.* The project will contribute to improving women workload both on rice and vegetable production by: (i) improving physical access to markets and production sites, through the construction of causeways; (ii) better access to water (iii) better access to appropriate equipment's and technologies (power tillers, seeders), harvesting facilities and on-farm and off-farm processing facilities through the matching grant. The project will ensure that all productive assets purchased under the MG are owned by the women's *kafos*. Women will sign a contract for maintenance prior to receiving the grant and to be the risk of male takeover.
28. *Land access rights.* The main types of land tenure systems are informal and formal. Informal land tenure is based on traditional customs and practices. The customary laws state that where an original piece of land is cleared by a Kabilo (a collection of families) the ownership of land is vested in the head of the Kabilo. For vegetable gardens and rice production allocation is done through this informal process. The formal land tenure system, on the other hand, consists of leaseholds and freehold tenures. In leasehold land tenure, the ownership rights are granted by the State for a term of generally 99 years. The right is only legalised through registration of the property leading to the production of a formal title deed or lease document, which is subsequently registered at the Attorney General's Chambers. The project will support land access rights for youth and women in line with the land tenure systems which will accelerate and secure investments .
29. Women's access to land remains largely based on customary law where (i) the land belongs to founding families, (ii) women and youth's access rights to land is facilitated by r male relatives or spouses The Gambia Women's Act states that "women shall have the right to equal treatment in land and agrarian reform, as well as in land resettlement schemes" but does not explicitly protect women's rights to control or own land.
30. Land tenure issues will be addressed by scaling up NEMA's approach, where the National Women Farmers' Association (NAWFA)⁷ with support from the Women's Bureau support women's vegetable *kafos* in securing land access rights. This has resulted in community authorities signing contracts which officially guarantee long-term land rights to *kafos'* members. The project will also engage in policy dialogue, particularly on the implementation of CFS⁸ Voluntary Guidelines on the Responsible Governance of Tenure (VGGT)⁹, to protect women's right to access, control and own the land, as well as to cover "occupation and use" and temporary usufruct rights.
31. *Literacy.* ROOTS will conduct an assessment of the functional literacy, and business skills training courses developed under NEMA for potential scaling up. An Alignment with the FAO women's literacy programme developed in partnership with the Ministry of Education will also be considered.
32. To further address literacy constraints, ROOTS will sustain and scale-up the market information system (MIS) introduced by NEMA. By receiving information in local languages via a voice-based system, the project will further enhance women's engagement through. In addition, illiterate women and youth will be fully engaged through the Gender Action Learning System (GALS) process (see GALS section below).

⁷ NWFA is an umbrella organization, comprised of 72 cluster organizations, with over 32,000 individual members.

⁸ Committee on World Food Security.

⁹ Under ROOTS Component 2.3 on policy dialogue.

33. *Decision making.* Minimum quotas will be established to ensure women's (at least 50 percent) and youth (at least 15 percent) active participation in all decision-making bodies and committees (WUMUAs, women and youth *kafos*, VFAs, cooperative societies). Groups and organizations will be supported to strengthen governance structures and promote democratically selected executives where required.
34. Additional measures and mechanisms will be implemented to support gender equality and women's empowerment. These includes:
- The selection of service providers with proven capacity and track records working with women, including the use of female facilitators if required.
 - awareness raising during the initial stages of the project and consultations with to better understand their needs and tailor the service based on the needs.
 - childcare and on-site feeding programmes for women farmers in similar adjacent areas if required.
 - Selection of the right location to ensure to enable full women's participation.
 - Quotas for financing of women-led businesses for better inclusion of women from matching grant financing.
 - Capacity building of PMU and CPCU staff and technical service providers on youth and gender-sensitive enterprise development and social inclusion, linked to the GALS process (see below).
 - Ensure active participation of women's representatives in the project steering committee and other decision making processes (water management).
 - Integration of gender considerations in the terms of reference of all project staff. TOR for implementing partners will also pay attention to gender equality and women's empowerment.
 - The recruitment of a Social Inclusion Officer in the PSU¹⁰.
 - The recruitment of female and young staff will be prioritized.

Gender Action Learning System

35. ROOTS will implement the Gender Action Learning System (GALS) methodology to foster a community-led value chain development. GALS takes a gender-transformational approach. This approach aims at addressing the root causes rather than symptoms of inequality and disempowerment, and change power relations with a focus on sustainability. GALS will promote pro-poor development, and social and youth inclusion.
36. It promotes participation of all groups of women (literate and non-literate women and men) in order to identify challenges and opportunities using simple mapping and diagram tools. In addition to analysing value chain constraints, GALS helps to improve gender relationships at household, group and community levels, strengthen communication and win-win collaboration, and build networks and peer learning structures. The process brings results in attitudes and behaviour at different levels through individual and collective activities such as property rights and gender-based violence¹¹.
37. *Household level.* Family dynamics have substantial implications for individual motivation and well-being, as well as productivity and investments in agriculture. In the Gambia, women and men in the same household are engaged in different value chains. Women are largely on engaged in rice and vegetable production while men produce groundnuts and millet. Men rarely support women on lowland crops

¹⁰ See ToRs in appendix.

¹¹ According to a Demographic and Health Survey, the percentage of women who reported having experienced gender-based violence was 41 percent in 2013.

workload, even during the busy weeding and harvesting periods¹². GALS will facilitate intra-household negotiations over the sharing of household responsibilities, which is expected to bring about changes in the gender division of labour (e.g. husbands contributing more to farming activities and household-related tasks, thereby enhancing household productivity and income).

38. Women's main income source is vegetable production. Women are responsible for household welfare including school expenses, clothing, food, etc. GALS will promote gender equity in intra-family decision-making and better sharing of household incomes and resources. Furthermore, GALS could improve men support to women and reduce risk of conflict over resources .
39. The Gambia is in majority a polygamous Muslim society, with families often staying together in one household and a shared kitchen. The GALS will support a better division of labor between wives A on a rotational basis.
40. *Group level.* Women's vegetable kafos, and VFAs and cooperative societies around rice production schemes provide entry points to reach individual households. Members will be trained on business development and planning skills. Groups will be supported on to overcome literacy with record keeping, production planning, and business plan development and follow up, negotiations and joint marketing with dealers.
41. GALS is facilitated as an inclusive process, with the poorest and most vulnerable community members included from the beginning as facilitators. Furthermore, the approach enables and encourages people who traditionally have less voice and power, including youth, to actively participate in planning, implementation and decision-making of project activities and gain the confidence to speak in public.
42. Women's leadership: Village elders (Alikaloo) are overwhelmingly, if not exclusively, male. Village Development Committees, established to oversee village-level planning, have limited representation of women and youth. GALS will work with community leaders to better include women and youth in the in community decision-making processes and local decision-making bodies.
43. *Promotion of increased savings capacity.* women have limited access to financing and opportunities through saving. In partnership with financial institutions, NACCUG, the apex body of the Credit Unions, financial literacy will be supported to encourage women access to matching grants for investments. Awareness on households income management will be organised.
44. A PSU Social Inclusion Officer will be recruited, and will be responsible for overall implementation through supporting, managing and coordinating the process. An experienced and qualified implementing partner will be contracted to provide ongoing capacity building and follow up support (e.g. NGO as service provider). Initial international technical backstopping will be provided by an experienced GALS practitioner¹³ during implementation and scaling up to ensure a solid foundation, including assistance with identification of appropriate implementing partners. This international assistance will be progressively phased out.
45. Selection criteria for the implementing partner/service provider will include: (i) at least seven years' experience and presence in the project areas; (ii) good relationships with local government bodies; (iii) track record and work experience

¹² Integrating Agricultural Sectors into National Adaptation Plans (NAP-Ag) in The Gambia Gender Needs Assessment/Institutional Review and Training Workshop Report, FAO, July 2018.

¹³ Located through the existing international GALS network.

with smallholder farmers, and; (iv) demonstrated knowledge and skills for women's empowerment. The Social Inclusion Officer will be responsible for the supervision, monitoring and performance evaluation of the service provider to ensure delivery of quality services, accountability and timely reporting.

46. *Phasing and timeframe.* GALS will be introduced as a staged process of integration for sustainability.

- i. *Start-up phase (Years 1 and 2):* The process will begin with a 3-6 month pilot. The international GALS practitioner will assist with start-up and adapting the generic GALS manuals to the local context by developing local pictorial manuals which can be used to implement and scale up the process. The practitioner will also guide the participatory selection of participants, develop plans for peer training and monitoring progress, as well as help identify GALS champions at community level to foster momentum of the process. Following the pilot, a participatory review will be conducted to learn lessons and make plans for scaling up, as well as plan for refresher training for facilitators and peer champions as required. This phase will also include capacity building for project staff and partners, with an exposure visit for relevant staff and partners (regional learning route, visit or workshop).
- ii. *Roll-out phase (Years 3, 4 and 5):* This phase will continue the GALS training and peer learning, as well as regular participatory reviews and evaluation exercises. Details will be developed on the basis of the pilot in collaboration with the international GALS practitioner, Social Inclusion Officer, project staff, implementing partners, communities and local and national stakeholders. This phase will also include national learning exchange workshops/events.
- iii. *Sustainability phase (Year 6):* The last year of implementation will focus on strengthening the links between the involved groups and local institutions for continuity. Participatory sustainability plans will be developed.

47. *Monitoring, evaluation and learning.* As part of the GALS implementation, monitoring will be based on the action learning in the communities, which develops a culture of individual and group ongoing monitoring. Indicators and data will be identified and collected at community level, based on the priorities identified. Specific indicators will be developed, with particular attention to: i) project impacts on women's workload; ii) impact of project activities on women's control of income from rice and vegetables, and; iii) women and youth participation in decision making committees. GALS will include the production of case studies and video documentaries to support learning and upscaling.

48. *Partnerships.* A stakeholder and partner assessment will be conducted at the beginning of the GALS implementation to identify the appropriate partners, including government, private sector, other donors, UN agencies and NGOs. Cooperation, roles and tasks will be formalized so that objectives and goals can be identified and shared, progress tracked and performance consistently assessed. This includes potential partnerships to act as multipliers of GALS.

49. a joint collaboration will be established with FAO which is planning to implement GALS based on the recommendations of the 2018 FAO-led gender assessment¹⁴. Other strategic partnerships will be developed with NAWFA and key organisations working on women's empowerment (Women's Bureau). Furthermore, there is a gender focal person in each department of the Ministry of Agriculture. The Director

¹⁴ Integrating Agricultural Sectors into National Adaptation Plans (NAP-Ag) in The Gambia Gender Needs Assessment/Institutional Review and Training Workshop Report, FAO, July 2018.

of the Horticulture Department is the Gender Focal Point for MOA overall, as well as acting as Gender Focal Point for the Department. A Gender Focal Point is also present in the Department of Community Development under the Ministry of Lands & Regional Government. The Department of Community Development has a Women's Programme Unit, which coordinates women's activities in the areas of skills training and income generation.

Youth strategy

50. In line with the revised National Youth Policy, the youth shall be defined as aged up to 35 years. In addition to the youth focus through the GALS process, ROOTS will support youth through the following measures:
51. *Youth groups.* In the rural areas, very few youth are organized around agriculture. ROOTS will build on the experience of the four vegetable garden youth led under NEMA, and will target, mobilize and formalize new youth groups based on demand.
52. *Agricultural service provision: Training support/Youth incubation.* Under ROOTS *Sub-component 1.2*, a specific youth-focused intervention area has been developed. Here, ROOTS will help youth to seize opportunities along the value chains. Young women and men will be supported to obtain remunerative employment through sponsoring, sustained vocational training mentoring, business development training and start-up capital for business ventures as well as post-investment monitoring and support.
53. In line with the priorities of the Ministry of Youth and the impact of the SONGHAI Centre Program, ROOTS will support the Centre to train up to 50 students per year (50 percent female) over 12 months (intensive training and practical work). The project will support SONGHAI to develop partnerships with a network of private agri-food enterprises with internship and training and vocational education and training (TVET) programs. ROOTS will provide grants to five graduates to work newly developed market-oriented vegetable gardens. These programs will encourage better production, marketing and value addition. Furthermore, the project will support SONGHAI in establishing incentives and awards for the ten best students from each cohort.
54. In line with the project approach to attract and support youth entrepreneurship, the Social Inclusion Officer will develop and apply specific eligibility criteria for youth interested by the SONGHAI Centre Training program. Key criteria will include targeting the poorest young people. This will be developed with community participation to ensure equal opportunities for all male and female youth, including unemployed rural youth and not attending schools in the targeted areas.
55. As part of project start-up activities, ROOTS will engage in policy dialogue to further develop the SONGHAI approach in close collaboration with UNDP, that supports the for the period of 2015-20.
56. *Matching grant for youth.* The project will establish a dedicated matching grant (MG) window for youth, to better facilitate access to finance for youth and women. The objectives of the MG area are twofold: (i) to ensure that trained youth interested agri-business receive the technical and financial support, and; (ii) to support agricultural services providers with additional financial resources, in particular on mechanization and farm processing equipments. The project will finance at least 240 youth-led business ideas in partnership with financial institutions. Eligibility criteria for this MG window will focus on young women and men (under 35 years) based in rural areas (or urban and peri-urban based, but

willing to relocate) and interested in starting or growing an agri-business in the areas targeted by the project. SONGHAI graduates, agri-trainees from other programmes and any other youth will be eligible to apply for financing. Small youth groups (up to 5 persons) would also be encouraged to apply, if already organized in a recognized entity (micro-enterprise, etc.).

57. ROOTS will support the youth in preparing their business plans, while ensuring continuous feedback ongoing support. Building on the NEMA experience, the process will be more simplified.
58. *Promotion/awareness raising.* There are a number of youth training entrepreneurial schemes being conducted however participants often face constraints with access to finance after the training ends. Without access to finance, it is difficult for young people to start a viable business and applied the knowledge received and new skills. The project will work in close collaboration with the regional departments of agriculture, Gambia National Youth Council, SONGHAI, EMPRETEC, MDI, GGTI, etc. to promote this MG window to interested youth via radio and face-to-face meetings in the project's targeted areas.
59. The PSU Social Inclusion Officer will be responsible for developing gender and youth action plans at the beginning of the project as part of a participatory process, as well as updating the PIM and integrating agreed activities in the AWPB. This will clearly outline responsibilities, activities, timelines, etc., and will include details for GALS phases and activities as well as the SONGHAI approach.
60. Supervision missions will include a Targeting/Gender/Youth specialist to pay specific attention to targeting/gender aspects in the implementation manual, assess activities that contribute to the targeting/gender strategies, and provide recommendations for effective implementation.
61. The project's youth specific activities will be implemented in close partnership with other development partners such as UNDP , FAO , World Bank targeting the same beneficiaries, ROOTS will collaborate with SONGHAI to ensure that their graduates are directed towards project support opportunities, such as the creation of youth-led agricultural services businesses or placement as advisors in new or upgraded market-oriented vegetable gardens. Multiple promising examples of youth engagement in agriculture were encountered during the design mission and ROOTS intends to catalyse youth engagement and unlock the potential through the youth strategy

Environmental and Social management Framework

Environmental, climate and Social category

62. The potential environmental and social risks posed by the ROOTS project are limited and constrained to farm production (including land development), construction of market infrastructure including market connected feeder road rehabilitation, small scale irrigation infrastructure development and water supply systems (causeways, dykes less than 3 km). Most of these impacts could be readily remedied and or considerably reduced with appropriate mitigation plans. The project will not have any severe negative impacts such as the involuntary taking or restriction on the use of land resulting in physical or economic displacement. It is not envisaged to negatively affect indigenous peoples or sites of historic, religious or cultural significance. The project is rated as a '**Category B**' project. However, with respect to Social Risk, the project has a **Medium** Social risk. Although no formal Environmental and Social Impact Assessment (ESIA) will be required, but further analysis of the conflict dimensions and environmental and social management plans

will, however, be mainstreamed throughout project implementation. Citizen engagement combined with an environment plan will address potential conflict. The creation of solution-oriented inclusive platforms for high-level policy dialogue between private operators, Fos and public authorities and access to land and credit will facilitate the interaction between all actors.

Table 1: Project targets

Interventions	Beneficiaries	Size of the land
- Infrastructure development	Community (between 200-500)	25-75 ha
- Roads	All communities - traders-buyers	-
- Vegetable gardens	Farmers groups (< 100 people)	3 to 5 ha
- Financing	SMEs- Smallholder farmers-FOs	Variable up to 75 ha
- Capacity building	All groups- Smallholder farmers	-

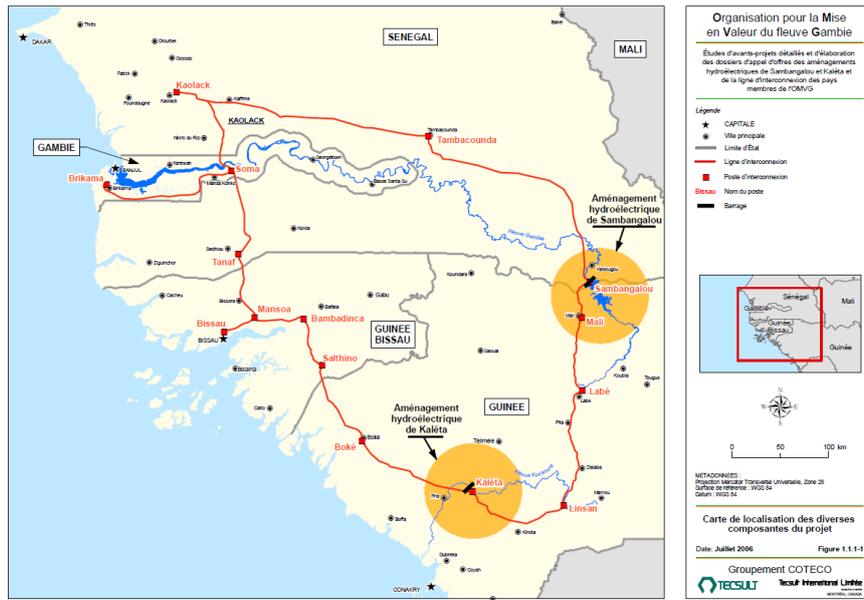
Table : Threshold Length on water infrastructures and rural roads (SECAP)

Infrastructures	length
Causeways	3 km each segment
Rural roads	Average length between villages and main roads (3 km)- shortest
	Length between village main roads (8 km)- longest

63. In terms of Climate Risk Assessment, the project is classified **High**. The target group of the sub-project is substantially dependent on climate-sensitive natural resources especially rainwater-fed agricultural plots, a large part of the sub-project area been subject to flooding in the most recent past; climate variability including unexpected dry spell occasioned by unpredictable rainfall and temperature can affect the sub-project impact, sustainability and return on investment. However, the project has the potential to integrate climate resilience measures without extensive additional costs through capacity building programs in climate smart agricultural strategies and strong collaboration with extension and weather and climate monitoring agencies to receive regular agro-climatic information and use of the right/appropriate cultivars or varieties.

64. The future Sambangalou dam located 930 km at the border of Guinea on The Gambia River in Senegal will push the salt waterfront about 100 km upstream. However, the impact will be limited in the selected targeted areas, which are far from the dam. The location of the targeted areas are suitable and various water infrastructures development help farmers to withstand to potential salt intrusion. A specific ESMP has been developed https://www.pe-omvg.org/sites/default/files/2019-01/PGES%20Interconnexion_Gambie_0.pdf

65. This ESMF has been prepared to address any potential environmental and climate impacts



66. The project will not support Category A activities (see exclusion in the ESMF) and in addition and in case changes occurred during the implementation, as per IFAD policy, the project will be require an upgrade and resubmission for review to the Evaluation Committee and approval by the Executive Board. Activities eligible for A category

Guiding questions for environment and social screening	Yes/No	Comments/explanation
Category A – the following may have significant and often irreversible or not readily remedied adverse environmental and/or social implications.		
Project location		
1. Would the project develop any wetlands? (Guidance statement GS1)	No	
2. Would the project cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. conversion of more than 50 hectares of natural forest, loss of habitat, erosion/other form of land degradation, fragmentation, and hydrological changes)? (GS 1, 2 and 5)	No	
3. Does the proposed project target area include ecologically sensitive areas,¹⁵ areas of global/national significance for biodiversity conservation and/or biodiversity-rich areas and habitats	No	

¹⁵ “Sensitive areas” include: protected areas (national parks, wildlife/nature reserves, biosphere reserves) and their buffer zones; areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability.

depended on by endangered species? (GS1)		
4. Is the project location subjected to major destruction as a result of geophysical hazards (tsunamis, landslides, earthquakes, volcanic eruptions)?	No	
Natural resources		
5. Would the project lead to unsustainable natural resource management practices (fisheries, forestry, livestock) and/or result in exceeding carrying capacity. For example, is their development happening in areas where little up-to-date information exists on sustainable yield/carrying capacity? (GS 4, 5 and 6)	No	
6. Would the project develop large-scale¹⁶ aquaculture or mariculture projects, or where their development involves significant alteration of ecologically sensitive areas?	No	
7. Would the project result in significant use of agrochemicals which may lead to life-threatening illness and long-term public health and safety concerns? (GS 14)	No	
8. Does the project rely on water-based (ground and/or surface) development where there is reason to believe that significant depletion and/or reduced flow has occurred from the effects of climate change or from overutilization? (GS7)	No	
9. Does the project pose a risk of introducing potentially invasive species or GMOs which might alter genetic traits of indigenous species or have an adverse effect on local biodiversity? (GS1)	No	
10. Does the project make use of wastewater (e.g. industrial, mining, sewage effluent)? (GS7)	No	
Infrastructure development		

¹⁶ The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations on minimum size (usually ranging from a unit area of 10 to 50 hectares) and these will be adopted where they exist. However, where there are no standards, it is proposed to use 25 hectares as an aquaculture unit size to trigger ESIA.

11. Does the project include the construction/rehabilitation/upgrade of dam(s)/reservoir(s) meeting at least one of the following criteria? (GS8) <ul style="list-style-type: none"> - more than 15 metre high wall or - more than 500 meter long crest or - more than 3 million m³ reservoir capacity or - incoming flood of more than 2,000 m³/s 	No	
12. Does the project involve large-scale irrigation schemes rehabilitation/development (above 100 hectares per scheme)?¹⁷ (GS7)	No	
13. Does the project include construction/rehabilitation/upgrade of roads that entail a total area being cleared above 10 km long, or any farmer with more than 10 per cent of his or her private land taken? (GS10)	No	
14. Does the project include drainage or correction of natural water bodies (e.g. river training)? (GS7)	No	
15. Does the project involve significant extraction/diversion/containment of surface water, leaving the river flow below 20 per cent environmental flow plus downstream user requirements? (GS7)	No	
Social		
16. Would the project result in economic displacement¹⁸ or physical resettlement of more than 20 people, or impacting more than 10 per cent of an individual household's assets? (GS13)	No	
17. Would the project result in conversion and/or loss of physical cultural resources? (GS9)	No	
18. Would the project generate significant social adverse impacts to local communities (including disadvantaged and vulnerable groups and indigenous people) or other project-affected parties? (GS13)	No	

¹⁷ The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations determining size of irrigation development requiring a full ESIA and these will be adopted where they exist. However, where there are no standards, it is proposed to use 100 hectares as an irrigation development unit size to trigger an ESIA.

¹⁸ Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (guidance statement 13).

Other		
19. Does the project include manufacture and transportation of hazardous and toxic materials which may affect the environment? (GS2)	No	
20. Does the project include the construction of a large or medium-scale industrial plant?	No	
21. Does the project include the development of large-scale production forestry? (GS5)	No	
Rural finance		
22. Does the project support any of the above (Q1 to Q22) through the provision of a line of credit to financial service providers? (GS12)	No	
Category B – the following may have some adverse environmental and/or social implications which can be readily remedied.		
Location		
23. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas that may have adverse impacts on habitats, ecosystems and/or livelihoods? (GS1, 2 and 12)	No	
Natural resource management		
24. Do the project activities include rangeland and livestock development? (GS6)	no	
25. Does the project involve fisheries where there is information on stocks, fishing effort and sustainable yield? Is there any risk of overfishing, habitat damage and knowledge of fishing zones and seasons? (GS4)	No	
26. Would the project activities include aquaculture and/or agriculture in newly introduced or intensively practiced areas? Do project activities include conversion of wetlands and clearing of coastal vegetation, change in hydrology or introduction of exotic species? (GS4)	No	
27. Do the project activities include natural resources-based value chain development? (GS 1, 6 and 12)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
28. Do the project activities include watershed management or	Yes	Yes but only eligible activities under

rehabilitation?		Category B criteria considered see (PDR and ESMF) with key mitigation measures
29. Does the project include large-scale soil and water conservation measures? (GS 1 and 5)	No	
Infrastructure		
30. Does the project include small-scale irrigation and drainage, and small and medium (capacity < 3 million m³) dam subprojects? (GS 7 and 8)	No	
31. Does the project include small and microenterprise development subprojects? (GS 12 and 13)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
32. Does the project include the development of agro processing facilities? (GS 2, 6 and 12)	no	
33. Would the construction or operation of the project cause an increase in traffic on rural roads? (GS10)	No	
Social		
34. Would any of the project activities have minor adverse impacts on physical cultural resources? (GS9)	No	
35. Would the project result in physical resettlement of less than 20 people, or impacting less than 10 per cent of an individual household's assets (GS13)?	No	
36. Would the project result in short-term public health and safety concerns? (GS14)	No	
37. Would the project require a migrant workforce or seasonal workers (for construction, planting and/or harvesting)? (GS13)	No	
Rural finance		
38. Does the project support any of the above (Q24 to Q37) through the provision of a line of credit to financial service providers? (GS12)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures

Institutional arrangements and project coordination

67. The Ministry of Agriculture (MoA) will be the lead agency. It will be responsible for project oversight and implementation, and provide inter-ministerial coordination. Through its Central Project Coordinating Unit (CPCU), MoA will ensure harmonization and alignment among donors. National steering committees and

technical advisory committees will be established for project strategic direction and policy guidance. To ensure timely and effective execution of ROOTS' day-to-day activities, the MoA will establish a project support unit (PSU) at national level, seconded by five regional coordination units (RCU).

National steering committee

68. *At national level*, a Project Steering Committee (PSC) will be established within the first six months of project effectiveness and be responsible for project strategic oversight. The PSC will ensure that overall project operations are in line with national policies and strategies, and within the legal and technical framework agreed between the Government and IFAD. The PSC will meet twice a year. The PSC will approve annual reports and annual work plans and budgets (AWPB), provide guidance on the management and implementation of the project, ensure alignment and coordination of interventions, and adjust implementation as appropriate, including performance assessment of implementing partners.
69. MoA will chair the PSC and include the following members: (i) the CPCU; (ii) the Ministry of Finance and Economic Affairs; (iii) the Ministry of Trade, Industry, Regional Integration and Employment; (iv) the Ministry of Fisheries, Water Resources and National Assembly Matters; (v) the Ministry of the Forestry, Environment, Climate Change and Natural Resources, (vi) the Ministry of Lands and Regional Government, (vii) Ministry of Energy and Petroleum; (viii) Ministry of Youth and Sports; (ix) the Women's Bureau; (x) the National Farmers Platform; (xi) the Association of Non-Governmental Organizations (TANGO); (xii) the Department of Agriculture (DoA); (xiii) the National Agricultural Research Institute (NARI); (xiv) The Gambia Investment and Export Promotion Agency (GIEPA); and (xv) the Gambia Chamber of Commerce and Industry (GCCCI). The Project Director will be the secretary of the PSC. He will be responsible for reporting, calling meetings and following-up on agreed actions.
70. *At regional level*, a Technical Advisory Committee (TAC) will be responsible for providing oversight and strategic coordination. Five TACs will be established and meet every six months. It will review implementation progress, provide coordination guidance and endorse regional AWPBs. It will be chaired by the Regional Agriculture Director and comprise senior regional staff from the following Ministries: (i) the Ministry of Fisheries, Water Resources and National Assembly Matters; (ii) the Ministry of the Forestry, Environment, Climate Change and Natural Resources; (iii) the Ministry of Lands and Regional Government; (iv) the Governor Office; and (v) the Women's Bureau (WB). The ROOTS regional coordinator will act as the secretary of the TAC and will be responsible for reporting, calling meetings and following up on agreed actions.

Project support unit

Project management and oversight

71. **Implementation Readiness** . Implementation of IFAD projects in The Gambia faces three major constraints: (i) slow start-ups, (ii) weak project teams and service providers, and (iii) cumbersome procedures and procurement. To ensure a fast start-up, ROOTS will apply for FIPS (Faster Implementation of Project Start-up). Implementation of past and ongoing projects has been compromised by an inability of project staff to provide adequate technical guidance and management oversight. IFAD and GoTG will pay attention to adequate staffing configurations, with international technical assistance (ITA) as appropriate. IFAD will support the capacity strengthening of the Ministry of Agriculture in the long-term . Through the

FIPS, the Ministry should make available sufficient staff and financial resources for M&E activities, both at institutional and project levels

72. **Strengthen project management performance and oversight for effective and efficient delivery mechanism in the Government.** Unlike under NEMA which has a centralized project, There is a need for decentralized project support team to the regions to be closer to the staff and where activities will be implemented. The PCU will continue to be in Banjul but in each region, ROOTS will post technical agents on project sites to ensure efficiency and ownership. In order to ensure the quality and continuity of project staff as one of the key elements for improved project management and implementation, the Government will establish a transparent procedure for staff recruitment/assignment, their performance management in close consultation with IFAD. Any change in staff assigned to IFAD-supported projects should be undertaken following the required consultation between the Government and IFAD, and based on proof of misconduct or unsuitability of the staff member in question, when necessary. Furthermore the role of project steering committees (PSCs), to fulfil its oversight mechanism will be clarified with appropriate representation (in terms of calibre/levels and institutions, including various relevant partners and not only the government agencies) effectively. A regular monitoring of the PSC will be conducted
73. *The PSU will be in charge of project-level coordination and oversight.* The PSU will comprise (i) a Project Director; (ii) a Capacity Development and Knowledge Management Officer; (iii) a Monitoring and Evaluation officer; (iv) a Business Development Officer; (v) a Social Inclusion Officer; (vi) a Senior Climate-smart Agriculture Officer; (vii) a Climate Change and Natural Resources Management Officer; (viii) a Senior Engineer; (ix) a Water Resources Officer¹⁹; (x) a Financial Controller; and (xi) a Procurement Officer. The Senior Climate-smart Agriculture Officer will be the team leader for component 1 and the Business Development Officer will be the team leader for the component 2. Under the guidance of the Financial Controller, an administrative unit will comprise an Accountant, an Administrative Assistant, an Accountant Clerk, a Secretary, an Assistant and ten drivers.
74. The PSU will report periodically on all aspects of implementation progress, including financial expenditure and physical progress to GoTG and IFAD. A key PSU role will be financial management functions, including grant administration and audits. To the extent possible, the PSU would be integrated with national and decentralized processes and decision-making mechanisms.
75. The PSU will work through implementing partners, who will include (i) technical units in MoA or other line ministries; (ii) other service providers, including FOs; (iii) NGOs; and (iv) the private sector. The three main modalities for engagement of partners are as follows:
- i. MoUs with public institutions/services and farmers organizations. MoUs will be supplemented by a work Plan and a budget outlining activities, targets and budget. Payments will be made based on the six months activities plan. Performance and results will be assessed on an annual basis. Collaboration the following year will be conditioned by the performance assessment. In the case of under-performance, the project may choose to engage another partner for implementing the activity or provide Technical Assistance or capacity building directly to the implementing partner. MoUs will be supervised by the PSU under the guidance of the PSC.

¹⁹ Funded by the budget from component 1: Agricultural Productivity and Adaptation to Climate Change

- ii. Recruitment of service providers will happen on a competitive basis. Service providers may be individuals, research institutions, NGOs, private consulting firms and private enterprises (domestic or international). Contracts with clear performance-based indicators, targets, M&E requirements will be developed.
 - iii. Partnerships (without a financial element) will be actively pursued, for example with the private sector, when objectives converge. The project may also establish partnership with research institutions, development partners etc.
76. *In each of the five regions covered by the project, RCUs will be established.* A Regional Coordinator post will be financed to strengthen the project delivery and to improve synergy and complementarity with other on-going projects. He will work under MoA's Regional Agriculture Director. In each region, the capacity of decentralized public services for supporting the field implementation of the project will be assessed. The project will either top-up/strengthen their capacity or recruit (through an international recruitment firm) four field assistants to cover: (i) sustainable rice production; (ii) integrated market-oriented vegetable garden; (iii) FOs capacity development; and (iv) market and value-chains. The field assistants will work under the direct responsibility of the Regional Coordinator. In the Central River Region South (CRR-S) and Central River Region North (CRR-N), the ROOTS regional team will comprise one regional coordinator in charge of the two regions with four field assistants in CRR-N and four field assistants in CRR-S. An organigram of PSU staff and detailed ToRs of core staff are attached in Annex 1.
77. *International technical assistance.* In line with ROOTS objectives and based on the lessons learnt from NEMA (see main PDR for lessons learnt), an international technical assistance²⁰, progressively phasing out after 2 years, will be recruited to ensure the smooth implementation of 4Ps and matching grant schemes. An International Technical Assistant (Senior Engineer²¹) for supporting activities related to water resources management, infrastructure and irrigation will also be recruited for 5 years.
78. *Implementation partners.* In general, the potential implementing partners (public services and FOs) of ROOTS face challenges including number and quality of qualified staff, resources and mobility. Based on the lessons learnt from the NEMA, an assessment of each ROOTS potential implementing partner will be done and translate into the appropriate capacity development measures in terms of training, equipment and resources.
79. *Citizen engagement.* The planning and implementation of the field/community level interventions will be driven by community needs. To facilitate the effective participation of beneficiaries, appropriate mobilization, organization and training will be conducted with the support of ROOTS. At each stage of ROOTS in particular implementation, monitoring and evaluation, FOs, civil society organizations, and representatives of youth and women associations especially those in areas covered by the project will be associated, consulted and closely involved through participatory processes. The ROOTS formulation was conducted in line with this approach, and all main stakeholders were part of the formulation process.
80. Beneficiaries and frontline actors will be significantly involved in data collection and validation, which will be verified by the project team and complement the M&E system. More specifically, a social accountability approach will be entertained, tailored to the specific context, capacities (e.g., information systems), incentives and institutional arrangements (e.g., decentralization). As such, a comprehensive

²⁰ The ToR of the 4P International Technical Assistance are available in appendix 1.3

²¹ Funded by the budget from component 1: Agricultural Productivity and Adaptation to Climate Change

yet rapid assessment should be carried on first to identify ongoing efforts to systematically engage citizens, including for government and private sector key stakeholders involved, and therefore better understand and prioritize the specific tranches (outcomes, outputs and activities) within ROOTS' results chain that can be mostly benefited from increased citizen engagement, especially through third party monitoring. After completion of the assessment, the objectives, mechanisms (e.g., citizen report cards, social audits), and organization responsible (e.g., non-profit organization, producer organization) for third party monitoring will be specified, indicating the link with ROOTS results framework indicators, as well as the processes (e.g., data collection) and incentives to secure a two-way interaction between citizens (beneficiaries and/or non/beneficiaries) and government and private sector. ICT tools (e.g., SMS, web portals), where feasible, will also be piloted to facilitate this interaction and empower citizens with a focus on performance and results for IFAD-supported activities.

81. On water infrastructures and ensure long-term sustainability of infrastructures, the project will strengthen 40 Water User Management Units (WUMU) to plan, maintain and sustainably manage the rice irrigation schemes, with participation of at least 60 percent women as the force is composed of 60% women and 25 percent youth.
82. ROOTS will pay greater attention to participation, training and capacity building of beneficiaries and community based organisations particularly WUMUs who can play a central role in ensuring sustainability of physical infrastructure laid down by the programme.
83. WUMUs will play a key role in : i) the design of irrigation infrastructure, proposing technologies that fit their technical, financial and labor resources and capacities; ii) the distribution of water in rice plot; iii) joint management and maintenance of the infrastructure; iv) joint management and governance with services beyond water management; v) social cohesion and dispute resolution; and vi) public-private partnerships.
84. The project will mobilize existing WUMUs and enhanced new ones to continue to play a key role on irrigation infrastructures sustainability. A part of the policy dialogue, the project will work on the definition of WUMU's status and their role in the O&M of irrigation infrastructure (which currently remains state property). The WUMUs will link to catchment management institution to ensure their allocation of water also respects the water needs from other users, like livestock.
85. The catchment management institutions will i) decide about water allocation across whole river basins, ii) organize conservative actions upland, and iii) contribute to sustainable management of resources. Around the valley bottoms, ROOTS will support the establishment and strengthening of 15 micro catchment management committees. These committees will put in place regulations on use, conservation, protection and management of their water resources and upland conservation activities. These will also ensure the equitable access to water for all members, including farmers and livestock keepers. The Project will finance 10 water-gauging stations and 11 groundwater resource data collection stations and their networks to allow WUMUs the monitor continuously the water discharge. District-level staff, with the support of a WUMU Specialist from the Ministry of Water, will support the formation and strengthening of these institutions in water management, in infrastructure management, in institution management.

Project start-up

86. *Lessons learnt from past IFAD projects in The Gambia.* Implementation of IFAD projects in The Gambia have often faced slow start-ups. To address the issue,

ROOTS will apply for FIPS (Faster Implementation of Project Start-up) as described in Annex 11 of the PDR. The requirement of ROOTS team will be anticipated and to ensure that the team is in place before the project start.

87. *Transitioning from NEMA to ROOTS.* To ensure a smooth transition between NEMA and ROOTS, priority for recruitment will be given to NEMA's core team after performance evaluations. The unfilled positions after evaluation plus all new positions will be advertised and filled with the support of an international recruitment company. MoA will lead and oversee the recruitment of PSU staff.
88. *Start-up plan.* ROOTS' start-up plan and activities to be implemented before project effectiveness include: (i) establishing/recruiting the project's technical team at national and regional levels, based on the performance assessment of NEMA staff, and an external recruitment process led by a third party (international recruitment company); (ii) developing a detailed M&E manual, accounting software and MIS system; (iii) the procurement of Goods and Services required for project start up ; (iv) embarking upon districts and village targeting; (v) launching the bidding process for the two international technical assistances supporting the project support unit; (vi) performing the baseline survey. The start-up plan will be financed by the FIPS.
89. *Inception workshops.* Project implementation will start with a three-day national inception workshop to be organized by the PSU. The inception workshop will be an opportunity to present: (i) the project's objectives; (ii) the investment strategy; (iii) the description of project components, sub-components, intervention areas and activities; and (iv) the implementation arrangements, financing modalities and M&E arrangements. All key project stakeholders - including representatives of FOs, the implementing agencies, the development partners, the PSC, the private sector and concerned NGOs- will participate. Key documents to be used for the discussion will be the project design report (PDR) and the first AWPB. At the end of the workshop, a report will be prepared to highlight conclusions, issues and recommendations. Similar one-day workshops will be held within each of the RADs covered by the project to sensitize key administrative and technical personnel at the regional level and representatives of beneficiaries' communities, including at least four representatives (the Seyfo, the Alkalo, a female, a young male or woman). Similar reports as those prepared at the national level will be prepared and will provide inputs for the project implementation.

AWPB preparation

90. As per good practice and IFAD standard requirement, the project will be implemented based on detailed annual work plans and budgets (AWPBs). The beneficiaries, with technical support of the PSU, will co-lead the AWPB preparation. The communities will be mobilized, sensitized and organized for this purpose. The ROOTS regional team under the RAD leadership will assist each participating communities and beneficiaries properly to capture their proposals into a coherent standard format.
91. In each region, the regional AWPB will be developed by the Regional Coordinator with support of PSU technical officers and endorsed by the regional TAC. Each regional AWPB will include: (i) details of activities by component, sub-component and intervention areas with quarterly action plans; (ii) a statement of budget utilization by component, sub-component and intervention areas from the previous year; (iii) a summarized disbursement schedule by quarter; (iv) a summary of the proposed annual budget by project component and sub-component.
92. Based on MoU signed with the project, all the Public Services and Farmers Organization involved in the ROOTS implementation will develop a two years

working and budget related to their activities. This two years working plan and budget will be endorsed by the Project Steering Committee to allow its implementation. Year based assessment of the Public services and Farmers Organizations deliveries performance will be done for guidance and decision-making from the Project Steering Committee.

93. The components Team-leader will institute and undertake an annual component activities planning exercise fully reflecting the demands and priorities of the region and communities.
94. At national level, the PSU will review each AWPB submitted by RADs and by the implementing partners in order to ensure consistency, technical soundness and alignment with the project objective, before being incorporated into one consolidated AWPB. The consolidated AWPB will estimate funding requirements for all approved activities and will adequately plan for capacity building, technical support, leaning and information sharing, communication events and participatory monitoring. The consolidated AWPB will be prepared using standard and budget forms.
95. The consolidated AWPB will be submitted to the PSC for review and endorsement no later than mid-October of each year. The PSC-approved AWPB will be submitted by the end of December to IFAD for non-objection. The final AWPB including IFAD comments will be shared with the implementation partners by January of each year.

Component description and implementation modalities

Component 1. Agricultural productivity and adaptation to climate change

96. This component aims to build the resilience of farmers' organizations to climate change through an enhanced and sustainable access to natural resources and agricultural services. The objective of this component will be pursued through the following two sub-components: (i) infrastructure development and management for rice and horticulture; and (ii) agricultural services provision.

Sub-component 1.1: Infrastructure development and management

97. This sub-component will address critical community infrastructures and equipment needs to enhance agricultural production and productivity of rice and vegetable value-chains, while ensuring the sustainable use of natural resources. The two interventions areas to be financed under this sub-component include: (i) infrastructure development and management for resilient rice cultivation; and (ii) market-oriented vegetable gardens. This sub-component will benefit 40,000 farmers.

Infrastructure development and management for resilient rice cultivation

98. This intervention area will support the upgrade and new development of dry-season tidal irrigation in wet season rice growing areas and developing new wet-season water-control structures on existing moisture deficit agricultural areas. The three *in situ* rainwater harvesting typologies under the latter category include: (i) wet-season valley water control cascaded dykes; (ii) micro-catchment water runoff control dykes; and (iii) causeways. Typical examples under NEMA are Ndemban Jola in WCR, Jurunku in NBR and Toniataba in LRR.

99. Activities²² to be supported under this intervention area include:

- Site identification;
- Citizen engagement i.e. consultation with village-development committees (VDC) and village farmers associations (VFA) for scheme identification, planning and sustainable use;
- Feasibility studies and detailed design (FS&DD) of 5,900ha gravity irrigation;
- Supervision of irrigation infrastructures construction on 5,900ha (and also including 20km of causeways);
- Capacity development of farmers in order to operate, maintain and manage rice irrigation and cultivation sites through Water User Management Units (WUMU);
- preservation of ecosystem such as the rehabilitation of 1,400ha of mangroves and 1,300ha of community forests around rice production sites;
- Introduction and transfer to MoA and MoFWR of earth observation/digital technologies to monitor land development investments;

100. *Site identification.* In consultation with MoA, an international technical assistance expert (ITA, supporting the project on all infrastructure development activities²³) will be recruited to carry out desk review the additional rain-fed agricultural areas to be developed for dry-season tidal irrigation, wet-season water control (valley bottom and micro-catchment in moisture-deficient agricultural areas) and swampy areas causeways typologies. The project will also build on the inventory work performed by FAO²⁴. The MoA in the concerned regions and districts, as guided by the ITA and supported by trained community facilitators, will carry out preliminary participatory consultation with potential beneficiaries and propose set of schemes for initial years' implementation. In this process, the scheme selection criteria below and tools/formats designed by the ITA will be used. The criteria are: (i) suitable land and water availability; (ii) potential for youth and women engagement; (iii) ease of technical complexity; (iv) indicative return to investment; and (v) social cohesion. This tentative criterion could be tailored to fit the specific irrigation typology. The PSC will be the final approver of the selected schemes.

101. *Citizen engagement, participatory planning and capacity development.* In agricultural areas having potential for dry-season rice production (tidal irrigation around areas such as Jahally, Pachar, Sukuta and Danpha-kunda in CRR) and wet-season (valley bottom, micro-catchments and causeways accessible sites- such as Ndemban Jola in WCR, Jurunku in NBR and Toniataba in LRR respectively), the project will conduct participatory consultation with VDCs (under the traditional leadership of "Alikaloo") and district authorities (under the leadership of "Seyfo"). In addition to familiarizing them with the project objective, targeting (geographic and beneficiaries) and implementation approach/modalities, the citizen engagement exercise carried out with the PSU will clarify the overall roles and responsibilities of all actors (including the beneficiaries) throughout the project processing cycle.

102. *FS&DD.* Following the above-mentioned participatory meetings, each of the identified sites will be prioritized by the ITA in close consultation with the concerned in MoA for implementation. The FS&DD will be carried out by an international consultant recruited by the PSU (ToRs to be prepared by the ITA). Once the

²² Details of activities sponsored by each financier are detailed in the COSTAB (see financing plan) and Annex 3 of the PDR. In a nutshell, AFD will finance (i) 500 ha lowland development; (ii) construction of 20 vegetable gardens and (iii) 15km causeways. OFID will finance USD 10 million land development infrastructures in sub-component 1.1. GEF will finance all the ecosystem preservation activities.

²³ See ToRs in the Appendix section of the PIM.

²⁴ At the time of the design, the inventory was not finalized (by July 2019). The inventory will assess water control potential, map and carry out preliminary study for efficient water management of tidal irrigation schemes at Jahally (1,000ha), Pachar (1,014ha), Sukuta (105ha) and Danpha-kunda with the aim of supporting irrigation and drainage network improvement and capacity development for infrastructure O&M.

feasibility study is complete and satisfactory (as cleared by the DCM and ITA and approved by the PSU), additional community consultation will be held by community facilitators. This consultation will involve NAWFA in order to promote access of the poor, women and youth to irrigated land. The objective of this consultation is to update the outcome of the feasibility studies (appraised and rejected) to potential beneficiaries of the previously consulted communities and inform on the next step. The consultation will be limited only to the successfully appraised sites to include a more detailed discussion on the typology of intervention and its appraised scope, detailed roles and responsibilities of all actors, topographic survey and other technical works to be conducted on the ground and submission of a completed/signed project Request Form. Once the detailed designs are approved following similar process, the subsequent construction supervision of water control structures of the three typologies will be carried out by the same FS&DD international consultant as overseen by the delegated contract management (DCM, see below for details) and ITA. It is to be noted that the FS/DD and supervision international consultant for this intervention area will be separate from intervention area 3 given the peculiarities and the magnitude of the activities involved in their respective ToRs as prepared by the ITA.

103. Once the final version of the detailed design (including bid documents and preliminary O&M manual) is cleared by the DCM as overseen by the ITA, it will pass to the PSU for ultimate submission to the PSC.

104. *Supervision of irrigation infrastructures construction (5,900ha).* Once the complete dossier of the FS&DD is cleared and approved, the construction phase will start, with the actual implementation of civil works. The five major work items include:

- Consolidate 1,300ha of existing but poorly performing dry-season tidal irrigation areas;
- Develop 2,800ha of new dry-season tidal irrigation on existing agricultural lands; Develop new wet-season valley water control cascaded dykes on 200ha;
- Develop new micro-catchments runoff control dykes on 800ha;
- Construct 20km causeways in about four wet-season sites (each 5km reclaiming about 200 ha) to access a total of 800ha rice growing swampy areas.

Table 2: phasing of investments, infrastructure development

Activity (Unit in Ha)	Y1	Y2	Y3	Y4	Y5	Y6	Implementer	Oversight
Consolidation and new development of tidal irrigation and wet-season runoff control dykes								
Tidal irrigation consolidation (1,300ha)		300	600	400			contractors/ suppliers/ consultants	PSU/DCM/ITA
New tidal irrigation (2,800ha)		600	900	1300				
Wet-season valley water control cascaded dykes (200ha)		20	70	70	40			
Micro-catchments runoff control dikes		150	350	300				
20 Km causeway construction to access 800ha rice farms (200ha/5km)		3 (120)	7 (280)	7 (280)	3 (120)			

Although the total number of land development per is ,800ha of new dry-season tidal irrigation on existing agricultural lands, new wet-season valley water control cascaded dykes on 200ha, is as presented above , the size of land development is presented below as per for the target group and each less than 100 ha

Interventions	Beneficiaries	Size of the land
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- Infrastructure development	Community (between 200-500)	25-75 ha
- Roads	All communities – traders- buyers	-
- Vegetable gardens	Farmers groups (< 100 people)	3 to 5 ha
- Financing	SMEs- Smallholder farmers-FOs	Variable up to 75 ha
- Capacity building	All groups- Smallholder farmers	-

With regards to dikes and causeways, it is less than 10 km each

Infrastructures	length
Causeways	3 km each segment
Rural roads	Average length between villages and main roads (3 km)- shortest
	length between village main villages (8 km)- longest

105. Construction of all the schemes will be undertaken by competitively selected contractors and overseen by the DCM and ITA who will have a critical role of guiding and confirming that the bidding and procurement process are managed as stipulated in its ToRs. The PSU, with support from the ITA, will play the overarching role of overseeing the whole process. To ensure proper follow up and sustainability, as much as possible, all construction works are proposed to be completed two years before the project ends.

106. *Water users' management units (WUMU)*. To ensure long-term sustainability of infrastructures, the project will strengthen/build 40 WUMU to plan, operate, maintain and sustainably manage rice irrigation schemes, with participation of at least 50 percent women and 25 percent youth. These WUMU will also ensure the equitable access to water for all members. District level staff, with the support of WUMU Specialist from the Ministry of Water, will support the formation and strengthening of these institutions. Around the valley bottoms, ROOTS will also support the setting-up and strengthening of 15 micro catchment management committees. These committees will put in place regulations on use, conservation, protection and management of water resources.

107. The project will support the participation, training and capacity building of beneficiaries. and community based organisations particularly WUMUs who can play a central role in ensuring sustainability of physical infrastructure laid down by the programme. More specifically, the project will support the policy environment around irrigation works (including for rehabilitation, construction and maintenance) through the following role of WUMU : i) the design of irrigation infrastructure, proposing technologies that fit their financial and labor resources; ii) the distribution of water in rice plot and vegetable gardens; iii) decisions about water allocation across whole river basins; iv) joint management and maintenance of the infrastructure; v) joint management and governance with services beyond water management; vi) social cohesion and dispute resolution; vii) public-private partnerships; and viii) sustainable management of resources. The project will mobilize existing WUMUs and enhanced new ones to continue to play a key role on irrigation infrastructures sustainability. A part of the policy dialogue, the project will work on the definition of WUMU's status and their ownership of irrigation infrastructure (which currently remains state property).

108. To allow WUMU the monitor continuously the water discharge, the project will finance 10 water-gauging stations and 11 groundwater resource data collection

stations and their networks. An international consultant will be hired to: (i) conduct an inventory of existing surface and groundwater hydrologic and hydrogeological gauging stations; (ii) assess the prevailing gaps, (iii) advise on remedial measures; and (iv) provide recommendations on establishing strategically important additional stations. The assessment will be conducted during the project's first year. Once the requirements are determined and agreed upon, procurement and installation of necessary equipment and data collection network will be carried out through the PSU. To ensure that the most optimal set of goods are procured and properly installed, their specifications, installation and networking works will be reviewed/cleared and supervised by the DCM entity for quality assurance as overseen by the ITA.

109. *Technical assistance.* Based on the lessons learned from NEMA, and considering the relatively bigger size of the project and associated risks, the ITA will technically coordinate/facilitate proper and timely implementation of the project studies/plan, construction, capacity building as well as monitoring and evaluation related exercises. In addition to backing the PSU, ITA's task will include enhancing the MoA and MoFWR capacity through knowledge transfer and mentoring to ensure timely implementation and institutionalization of the project interventions. The ITA will dedicate 50 percent of its time to assist on the timely and quality implementation of this intervention as coordinated and led by the PSU for four years.
110. *Quality management.* From the experiences and lessons learned from NEMA during the recent visits and several other projects in sub-Saharan Africa, irrigation development suffers from challenges of poor design and construction mainly due to inadequate attention and time to quality enhancement aspects during design (upstream work) and/or quality control/supervision and contract management (downstream works). To avoid quality issues and ensure sustainable and resilient investments, the project will institute a quality management system incurring as little as 2 to 5 percent of the investment costs. To this end, the project will deploy a third-party quality management public entity (so called "delegated contract management" - DCM²⁵- entity such as GAMWORKS), to take the responsibilities of making sure that the abovementioned problems are detected and addressed early enough, ensure the proper implementation and support procurement of all consultants, goods and civil works. In pursuing its task, the DCM will institute an efficient review process with clear submission (to each other) deadlines. Depending on scope of the scheme, on average, the review/clearance period per scheme should not be more than a week.
111. Specifically, the DCM will ensure that qualitative and quantitative supervision of works and procurement of equipment are in place while observing and being compliant to IFAD's and GoTG procurement rules and regulations. All payments submitted by the supervising consultant will be effected only upon receipt of an assurance of payment certificates verified and cleared by the DCM. The same entity will also support in selecting appropriate vocational training institutions and ensuring that all trainings are properly offered. In addition, the DCM is responsible for instituting an exit strategy for each scheme. This include ensuring that final versions of scheme O&M manuals with as-built-drawings, are prepared before scheme commissioning. It will also verify that the WUMU's are strengthened/established by the FS&DD and supervision consultant to warrant realization of legal backing (registration) and having their bank accounts opened to allow them act as a viable irrigation operators.

²⁵ For review and clearance of FS&DD (upstream work) and thematic studies, quality control (supervision) of civil and electromechanical works (downstream work) and ensure that procured works, goods and services are of the desired quality.

112. *Mangrove and forest replantation near rice production schemes (GEF-sponsored)*. Similar to the MEMA Chosso approach, the project will improve smallholders' resilience to climate change while also rehabilitating mangroves (1,300ha) and community forests (1,400ha) around the rice production areas. For the implementation of mangrove restoration activities, a MoU will be signed with the Department of Parks and Wildlife Management (DPWM) of the Ministry of Environment, Climate Change & Natural Resources (MoECCNR). Forestry activities will be implemented by the Department of forestry, through the regional forestry offices, as well as local NGOs and community based organisations (CBOs). Proposals from NGOs and CBOs will be received, reviewed by the PSU and endorsed for implementation.
113. *Earth observation technologies*. In order to monitor land development investments, the project will train MoA's and MoFWR's staff on the use of free earth observation technologies (such as the FAO-developed Collect Earth and Earth Map)²⁶. Collect Earth is a tool that facilitates detailed data collection and assessments of land cover and land use changes using high and very high-resolution satellite data. This tool (which has been used in more than 30 countries globally) allows assessing land characteristics and dynamics in cropland, forest, water, settlement and wetland. Earth Map, based on Google's BigData, enables complex analysis such as climate risk and vulnerability assessments thanks to the use of earth observation, environmental and climate data. For implementation, a partnership between the PSU and FAO (through a letter of Intent) will be sought.

Table 3: Implementation schedule and responsibilities, resilient rice cultivation

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementer	Oversight
Planning, feasibility studies, detailed design, supervision & capacity building								
Recruitment of ITA							PSU PSU/ITA	PSC
Recruitment of DCM public entity								
Recruitment of international FS&DD, supervision and capacity building consultant								
Community consultation							ITA/Facilitators/ NAWFA	PSU
Introduce Earth Map & Collect Earth							PSU/FAO	ITA
Tidal irrigation consolidation							PSU/Consultants	ITA/DCM
New tidal irrigation								
Wet-season valley water control cascaded dykes								
Micro-catchments runoff harvesting dykes								
Causeways to access rice farms								
Strengthen WUMUs for sustainability							MoWR	
Gauging stations inventory and gap study consultancy (2020 only ToRs preparation & hire)							MoWR / supplier/ contractor	
Renovate/establish river flow and groundwater data collection networks								
On-site irrigators training on water management and O&M							PSU/Consultants	
International Technical Assistant (ITA)							PSU	PSC
Third party delegated contract management (DCM) entity							PSU	ITA
Consolidation and development of tidal irrigation and wet-season runoff control dykes								
Tidal irrigation consolidation (1,300ha)							PSU/ contractors/ suppliers/	consultants DCM/TA

²⁶ Through of a Letter of Agreement (LoA) with FAO.

New tidal irrigation (2,800ha)								
Wet-season valley water control cascaded dykes (200ha)								
20 Km causeway construction to access 800ha rice farms (200ha/5km)								
Ecosystem preservation								
Mangrove replantation							DPWM	PSU
Community agroforestry							Department of Forestry, Regional forestry offices	PSU

With regard to improving sustainability of benefits generated from investments, ownership building should will be supported by ROOTS to become an intrinsic part of all IFAD-supported activities. As recommended by the CPE, target villages groups need to be in agreement with infrastructure development priorities and the correct sequencing of activities pursued, to ensure empowerment and ownership for better sustainability. Beneficiaries will be consulted regularly so they can plan and implement oversight, replacement, repair and maintenance, and ensure that the cost is incorporated into price setting and financial calculations. An appropriate locally based agent (e.g. Extension staff, NGOs, civil society organizations) will identified to ensure these messages are internalized. In the case of more complex and costly infrastructure like dykes, the government will define the operational and maintenance arrangements. The value chain approach which is fully adopted in ROOTS going from production to markets with all relevant actors along the rice and vegetable value chains will enhance the sustainability prospects

Stakeholder Engagement, Community Sensitization and Expectation Management

114. Experience with previous IFAD and other economic and social investment projects indicate that stakeholder engagement and sensitization are of critical importance to project success. In the absence of clear communication with relevant stakeholders and appropriate sensitization of local communities, rumors, misinformation and speculation thrive, and accusations and tensions easily boil over into (violent) conflict w within and between communities. Therefore, for many of the potential environmental and social impacts, the management plans recommend the development of a stakeholder engagement plan with a clear communication strategy and the organization of community sensitization activities on a regular basis.

A stakeholder engagement plan (SEP) should include at least the following components²⁷:

- a) Principles, objectives and scope of engagement
- b) Regulations and (institutional) requirements
- c) Summary of previous stakeholder engagement activities
- d) Stakeholder mapping and analysis
- e) Strategies of engagement
- f) Key messages and communication channels
- g) Grievance mechanism (see also section 9.6 below)
- h) Resources and responsibilities
- i) Monitoring and evaluation

115. Community sensitization (i.e. awareness-raising and training) activities

²⁷ Adapted from IFC (2007) *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets* (IFC: Washington, D.C.), pp.164-168

need to be clear, timely and culturally appropriate; this means that key messages need to be communicated in a format and language that is easy to understand, preferably by someone who speaks the local language and is familiar with local customs and sensitivities, and during a time that is convenient and sufficient for all key community groups, particularly women and youth. To ensure appropriate community entry and reach target groups most effectively and efficiently, it is advisable to also involve those civil society organizations that are already active in and trusted by the selected communities.

Grievance Management

116. Whenever a project causes negative environmental or social impacts there will be grievances (complaints) from people who are affected. "Having a good overall community engagement process in place and providing access to information on a regular basis can substantially help to prevent grievances from arising in the first place, or from escalating to a level that can potentially undermine project performance²⁸. In order to reduce conflicts, a robust grievance / complaints mechanism that meets at least the following 'effectiveness' criteria should be instituted²⁹:

- a) *Legitimate*: enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes;
- b) *Accessible*: being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access;
- c) *Predictable*: providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation;
- d) *Equitable*: seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms;
- e) *Transparent*: keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake;
- f) *Rights-compatible*: ensuring that outcomes and remedies accord with internationally recognized human rights;
- g) A source of *continuous learning*: drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms;
- h) Based on *engagement and dialogue*: consulting the stakeholder groups for whose use they are intended on their design and performance, and focusing on dialogue as the means to address and resolve grievances.

117. IFAD has established a Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an independent process. Although IFAD normally addresses potential risks primarily through its enhanced QE/QA process and by means of project implementation support, it remains committed to: (i) working proactively with the affected parties to resolve

²⁸ IFC (2007) *Stakeholder Engagement*, p.69 and p.72

²⁹ Office of the High Commissioner on Human Rights (OHCHR) (2011), *UN Guiding Principles on Business and Human Rights* (OHCHR: Geneva), pp.33-34

complaints; (ii) ensuring that the complaints procedure is responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions³⁰.

118. The ROOTS Project will as much as possible utilize every available grievances redress mechanisms including: stakeholders (conflict resolution and management committees), associations (including farmers' associations/organizations) traditional/local authorities, community square engagement (consisting of representatives of men, women and social groups), community general assembly, the project PSU, etc.

³⁰ IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

Review of environmental, climate and social impacts of subprojects

Potential Impacts and Recommended Mitigation for Agri-Enterprise Projects

119. Rice and Horticulture (Vegetables) are the major value chain crops being supported by ROOTS. Their production, processing and marketing are supported by the program with additional value chains including transportation, agrochemical applications, waste conversion and reuse.

Rice Cultivation and Processing

120. Rice is fast becoming the most important staple food in The Gambian homes with its imports substantially accounting for about USD50 Million annually³¹. Rice paddies are becoming a common sight across the states of The Gambia and especially in the selected regions with floodplains and major inland valleys. Lowland rice is extensively cultivated along the tidal swamps along the river banks, which flood during the high tide in most of the regions.
121. Although wetland rice is naturally suited to the flood plains and major river valleys, Flood is the major environmental and climate impact on rice. In recent past, several rice farms have been lost to floods across the regions. In some cases, droughts and dry spells have also been responsible for additional replanting costs as the plant wilted from low water and high temperature. Both floods and dry spells effects are often aggravated by lack of agro-climatic information on key parameters including onset and cessation of the rains and duration and time of dry spells. These impacts can be mitigated through strong collaboration with the The Gambian Meteorological Agency to prepare and disseminate place-specific forecasts for farmers.
122. Rice cultivation also requires clearing of land and removal of virtually all the trees and wetland plants to provide enough sunshine for the rice paddy. Rice production may also impact on biodiversity, especially birds and rodents' population that feed on rice grain. It also leads to forest and woodland degradation through selective cutting of trees for rice parboiling by local rice processors. Rice waste, which can constitute a nuisance to the environment, has the potential of being converted into briquette for rice parboiling and household cooking and heating purposes. Local farmers that cultivate Yam and other tuber crops have also found a use for rice waste in mulching. The harvested rice stems can also be used for feeding cattle. Rice cultivation requires agrochemicals and pesticides that can easily pollute surface and ground water bodies and environment. Rice is also vulnerable to pest infestations including stem borers which may lead to considerable loss of investment if not checked on time. The planted seed is also important to the expected yield per hectare. Bad seeds can lead to substantial loss of investments. Thus seed quality control is imperative to maintain the expected return on investment.
123. Emission of greenhouse gases (especially methane) from rice paddies remains a strong impact on climate. Although GHG emissions from rice fields can be reduced by periodically draining the rice paddies, farmers need to be trained in doing this. Higher temperatures can make rice sterile with low productivity. Resource conflicts between farmers and pastoralists driven by climate change and poor land governance regimes poses significant threats to investments and human security in some of the project area. Most of the regions are tackling this by building mutual understanding and confidence between the two social groups – farmers and pastoralists. This is done through expanded community security and traditional committee that include representatives from the Farmers and Fulani pastoralists. However, mitigation measures including avoid farming on grazing routes and fencing of farms with crops that are repellent to grazing livestock are critically important.
124. Some of the recommended mitigation measures for rice farming include:

³¹ <http://thepoint.gm/africa/gambia/article/gambias-annual-rice-import-bill-stands-at-us50m>

- Encourage the farmers to take risk transfer as loss mitigation measures – encourage and assist farmers to sign on to climate risk (including flood and drought) insurance with competent Agricultural Insurance institutions.
- This will also mitigate possible losses from farm destruction occasioned by grazing livestock. A number of the projects implemented by some development partners in the regions are currently experimenting with this, but at limited scale.
- Improve collaboration with the Gambia MET agency to ensure production and dissemination (using existing extension vehicles and on smart android devices) of key agroclimatic information to farmers in local languages and at frequent intervals. The agency may be empowered through setting up at least one mini-meteorological station in each participating LGAs to improve the density of their climate stations and forecasts. Such climate station may be set-up to include flood gauge and monitoring systems in the LGAs along the river banks
- As much as is possible, discourage cultivation in areas that are very close to the major river systems to minimize overflow during normal flow seasons. Avoid deforestation and cultivation in r areas of high biodiversity/critical habitats/wetlands significance
- Improve collaboration with research institutes (such as IITA, Cereal Research Institutes, etc.) to introduce early maturing/short duration rice varieties to the farmers. This may make the peak flooding season coincides with post-harvest season rather than pre-harvest season as have witnessed in recent times
- Support for Seed lab – Equip and Strengthen seed labs to be able to carry out rigorous tests on seeds to ensure that only genuine foundation seeds are used by farmers to reduce loss or poor return on investment
- Ensure training and certification of ‘spraying gangs’ on what to apply, at what stage, and in what density, and human impacts (including need to wear protection gear) to safeguard the health of crops, soils, water and the people
- Collaborate with chemicals regulatory agencies to ensure that agrochemicals are genuine (eliminate expired and banned chemicals) and in training of spraying gangs and farmers
- Encourage the use of organic manure in farms as much as possible
- Make provision for conversion of rice wastes to briquette in all the rice processing units
- Train-of trainers (TOT) for extension workers to step down training of farmers on methods for draining rice paddies in mid-season to reduce GHG emission;
- Make provision for improved modern bird scaring-equipment on farms to reduce birds impact on rice farms and maintain avian population viability
- Synchronized production timing for efficiency in bird management
- Improve community and neighborhood security arrangements by supporting dialogue and understanding between farmers and pastoralists to reduce resource conflicts
- Avoid farming along recognized grazing routes and demarcated grazing reserves
- Promote efficient land management as adaptation - Collaborate with other organizations such as USAID, FAO and government committees on Land Reform to support policy dialogue with the Regional Governments and processes to improve on land governance by instituting land regimes that ensures efficient land management and administration with agricultural land cadastration and security of tenure and ensure land capitalism through a systematic land titling and registration process.

Potential Impacts and Recommended Mitigation for (Market) Infrastructure Projects

140. The following are some of the (market) infrastructure projects likely to be embarked upon by the project;

1. Construction and rehabilitation of causeways and spillways
2. Construction and rehabilitation of causeways and spillways
2. Construction and rehabilitation of culverts and roads
3. Construction and rehabilitation of processing facilities
4. Land development activities
5. Construction of small scale (earthen) dams and irrigation schemes

Some of the potential impacts of market infrastructure development include:

Land Access

125. Market infrastructure will require the availability of land resource for their provision. The arrangement made for land will go a long way in determining sustainability of market infrastructure. Land development, irrigation activities and road construction all require large expanse of land. In total about: 4 processing facilities are expected to be constructed, 4 market/commodity stores/village bulking centers constructed, 5120ha irrigated farmlands rehabilitated or constructed to support during the dry season food production. Some preconditions for market infrastructure include assurance that government or the community has guaranteed the lease of land to the beneficiaries during the program life, and the development of strategies for the maintenance and sustainability of the infrastructure by the concerned parties.

Dust, Vibration and Noise

126. The degree to which individuals perceive dust to be a nuisance depends on the frequency, intensity and duration of a dust-generating event. Farmers usually engage in a variety of activities that uses equipment or practices that create dust. Most land clearing equipment generates some dust. Dust may also be generated as fugitive dust when fine particulates are lifted from fields, roads, buildings and yards via air turbulence. The main mitigation measures recommended for mitigating dust including dust protection masks for machine operators and the spraying of water to reduce the level of dust during construction and/or transport activities.

127. Heavy equipment used for road construction create ground movement such that cracks can occur in adjacent buildings. These can also create some form of discomfort to inhabitants of the surroundings. An assessment of surrounding buildings would be carried out to ascertain the level of susceptibility to cracks because of ground movement. The buildings are to be strengthened and compensation paid for damages where it is unavoidable. Noise from the use of equipment is also a major concern. Operators should only use construction equipment that produces a moderate decibel level and consider the times when people will experience less discomfort (i.e. day-time only). Road construction and rehabilitation contractors will be expected to produce Environmental and social Management Plans for road construction and conduct environmental screening for the construction of farm tracks.

Deforestation

128. The removal of vegetation cover and trees during construction can lead to deforestation, and should therefore be avoided as much as possible. Where tree removal is unavoidable, this should be compensated by tree and vegetation replanting along the constructed roads. Trees removed from farm during land preparations should be compensated by planting trees in addition to hedges along the farm boundaries.

Surface and Ground Water Contamination

129. Unchecked and unmonitored surface and underground exploration,

for example during dams' construction, can lead to ground water contamination. Appropriate impact studies/assessments should be conducted prior to the construction of dams and irrigation structures.

Flooding/ Erosion

130. Flooding and erosion can occur because of poor judgment and poor design and construction practices. This is very evident during the stakeholders' discussion for this ESMF. Adequate drainage should be provided for surface water run-off in all the roads to be constructed or rehabilitated. Geotextiles and Vegetation cover should be provided for slopes and indigenous grasses and shrubs with proven ability to stop erosion (e.g. Mahukachi) should be planted in areas undergoing erosion. Unnecessary dug- outs and/or excavation of soil from its natural terrain should be avoided to reduce flooding. Replacement of dug out soils should be carried out when necessary.

Environmental and Socio-Economic Management Framework (ESMF)

131. Table 7.1 provides a framework for managing the likely impacts of the various activities expected to be implemented during the key parts in the agricultural value chain, i.e. production, processing, marketing, transport (and supply). It is important to emphasize that these management plans are relevant to the entire ROOTS project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known.

Table 7.1 Environmental and Social Management Framework (ESMF) for ROOTS Agricultural Value Chain Stages

Part in value chain	Key issue affectin	Potential impact		Economic	Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional			
<i>Production</i>	<input type="checkbox"/> Land preparation – land clearing, cultivation and other issues <input type="checkbox"/> Use of earth-moving machines , e.g. tractors for clearing <input type="checkbox"/> Use of agro-chemicals <input type="checkbox"/> Use of pesticides	<input type="checkbox"/> Forest and Woodland loss <input type="checkbox"/> Land & soil degradation <input type="checkbox"/> Water and soil pollution <input type="checkbox"/> Flooding <input type="checkbox"/> Erosion <input type="checkbox"/> Bush fire <input type="checkbox"/> Biodiversity loss <input type="checkbox"/> Waste management issues <input type="checkbox"/> GHG emission	<input type="checkbox"/> Increased youth, women and men employment directly and indirectly <input type="checkbox"/> Increased sense of pride and responsibility by participating youth and women <input type="checkbox"/> Resource conflicts <input type="checkbox"/> Possible agitation from youth not presently included in the programme <input type="checkbox"/> Social exclusion - women and youth and PLWD <input type="checkbox"/> Use of child	<ul style="list-style-type: none"> Increased household income and reduced poverty <input type="checkbox"/> Increased youth employment and social well-being <input type="checkbox"/> Improved nutrition and food security <input type="checkbox"/> Increased ability of women and youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development <input type="checkbox"/> Increased import substitution especially of rice <input type="checkbox"/> But increasing associated environmental and social costs	<input type="checkbox"/> As much as possible, discourage the opening of virgin forests <input type="checkbox"/> Train farmers in sustainable land management practices and agrochemical management <input type="checkbox"/> Deliver training and agricultural inputs to farmers on-time to enable them to adjust and adapt their planting and harvesting methods and timing <input type="checkbox"/> Adopt and enforce health, safety and environment rules at production sites <input type="checkbox"/> Encourage full exploration of the value chain including soil testing and agrochemical services <input type="checkbox"/> Develop a clear and simple Stakeholder	<input type="checkbox"/> Number of farmers that received training on sustainable land preparation <input type="checkbox"/> Change in forests area <input type="checkbox"/> Results from periodic soil and water analysis <input type="checkbox"/> Health, safety and environment manual <input type="checkbox"/> Number of value chain enterprises around soil testing and agrochemicals management <input type="checkbox"/> Stakeholder Engagement Plan <input type="checkbox"/> Conflict resolution committee meetings

Part in value chain	Key issue affecting	Potential impact			Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional	Economic		
Processing	<input type="checkbox"/> Use of processing machine Parboiling of Rice	<input type="checkbox"/> Waste generation <input type="checkbox"/> Air, water and land pollution <input type="checkbox"/> GHG emission from machines <ul style="list-style-type: none"> • Use of wood for heating/parboiling 	<input type="checkbox"/> Unsafe and non-healthy working conditions <input type="checkbox"/> Possible use of child Labourers <ul style="list-style-type: none"> • Migration influx to processing sites 	<input type="checkbox"/> Increased sales and household income <input type="checkbox"/> Increased youth employment and social well-being <input type="checkbox"/> Improved processing capacity, value additions and value chain development <input type="checkbox"/> Improved nutrition and food security <input type="checkbox"/> Increased ability of youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development <input type="checkbox"/> Increased import substitution of Rice <input type="checkbox"/> But increasing associated environmental and social costs	<input type="checkbox"/> Encourage the use of renewable and low-carbon energy sources during processing operations <input type="checkbox"/> Adopt health, safety and environment rules at processing sites <input type="checkbox"/> Train farmers in sustainable agro-processing practices to reduce environmental impacts <input type="checkbox"/> Step up knowledge management and information dissemination to showcase the achievement of the project	<input type="checkbox"/> Number of operators adopting renewable low carbon technologies <input type="checkbox"/> Number of enterprises established focusing on processing <input type="checkbox"/> Number of entrepreneurs adopting sustainable processing operations <input type="checkbox"/> Knowledge management /communication plans, stakeholder meeting reports, communication project flyers/leaflets

Part in value chain	Key issue affectin	Potential impact			Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional	Economic		
Marketing	<input type="checkbox"/> Construction of market infrastructure	<input type="checkbox"/> Dust, smoke, noise, ground movement / vibration <input type="checkbox"/> Deforestation <input type="checkbox"/> Water pollution <input type="checkbox"/> Flooding and erosion from poorly constructed culverts, roads, etc.	<input type="checkbox"/> Better access to market <input type="checkbox"/> Better access to production and processing sites by supervisory agencies <input type="checkbox"/> Improved access to rural communities <input type="checkbox"/> Conflict over land and demand for compensation where infrastructure is to be constructed	<input type="checkbox"/> Improved market penetration <input type="checkbox"/> Access to market information and market linkage and support services <input type="checkbox"/> Strengthened market value chain, with more profitable enterprises <input type="checkbox"/> Improved storage and reduced waste and postharvest losses	<input type="checkbox"/> Use construction equipment with moderate decibel during construction <input type="checkbox"/> Develop/adopt and enforce health, safety and environment rules at construction sites <input type="checkbox"/> Lawful and willing consent of community/or individuals on land site for market infrastructure <p>Roads must be constructed with drainages</p> <p>Develop contingency plans for dykes/spillways to manage unexpected circumstances.</p> <ul style="list-style-type: none"> • 	<input type="checkbox"/> Observation of construction equipment for dust, noise, smoke, vibration, etc. <input type="checkbox"/> Work inspection report on the environmental quality of market infrastructure <input type="checkbox"/> Health, safety and environment plans <input type="checkbox"/> Copy of consent of community /individuals on market infrastructure land site

Part in value chain	Key issue affectin	Potential impact		Economic	Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional			
<i>Transportation</i>	<input type="checkbox"/> Use of motorized and heavy transportation machines	<input type="checkbox"/> GHG emission from transportation	<input type="checkbox"/> Influx of rural Migrant workers to agri-enterprise sites and processing areas <input type="checkbox"/> Increased number of service	<input type="checkbox"/> Increased ownership of motorized and other transport system <input type="checkbox"/> Increased number of service providers <input type="checkbox"/> Increased GDP <input type="checkbox"/> But increasing associated environmental and	<input type="checkbox"/> Organize transport entrepreneurs into an association for easy management <input type="checkbox"/> Develop a code of conduct, and health, safety and environment regulation for transport operators	<input type="checkbox"/> Code of conduct for transport operators <input type="checkbox"/> Minutes of meetings of transport operators' association

Analysis of Alternatives

132. The traditional approach to Rice and Horticulture (Vegetables) in The Gambia is to reuse inputs and make use of available cultivar with little concern for quality control. Based on the analysis of the approach thus far, the outcome has been to focus on high-yielding varieties. Farmers will be encouraged to abandon the predominant agronomic practices to improved, efficient and climate-smart agronomic practices as enumerated on Table 7.2.

Commodity Value chain	Predominant Practice	Climate Smart Agriculture practices
Rice	<ul style="list-style-type: none"> • Recycling of paddy and use of untested seeds • Wrong application of soil amendments and agrochemicals • Use of low yield and long gestation varieties • Fertilizer spreading • Tillage operations remove all trees • Use of inorganic crop protection chemicals • No risk transfer measures to mitigate losses • No draining at mid-season increases methane emission • Farming activities not guided by agro-climatic information • Waste poorly managed and constitute nuisance • Wood for parboiling causing woodland and forest degradation • Limited to rainy season farming • Use wood for parboiling 	<ul style="list-style-type: none"> • Encourage paddy transplanting and tested seeds from certified seed producers/suppliers • Encourage soil sample analysis for appropriate agrochemical applications • Train and certify spraying gangs • Encourage the adoption of improved, pest resistant and early maturing varieties • Encourage deep application of urea at 6cm-10cm depth • Encourage minimum or zero tillage • Encourage the use of organic crop protection solutions like Neem oil • Encourage carbon sequestration activities • Fence farms with hedges and trees to reduce animal intrusions • Encourage farmers to sign-on to agric insurance for no greats and risk transfer • Strengthen collaboration to ensure Farming activities is guided by agro-climatic information for better timing • Train farmers to drain paddies at mid-season to reduce methane emission • Value chain to be created for waste conversion to briquette • Parboiling to be done with briquettes and other alternative efficient energy sources • Construct small dams and

		<p>irrigation scheme for dry season farming</p> <ul style="list-style-type: none"> • Train farmers on construction of water harvesting structure to retain water for dry season farming • Encourage farmers to use briquettes and clean cooking stoves
Vegetables	<ul style="list-style-type: none"> • Use of spent and low quality stems • Wrong application of soil amendments and agrochemicals • Use of low-yield varieties and long gestation • Fertilizer spreading • Tillage operations remove all trees • Use of inorganic crop protection chemicals • Waste poorly managed and constitute nuisance in environment • No risk transfer mechanism • Production activities not guided by agroclimatic information • Trees and woods on land totally removed • Poor application of technology for erosion and flooding control 	<ul style="list-style-type: none"> • Encourage outgrower schemes • Encourage soil sample analysis • Encourage the adoption of improved varieties • Encourage ring application at 6cm-10cm depth • Encourage minimum or zero tillage • the use of organic crop protection solutions like neem oil • Encourage carbon sequestration activities • Value chain to be created around waste conversion to animal feed • Waste water to be properly channeled from to reduce odour • Farmers to be encourage to sign on to agric insurance for no regrets and risk transfer mechanism • Strengthen collaboration to ensure Farming activities is guided by agro-climatic information for better timing • Encourage agroforestry to maintain tree on farms, and replant trees along farm borders • Adopt techniques including terracing, bunding and contouring to control erosion and flooding in inland areas

ENVIRONMENTAL AND SOCIAL SCREENING OF SUB-PROJECTS

Screening and Review

133. The Environment and Social Risk Category of ROOTS is 'B' which means that 'some adverse impacts can be readily remedied by appropriate preventive actions and/or mitigation³². However, to remain a 'B' Category Project serious attention has to be paid to land development (because of its huge potential for deforestation and its secondary effects), and development of market infrastructure including construction of feeder roads and small dams and irrigation development. Loss of investments to floods is also very high across the regions. By far the most important social risk is the resource-induced clashes between farmers and pastoralists. All the project areas have the potential of being impacted by this risk.
134. During implementation, it is essential that all sub-project proposals be screened, first on eligibility on the basis of the 'letter of interest' / application form (see Annex 1), and secondly on the basis of environmental, climate and social impacts using the more detailed screening forms (see Annex 2). Project Screening for Environmental Impacts will ensure that sub-projects with high and irreversible impacts on the environment or people that cannot be readily mitigated are not eligible for support by ROOTS. It is very important to ensure that before land is developed for any cluster or farmer organization, they should take the responsibility of planting trees at the perimeter of the land area and nurturing them.
135. Sub-project proposals with medium (manageable) environmental and social impacts should include the following basic elements in the application and contain in the project-specific ESMP:
- a. A summary and description of the possible adverse effects that specific sub-project activities may occur;
 - b. A description of any planned measures to avoid or mitigate adverse impacts, and how and when they will be implemented;
 - c. A system for monitoring the environmental and social effects of the project;
 - d. A description of who will be responsible for implementing and monitoring the mitigation measures; and
 - e. A cost estimate of the mitigation measures, which should be included in the sub-project proposal.
136. The scope of any environmental and/or social review and related mitigation measures will be determined by the relevant (environmental/climate change) PSU staff in consultation with technical experts where needed, via the sub-project screening and approval process. Sub-project proposals with only minor or no adverse impacts do not need a separate review (or ESMP).

Screening for Eligibility

137. The ROOTS PDR provides a detailed description of the targeting and selection process for beneficiaries. Annex 1 provides the proposed format for the letter of interest / application form, which should be completed by each intended beneficiary and will be used as the primary tool for screening for eligibility.

³² Source: IFAD (2016) Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) (IFAD: Rome), p.18

Screening for Environmental and Social Impacts and Climate Impacts

138. Based on relevant SECAP guidelines, two separate environmental and social screening forms have been developed: for agri-enterprise (Annex 2) and related (market) infrastructure subprojects (Annex 3), and climate screening form for sub-projects (Annex 4). The intended beneficiaries are only required to complete the intention/application form in Annex 1 while the screening is done using the form in Annex 2, 3 and 4 by the PSU Environmental/Climate Change Officer (assisted by any Service Provider for that purpose).

139. Annex 5 provides an environmental and social guideline for contractors especially those handling the construction of market infrastructure such as the construction /rehabilitation of market-connected rural feeder roads, irrigation facilities, dam's construction, production platforms, etc. Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design. The guidelines include the site selection, prohibitions, construction management measures, safety during construction, community relations, chance finds procedures and environmental supervision during construction.

Impact Significance Rating

140. In order to determine the significance of impacts, the likelihood of an impact occurring is considered against the consequence or magnitude of the impact if it was to occur. Likelihood is defined as the frequency of an impact occurring.

Table 8.1 Definitions of Consequence

Consequence	Definition
No Impact / No change	No impacts on biophysical and social environments / livelihood / health / gender No public concerns No legal issues
Negligible	Low/minor impact on environment / livelihood / health / gender Minor social impacts No legal issues
Intermediate	Some level of impact on environment / livelihood / health / gender Social issues apparent May have legal implications
Severe	High level impacts on environment / livelihood / health / gender High public concerns or perceptions Legal non-compliance
Unknown	Extent of the impact cannot be determined at this point Apply precautionary principle

141. Projects that have low significance impacts may not require a new ESMP; in that case the standard ESMP and ESMF in this report will suffice. In the case of project with medium significance, the development of appropriate plans, in addition to the standard ESMP and ESMF may suffice to manage the severity of the impacts. In the case of projects with impacts of high significance, a separate ESIA is almost always required.

MONITORING OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS

Introduction

142. The overall objective of environmental and social monitoring is to ensure that recommended mitigation measures are incorporated, and that activities carried out during sensitization (i.e. training and awareness-raising) and infrastructure construction/maintenance are environmentally and socially acceptable, and therefore sustainable.

Key Performance Indicators

143. The key impact indicators for ROOTS are that:

- Estimated corresponding total number of household members - C.I. 1.b
- Corresponding number of households reached - C.I. 1.a
- Persons receiving services promoted or supported by the project (out of which 10% will be people with disabilities) - C.I. 1
- Number of people with greater resilience including people with Disabilities
- Households reporting an improved access to markets and a 30% income increase (percentage) - C.I. 1.2.2

144. The key monitoring indicators/variables from the ROOTS logframe include:

- Number of persons/households reporting adoption of new/improved inputs, technologies or practices - C.I. 1.1.2
- Number of hectares of farmland under water-related infrastructure constructed/rehabilitated
- Number of upgraded women-led vegetable gardens
- Number of integrated market-oriented vegetable garden financed through matching grants
- Number of persons trained in production practices and/or technologies - C.I. 1.1.4
- Number of rural producers accessing production inputs - C.I. 1.1.3
- Number of Jobs created (100% youth-led agricultural service businesses) - C.I. 2.2.1
- Number of financial service providers supported in delivering outreach strategies, financial products and services to rural areas - C.I. 1.1.6
- Number of farmers' organizations engaged in formal partnerships/ agreements or contracts with public or private entities - C.I. 2.2.3
- Number of effective agricultural value chain interaction platforms (AVIP)
- Number of rural farmers' organizations supported - C.I. 2.1.3
- Number of 4P businesses supported
- Number of market, r or storage facilities constructed or rehabilitated - C.I. 2.1.6
- Number of agribusiness policy-dialogue (meetings, roundtables) between public, private and producers' stakeholders conducted

145. Various project impacts and aspects relate to these overall performance targets. When the activities and indicators are established, baseline data needs to be collected to serve as a benchmark and against which changes in the identified indicators can be measured. The types of parameters that can be monitored may include mitigation measures or design features, or actual impacts. In some cases, such as drainage structures and soil conservation interventions, monitoring is fairly straightforward and can be done as part of routine or periodic maintenance. However, other parameters, particularly those related to social, ecological and climate change issues can only be effectively assessed over a period of 2 to 3 years.

146. The monitoring plan in Table 9.1 lists the parameters to be monitored, activity that will generate the parameters, monitoring indicator, and responsibility, monitoring means, frequency and the estimated cost.

- Eligibility Screening Form

ROOTS PROJECT

**Letter of Interest (Eligibility Screening Form)
Please complete all the required spaces in this form**

1. Name: Surname -----Other Names:-----
-----Maiden name (for married women):-----

2. Sex: (a) Male { } (b) Female { }
3. Date of birth: -----
4. Highest Education Level: (a) No formal education { } (b) Primary School { } (c)
Secondary School { } (d) Vocational school (e) Tertiary Education { }
5. Which community do you belong to: -----
6. How long have you lived in this community: -----

7. How do you belong to this community: (a) by birth { } (b) by marriage { } (c) other
(specify):-----

8. Local Government Area (LGA): ----- State: -----

9. What enterprise are you interested in (see list of selected enterprises for the LGA): -----

10. Do you have any experience in this enterprise: (a) Yes { } (b) No { }. If yes, how
many years: -----
11. Do you belong to any youth or women organization: (a) Yes { } (b) No { }. If yes,
what is the name: -----

12. Do you belong to any cooperative society: (a) Yes { } (b) No { }. If yes, what is the
name: -----

13. Do you have access to any land for the enterprise: (a) Yes { } (b) No { }.
14. If yes to question 13, where is the land located-----
-----; and what is the area size of the land? -----

15. What kind of title to you have to the land: (a) Government paper { } (b) Inheritance from parent { } (c) husband or wife's consent { } (d) family allocation { } (e) community's allocation { } (f) Others (specify):-----

Endorsements:

Applicant: I certify that the information provided here is correct

Name: -----

Signature: -----

Date: -----

Community/traditional leader:

Name: -----

Sign: -----

Date: -----

Verifications:

Comments by the Local Government Liaison Office:-----

Name of Officer: -----

Designation: -----

Sign and date: -----

Comments by the RCU Office:-----

Name of Officer: -----

Designation: -----

Sign and date: -----

Screening:

Comments by service providers:-----

-----Categorical

comments (a) Applicant Eligible { } (b) Applicant Ineligible { }

A: Screening Form for Agri-Enterprise Projects

General Information

Project Name:	
Name of incubator / applicant:	
Name of Cooperative:	
Contact person's details:	
Name of Apex Group:	
Contact person's details:	
Project Location:	
Project sector (e.g. rice farming, vegetable processing, etc.)	
Estimated Cost:	
Proposed Date of Commencement:	
Expected Project duration:	
Site (estimated area in ha):	
Any equity/contribution brought into the project:	
Any plan for new construction:	

A1. Screening for Environmental and Social Issues

Question	Yes	No	Additional explanation of 'Yes' response
39. Will the sub-project develop any wetlands?			
40. Would the sub-project result in economic displacement ³³ (loss of assets or access to resources) or physical resettlement		No	In case it may occur, less than 20 people but initially no economic displacement planned
41. Would the sub-project result in conversion and/or loss of physical cultural resources?			
42. Will the sub-project have significant social adverse impacts (affecting access to and/use rights to land, access to potable water and water for other uses) on local communities or other project-affected parties?			
43. Will the project trigger unsustainable natural resource management practices (fisheries, forestry, livestock, and significant increase in use of agrochemicals) that exceed the carrying capacity?			
44. Does the sub-project include conversion of significant areas (above 50 ha) of natural forests/other wild lands?			
45. Would the project potentially cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. habitat loss, erosion/ other form of land degradation, fragmentation, hydrological			

³³ Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (see SECAP Procedure Guidance Statement 13)

Question	Yes	No	Additional explanation of 'Yes' response
changes)?			
46. Does the proposed project target area include ecologically sensitive areas ³⁴ ; areas of global significance for biodiversity conservation and/or biodiversity-rich area; habitats depended on by endangered species?			
47. Does the project involve fisheries development in situations where little information exists on sustainable yield?			
48. Could the project pose a risk of introducing invasive alien species?			
49. Does the project involve the transfer, handling or use of genetically modified organisms/living modified organisms that may have an adverse effect on threatened biodiversity?			
50. Is the project site close to any oil and gas installation such as flow stations, oil terminal, oil or gas pipeline right of way?			
51. Has oil spill/ or pipeline fire ever been recorded around project site?			
52. Does the project involve land use changes (agricultural intensification and/or expansion of the cropping area) and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods?			
53. Will the project result in increased use of agrochemicals which may affect the natural environment/human health?			
54. Does the project include small-scale irrigation and drainage projects, and water impoundment including small dams (except in wetlands)?			
55. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas?			
56. Do the project activities include rangeland and livestock development?			
57. Does the project involve artisanal fisheries where there is information on sustainable yield?			
58. Do the project activities include aquaculture and/or mariculture?			
59. Do the project activities include watershed management or rehabilitation?			
60. Does the project include large-scale soil and water conservation measures?			
61. Does the project include small and micro enterprise development sub-projects?			
62. Does the project involve credit operations through financial service providers, including credit for pesticide/other agrochemicals, livestock purchasing, irrigation, etc.?			
63. Do the project activities include natural resources-based value chain development?			
64. Would any of the project activities have minor adverse impacts on physical cultural resources?			
65. Would the project have low probability to have physical resettlement or economic displacement?			
66. Does the project include development of agro-processing facilities?			
67. Will the project require a migrant workforce during construction?			
68. Will the project require seasonal workers to plant and/or harvest produce?			
69. Will the construction or operation of the project cause an increase in			

³⁴ 'Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

Question	Yes	No	Additional explanation of 'Yes' response
traffic on rural roads?			

Guidance for sub-project categorization

"Yes" response to any of questions 1-13	Sub-project Environmental and social category is A	ESIA is required for subproject
"Yes" response to questions 14-31	Sub-project Environmental and social category is B	Sub-project to adopt the ESMP in the general ESMF
"No" response to almost all questions	Subproject Environmental and social category is C	No further analysis is required

B: Screening Form for (Market) Infrastructure Sub-Projects

Name of market infrastructure:	
Infrastructure type:	
Location:	
Proposed Date of Commencement:	
Expected Project duration:	
Estimated cost:	
Estimate number of communities to be served:	
Estimated number of entrepreneur to be served:	

B1: Screening for (Market) Infrastructure Sub-projects

Question	Yes	No
1. Will the project activities include construction/rehabilitation of rural roads or other rural infrastructure in protected/sensitive areas ³⁵ ?		all road lengths < 10 km
2. Does the project include construction of roads or other infrastructure that entail the total area being cleared of 50 ha or above?		
3. Does the project include construction of dam (s)/reservoir (between 5-15 m high with a reservoir exceeding 2 million m ³)?		
4. Does the project involve large-scale irrigation schemes rehabilitation/ development (above 100 ha)?		
5. Does the project involve significant extraction of ground water (significantly above recharge capacity)?		
6. Does the project include water-based (ground or surface) development where it is believed that significant depletion due to climate change or overutilization has occurred?		
7. Does the project involve significant extraction, diversion or containment of surface water?		

³⁵ 'Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

8. Does the project include drainage or correction of natural water bodies (e.g. river draining)?		
9. Will the project include construction/rehabilitation of rural roads that pass through oil infrastructure locations such as flow stations, tank farms or oil and gas pipelines?		
10. Would any of the project activities have minor adverse impacts on physical cultural resources?		
11. Does the project include development of agro-processing facilities?		
12. Will the project require a migrant workforce during construction?		
13. Will the construction or operation of the project cause an increase in traffic on rural roads?		
14. Has the government or community guaranteed the lease of the land for the (market) infrastructure?		
15. Is there any plan in place for sustainability of the infrastructure during the project life time?		
16. Does the project include specific measures to protect against dust (such as dust masks and water spraying)?		
17. Has arrangement been made to pay adequate compensation for private property that may be affected by the construction of the project?		
18. Will construction equipment with moderate decibels be used and the timing of use be so that people will experience less discomfort?		
19. Will tree and vegetation replanting be carried out to stabilize slopes and re-green road sides?		

Guidance for categorization

"Yes" response to any of questions 1-9	Environmental and social category is A	ESIA is required
"Yes" response to questions 10-13	Environmental and social category is B	Sub-project to adopt the general ESMP in the ESMF
"No" response to almost all questions 1-13 and 'Yes' to questions 14-19	Environmental and social category is C	No further analysis is required

C: Climate Screening Form for Sub-Projects

To be used with the environmental and social screening forms.

Screening for Climate Issues

Question	Yes	No	Additional Explanation of 'Yes' response*
1. Is the project area subject to extreme climatic events such as flooding, drought, tropical storms, or heat waves?			
2. Do climate scenarios for the project area foresee changes in temperature, rainfall or extreme weather that will adversely affect the project impact, sustainability or cost over its lifetime?			
3. Will the project make investments in low-lying coastal areas/ zones exposed to river flooding and coastal storm surge?			
4. Will the project promote agricultural activity in marginal and/or highly degraded areas that have increased sensitivity to climatic events (such as on hillsides, deforested slopes or floodplains)?			
5. Is the project located in areas where rural development projects have experienced significant weather- related losses and damages in the past?			
6. Will the project develop/ install infrastructure in areas with a track record of extreme weather events?			

7. Is the project target group entirely dependent on natural resources (such as seasonal crops, rain-fed agricultural plots, and migratory fish stocks) that have been affected by in the last decade by climate trends or specific climatic events?			
8. Will climate variability likely affect agricultural productivity (crops/ livestock/fisheries) or the associated incidence of pests and diseases for the project target groups?			
9. Would weather-related risks or climatic extremes likely adversely impact upon key stages of identified value chains in the project (from production to markets)?			
10. Is the project investing in climate-sensitive livelihoods that are diversified?			
11. Is the project investing in infrastructure that is exposed to infrequent extreme weather events?			
12. Is the project investing in institutional development and capacity building for rural institutions (such as farmer groups, cooperatives) in climatically heterogeneous areas?			
13. Does the project have the potential to become more resilient through the adoption green technologies at a reasonable cost?			
14. Does the project intervention have opportunities to strengthen indigenous climate risk management capabilities?			
15. Does the project have opportunities to integrate climate resilience aspects through policy dialogue to improve agricultural sector strategies/policies?			
16. Does the project have potential to integrate climate resilience measures without extensive additional costs (e.g. improved crop variety, capacity building; or including climate risk issues in policy processes)			
17. Based on the information available would the project benefit from a more thorough climate risk and vulnerability analysis to identify additional complementary investment actions to manage climate risks?			

Guidance for categorization

"Yes" response to any of questions 1-9	Sub-project risk is High	Climate	Climate risk Analysis is required for sub-project
"No" response to almost all questions	Sub-project risk is moderate	climate	Sub-project to adopt the ESMP in the general ESMF

Annex 3 - Environmental and Social Guidelines for contractors³⁶
(for reference in contractor agreements/contracts)

147. Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design including the following:

Site Selection

148. Sites should be chosen based on community needs for additional projects, with specific lots chosen based on geographic and topographic characteristics. The site selection process involves site visits and studies to analyze: (i) the site's, sub-urban, or rural characteristics; (ii) national, regional, or municipal regulations affecting the proposed sites; (iii) accessibility and distance from inhabited areas; (iv) land ownership, including verification of absence of squatters and/or other potential legal problems with land acquisition; (v) determination of site vulnerability to natural hazards, (i.e. intensity and frequency of floods, landslides, etc.); (vi) suitability of soils and sub-soils for construction; (vii) site contamination; (viii) flora and fauna characteristics; (ix) presence or absence of natural habitats and/or ecologically important habitats on site or in vicinity (e.g. forests, wetlands, rare or endangered species); and (ix) historic and community characteristics.

149. The rules (including specific prohibitions and construction management measures) should be incorporated into all relevant bidding documents, contracts, and work orders.

Prohibitions

The following activities are prohibited on or near the project site:

- Cutting of trees for any reason outside the approved construction area;
- Hunting, fishing, wildlife capture, or plant collection;
- Use of unapproved toxic materials, including lead-based paints, asbestos, etc.
- Disturbance to anything with architectural or historical value;
- Building of fires;
- Use of firearms (except by authorized security guards);
- Use of alcohol by workers.
- Use of all forms of forced labor and child labor
- Unfair treatment and discrimination of workers

Construction Management Measures

150. Solid, sanitation, and hazardous wastes must be properly controlled, through the implementation of the following measures:

Waste Management:

- Minimize the production of waste that must be treated or eliminated;
- Identify and classify the type of waste generated. If hazardous wastes (including health care wastes) are generated, proper procedures must be taken regarding their storage, collection, transportation and disposal;
- Identify and demarcate disposal areas clearly indicating the specific materials that can be deposited in each;
- Control placement of all construction waste (including earth cuts) to approved disposal sites (>300 m from rivers, streams, lakes, or wetlands). All garbage, metals, used oils, and excess material generated during construction should only be disposed in authorized areas, incorporating recycling systems and the separation of materials.

Maintenance:

- Identify and demarcate equipment maintenance areas (>15m from rivers, streams, lakes or wetlands);
- Ensure that all equipment maintenance activities, including oil changes, are conducted within demarcated maintenance areas; never dispose spent oils on the ground, in water courses, drainage canals or in sewer systems;

³⁶ Adapted from Ministry of Agriculture, Irrigation and Water Development, Republic of Malawi (2015) *Environmental and Social Management Framework for Programme for Rural Irrigation Development in Malawi*, pp.76-80.

- Identify, demarcate and enforce the use of within-site access routes to limit impact on site vegetation;
- Install and maintain an adequate drainage system to prevent erosion on the site during and after construction.

Erosion Control

- Erect erosion control barriers around perimeter of cuts, disposal pits, and roadways;
- Spray water on dirt roads, cuts, fill material and stockpiled soil to reduce wind-induced erosion, as needed;
- Maintain vehicle speeds at or below 10mph within the work area, 15mph or below within 200m of the site, and abide by the relevant speed limits at all times to / from the work area.

Stockpiles and Borrow Pits

- Identify and demarcate locations for stockpiles and borrow pits, ensuring that they are 15 meters away from critical areas such as steep slopes, erosion-prone soils, and areas that drain directly into sensitive water bodies;
- Limit extraction of material to approved and demarcated borrow pits.

Site Cleanup

- Establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris.

Safety during Construction

151. The Contractor's responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all national and local safety requirements and any other measures necessary to avoid accidents, including the following:

- Carefully and clearly mark pedestrian-safe access routes;
- If school children are in the vicinity, include traffic safety personnel to direct traffic;
- Maintain supply of supplies for traffic signs (including paint, easel, sign material, etc.), road marking, and guard rails to maintain pedestrian safety during construction;
- Conduct safety training for construction workers prior to beginning work;
- Provide personal protective equipment (PPE) and clothing (such as goggles, gloves, respirators, dust masks, hard hats, steel-toed and –shanked boots, etc.) for construction workers and enforce their use;
- Post Material Safety Data Sheets for each chemical present on the worksite;
- Require that all workers read, or have read, all Material Safety Data Sheets. Clearly explain the risks to them and their partners, especially when pregnant or planning to start a family. Encourage workers to share the information with their physicians, when relevant;
- Ensure that the removal of asbestos-containing materials or other toxic substances be performed and disposed of by specially trained workers;
- During heavy rains or emergencies of any kind, apply construction safeguards guidelines;
- Brace electrical and mechanical equipment to withstand unexpected events during construction.

152. Nuisance and Dust Control

To control nuisance and dust the Contractor should:

- Maintain all construction-related traffic at or below 15 mph on streets within 200 m of the site;
- Maintain all on-site vehicle speeds at or below 10 mph;
- To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90db;
- In sensitive areas (including residential neighborhoods, health centers, schools, etc.) more strict measures may need to be implemented to prevent undesirable noise levels;
- Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elderly);
- Phase removal of vegetation to prevent large areas from becoming exposed to wind;
- Place dust screens around construction areas, paying particular attention to areas close to housing, commercial areas, and recreational areas;
- Spray water as needed on dirt roads, cut areas and soil stockpiles or fill material;
- Apply proper measures to minimize disruptions from vibration or noise coming from construction activities.

153. Community Relations

To maintain cordial community relations, the Contractor should:

- Following the country and ESMP requirements, inform the population about construction and work schedules, interruption of services, traffic detour routes, as appropriate;
- Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures;
- At least five days in advance of any service interruption (including water, electricity) the community must be advised through clearly visible posters at the project site and at central community locations;
- Where possible, particularly for tasks that can also be performed through low-skilled manual labor (such as digging of shallow trenches, etc.), make use of labor from the local community.

154. Chance Find Procedures for Culturally Significant Artifacts

In case culturally valuable materials (incl. shrines, graves, etc.) are uncovered during excavation:

- Stop work immediately following the discovery of any materials with possible archeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities;
- Protect artifacts as well as possible using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artifacts;
- Prevent and penalize any unauthorized access to the artifacts;
- Restart construction works only upon the authorization of the relevant authorities.

Environmental Supervision during Construction

155. The bidding documents should indicate how compliance with environmental rules and design specifications would be supervised, along with the penalties for non-compliance by contractors or workers. Construction supervision requires oversight of compliance with the manual and environmental specifications by the contractor or his designated environmental supervisor. Contractors are also required to comply with national and state regulations governing labour, the environment, public health and safety.

Annex 4 – Checklist for Construction Works

156. Based on the National Environmental (Construction Sector) Regulations (2011), at every construction facility the following checklist should be implemented:³⁷

- (1) Every facility shall implement programmes on best practices as set out in Schedule I of the Regulations while taking recognition of workers organizations
- (2) Every facility shall provide base for ancillary equipment and bund wall for containment of waste oil in the event of any unanticipated discharge or spillage.
- (3) Every operator of construction facility/site shall ensure:
 - (a) it has a functional, adequate and appropriate drainage system for the project;
 - (b) the separation or diversion of clean water runoff to prevent it from mixing with water containing high solid particle content;
 - (c) it minimizes the volume of water to be treated prior to release (same as storm water control system);
 - (d) the use of color coding for the drainage system such as blue for surface water drains and red for foul water drains;
 - (e) safe movement of materials and fuel to and from site;
 - (f) tanks are clearly labelled with their contents and storage capacity;
 - (g) workers are trained to carry out the outlined procedures in the Emergency Response Plan as specified in Schedule II to the Regulations;
 - (h) absorbent materials and other containment equipment (e.g. spill kits) suitable for the construction type, are available in adequate quantity on site; and
 - (i) all tanks are properly covered.
- (4) The operator shall ensure:
 - (a) high standard of housekeeping;
 - (b) that dust/particulate matter arising from loaded trucks entering or leaving the site is kept to a minimum level by the use of tarpaulin materials as cover and that water sprays or other dust suppression or collection methods are used at every dusty place where work is carried out;
 - (c) appropriate use of Personnel Protective Equipment (PPE) by all persons at construction site as in Schedule VI to the Regulations;
- (5) Every facility shall have an Emergency Response Plan in accordance with the guide template specified in Schedule II to these Regulations.

³⁷ National Environmental (Construction Sector) Regulations (2011). S.I. No.19.

Annex 5 - Social Inclusion Strategy

“In every country, certain groups (..) Confront barriers that prevent them from fully participating in their nation’s political, economic, and social life. These groups are branded by stereotypes, stigmas, and superstitions. They often live with insecurity. And such disadvantages not only preclude them from capitalizing on opportunities to lead a better life, they also rob them of dignity.”³⁸

157. Social inclusion means different things to different people. In its flagship publication on the topic, the World Bank defines social inclusion as “the process of improving the ability, opportunity, and dignity of people, disadvantaged on the basis of their identity, to take part in society.”³⁹ A strategy for social inclusion should therefore both address the above-mentioned ‘barriers’ as well as strengthen the capacities that disadvantaged groups in society require to make the most of development opportunities and realize their full potential.

158. The ROOTS will directly contribute to social inclusion by actively focusing on unemployed youth and women, which together with people with disabilities and widows remain among the most disadvantaged groups in The Gambian society.⁴⁰ Benue and Niger have at least 9 local governments located along the river Niger and Benue and this increases their vulnerability to effects from flooding. To ensure those areas are not entirely excluded from project activities and left marginalized, ROOTS is advised to develop tailor-made solutions in those locations where there is at least a commitment to safe access for the project so that youth and women in such areas will still be able to participate in different value chain components.

159. Using the World Bank’s advice to focus on three critical ‘inclusion domains’ of markets, services and spaces, ROOTS can help promote social inclusion in the project area through the following instruments and policies:

Markets (Land, Regulatory Framework)

- Negotiate with traditional authorities in local communities for long-term land access by women and youth for agri-enterprise activities;
- Negotiate with state governments to allocate larger plots of unused (but suitable) farmland and provide security of tenure for women and youth associations for agri-enterprise activities;
- Support legislative reform establishing gender parity in land ownership and inheritance;
- Closely monitor project progress, hold regular meetings with leaders/representatives of women and youth organizations to discuss project challenges, and provide additional (technical) support where needed.

160. Services (Training, Financial, Labour, ICT)

- Provide refresher, advanced and/or top-up skills training on-site for women and youth (on any relevant topic that hinders progress in their agri-enterprises) in combination with intensive mentoring support;
- Support opportunities for information sharing, whereby women and youth who are currently not part of the project can visit the agri-enterprise sites and whereby entrepreneurs can share their experiences (including reasons for failure and success);
- Negotiate with agricultural banks to provide preferential credit arrangements for high-potential women or youth agri-entrepreneurs;
- Encourage contractors / service providers to give employment preference to local community members (e.g. via ‘code of conduct’);
- Organize a ‘hackathon’ together with a technology-oriented innovation centre to develop a special app for rural youth in the project area to promote farming and facilitate market access as well as

³⁸ World Bank (2013) *Inclusion Matters: The Foundation for Shared Prosperity* (WB: Washington, D.C.), p.xv.

³⁹ Idem, p.4.

⁴⁰ Widows are often dispossessed of their late spouses’ property including land by the spouse’s kinsmen. Special consideration and protection needs to be given to this category of vulnerable people to make sure they have access to land and other productive bases.

create an online platform that allows women and youth to showcase their achievements and experiences with wider society and other relevant actors (e.g. government and donor agencies).

161. Spaces (Physical, Cultural, Social)

- Liaise with local police to ensure security in farming areas, markets and access routes;
- Organize public awareness-raising campaigns in consultation with local CSOs to promote farming, encourage inclusive community-level decision-making, prevent intra-community conflict and reduce gender-based violence;
- In general, ensure that initial screening, selection and support to project beneficiaries by community leaders and others at the grassroots level is based on merit and need rather than lingering primordial considerations;
- To prevent climate-induced exclusion, recommended climate change adaptation and mitigation measures should be given priority. Many beneficiaries may not be able to bounce back once they are affected by hydro-meteorological disasters such as flooding and erosion.

Market-oriented integrated vegetable gardens

162. Vegetable gardens have been supported in The Gambia by various development partners (IFAD, FAO, AfDB) in recent years to strengthen the resilience and nutrition of women communities/*kafos*⁴¹. In spite of some remarkable nutritional gains for beneficiary households, there are room for improvement to maximize returns to investment and in ensuring long term sustainability,. These include poorly designed and/or constructed infrastructures, the low adoption of climate-smart agriculture practices, poor infrastructure operation and maintenance (O&M) and water management practices. Specifically, additional technical considerations are :

- Land use inefficiencies (only one cropping season on only 34 percent of the developed land);
- Water use inefficiencies (e.g. incompatibility of borehole pump discharge with the storage capacity of elevated tanks, unutilized California pipe system, solar panel size incapable to drive installed pumps, improper/excessive water application with watering cans);
- High number of members per garden (on average 260 women, but sometimes as high as 500), implying very small landholdings (on average 65 m² per user), insufficient to bring meaningful economic transformation;
- Weak WUMUs, absence of by-laws and O&M as well as replacement fee collection system (including the absence of maintenance plan and system in case of major breakdowns beyond contractors/suppliers defect liability period);
- Lack of groundwater quality testing practice;
- Poor agronomic practices (i.e. little conservation agriculture such as intercropping or crop rotation), little compost use due to underutilized compost tanks; pest/disease infestation as well as the presence of monkeys and damage on fences
- Lack of flexibility (site-specific) for the vegetable garden design with no extra budget to update the design and increase the return on investment

163. Upgrading existing vegetable gardens. To capitalize on these existing investments, enhance the resilience of women *kafos* and increase their incomes, this intervention area will upgrade 40 existing vegetable gardens, following an in-depth technical assessment. Since some of the abovementioned technical limitations, such as inefficient land use and water use inefficiency, lack of groundwater quality testing and inflexibility to adjust them to site-specific situations are related to improper designs, the project will update the current typical garden design in order to address these technical barriers. Proposed modifications could include:

⁴¹ Examples of recent garden developments include: eight by FAO from 2013 to 2016, 33 by the ongoing NEMA project, as well as 20 by the ongoing World Bank-funded Gambia Commercial Agriculture Value-Chain project (GCAV).

- Improve land use efficiency by eliminating unnecessary footpaths between beds and of larger alleys, locating the solar water pumping systems and compost units outside the gardens to free more irrigable lands;
 - Improve water use efficiency with more adapted water storage tank capacity; adjust irrigation frequency and amount depending on the soil type, crop stage and climatic factors;
 - Introduce intercropping (agroforestry) drip irrigated fruit trees such as bananas, papayas, citrus fruits along on-farm roads, fences and beds (introduced and implemented through FFS, see sub-component 1.2);
 - Systematically add their nutrient- and vitamin-rich crops, such as sweet potato to boost nutrition impacts (introduced and implemented through FFS, see sub-component 1.2);
 - Introduce daycare for women farmers in similar adjacent areas.
164. The main modifications will be done gradually moving from surface irrigation to sustainable micro-irrigation,. Given that drip pipes are subject to frequent damage and hence replacement, the project will provide innovative support to local fabrication of pipes through the recycling of used
165. The ITA and DCM will also provide technical support. In addition to reviewing and clearing the modified typical design, the DCM will ensure that each garden is designed and properly supervised, an O&M manual (with as-built drawings) is prepared and WUMUs' of the women *kafo*s are capable of operating and maintaining the scheme before commissioning. The latter includes the establishment of legal backing (registration) and opening bank accounts to allow WUMUs act as viable irrigation operators. To this end, the DCM will critically oversee if WUMU's of the women *kafo* are formed, empowered and trained by the supervision consultant and contractors, volumetric-based water service fees collection systems are established, O&M and replacement fees are collected and deposited in the bank as planned and the exit strategy is in place. The ITA will dedicate 50 percent of its time to assist on the timely and quality implementation of this intervention.
166. The upgrading of existing gardens will begin with the preparation of an inventory (identification and ranking), carried out by an international consultant hired by the PSU (ToRs to be prepared by the ITA) to provide a technical support to plan/design and implement all gardens. The criteria to be considered include: (i) geographic proximity with off-takers and/or markets/*lumos*; (ii) suitable land and water availability; (iii) past extension (FFS) support; (iv) technical complexity; (v) potential for youth and women engagement; and (vi) social cohesion. The international consultant will prepare his/her work plan, the methodology to be used for the inventory, identification and prioritization (screening) of each garden and submit to the ITA for review and clearance by the PSU. To assist the mapping, the consultant will make use of the Earth Map (open source) tool developed by FAO. Subsequently, deskwork and field visits will follow to undertake the actual inventory in a manner involving beneficiary farmers, the MoA staff in the project regions and districts as assisted by the project field assistants on the ground. Once the report is ready, it will pass through a review process by the ITA/DMC for technical approval. The list of such approved gardens will be communicated to the PSC through the PSU for their review and approval.
167. FOs will be informed to submit their application field assistants (to include their simplified business plan⁴²) with evidences verifying that they meet the criterion, to the extent possible, through similar communication chain. Once these applications are reviewed by the consultant, they will be submitted to the DMC for review, who in turn (upon satisfaction) will pass them to the ITA and PSU for clearance. Then, preparation of the feasibility studies (incl. final version of the business plan) of the approved schemes

⁴² The business plan should explain how expected surplus would commercialized and how the group will manage their savings to allow for O&M and replacement.

will resume by the same consultant. Unless in the very unlikely scenario of a given screened and prioritized scheme becoming unfeasible, the consultant will proceed preparing the detailed design and bill of quantity which will be reviewed and approved following the same procedures.

168. New market oriented vegetable gardens. 30 new gardens will be established following the above-mentioned improved design features, in particular full drip irrigation. They will be financed by a dedicated matching grant window, with expected beneficiary contributions (in-cash 10 percent⁴³, from savings and facilitated access to financial services providers⁴⁴). In addition, for these new gardens, the eligibility criteria will include the lower number of participants per garden (75-125 persons) in order to reach a commercially viable area per participant (i.e. 250 to 500 m²), as well as introducing double cropping to maximize returns to investment, incomes and beneficiaries resilience. In addition, proximity to markets/*lumos* and linkages with off-takers will be prioritized in the selection process. Interested beneficiary groups will be required to prepare business plans, which will be evaluated in a review process for the matching grant window. Overall, the target group for these gardens will be more advanced producers interested in engaging in commercial vegetable production as their main activity. In addition, the new gardens will benefit from FFS support (see sub-component 1.2 – intervention area 1) to introduce nutrition-sensitive crops and climate-smart practices (full drip irrigation, intercropping, rotation, compost use, livestock husbandry/ poultry⁴⁵ etc.) while initial input provisions will have to be included in the business plan, and financed as part of the matching grant. New gardens will collaborate closely with mother clubs from the village-development committee (VDC) and *kafos* to ensure that women have a say in the choice of nutritious crops. The project will also collaborate with NAWFA (through a MoU) in order to promote access of the poor, women and youth to irrigated land.
169. *Identification of potential sites.* Before interested beneficiaries could apply for financing of a new garden. With ROOTS, the ITA will carry out a preliminary identification of potential sites (deskwork in close consultation with the MoA staff, using the appropriate maps, including the open source tools developed by FAO). Subsequently, the ITA will conduct field visits and preliminary consultation of potential beneficiaries. At this stage, the screening process will focus on (i) hydrogeological conditions (such as depth to groundwater, water quality, quantity and access); and (ii) market access conditions (distances to closest *lumos*, road conditions, proximity to consumption markets). A list of eligible sites for new gardens will be prepared by the ITA, and then reviewed and approved by the PSU.
170. *Promotion/awareness raising.* Once eligible sites have been identified and approved, the business development officer (BDO) of the PSU will work in close collaboration with the regional departments of agriculture, NACOFAG, AVIPs and NAWFA to inform the targeted communities on the matching grant financing programme for new vegetable gardens. Radio campaigns and regional meetings will be organised once a year to raise awareness of potential beneficiaries, but also to start linking them with potential commercial partners. Interested applicants will need to fill a pre-screening template and submit it to the nearest project field office. The BDO will contact eligible applicants to proceed to the preparing their business plans (within two weeks).
171. *Business plan preparation.* Given that new gardens are to be financed starting in year 3, eligible applicants will be able to tap into the national business development services (BDS) system strengthened through international technical assistance in sub-component 1.2 – intervention area 3 (see the respective section for details). Thus, the

⁴³ On average, the overall beneficiary contribution would amount to USD 13,500/GMD 675,000, which translates into roughly USD 135, which could be recovered with residual profits of 2 cycles of production (1 year).

⁴⁴ The project will assess the capacity of beneficiaries to raise the 10 percent contribution after the first round of financing and could reduce the expected contribution to 5 percent.

⁴⁵ Poultry are generally owned by women and important supplements to both household nutrition and income diversification. The approach will be based on technical assessment.

BDO will provide the applicants with a list of approved business development NGOs, companies or individual consultants (the project will finance the business plan preparation in its entirety). These service providers will support the applicants to develop their vegetable garden business plan, meeting and negotiating with equipment providers and prospective clients, and filling the required template. In addition, the ITA will support applicants by recommending consultants to prepare the FS&DD and propose the right technical solutions for the gardens, which will be included in the business plans. Overall, the business plans will need to address: (i) the optimal crop water requirements; (ii) land suitability, soils and land tenure studies; (iii) climate-smart agriculture practices; (iv) crop and field irrigation water requirements; (v) market and value chain linkage; (vi) financial returns/multiannual cash flow analysis; (vii) social cohesiveness; (viii) willingness to pay for O&M and replacement; and (ix) availability of own contribution. The BDO and the project field staff will provide continuous feedback as the business plan is prepared. Once ready (within 12 weeks), the business plan will be submitted to the nearest field project office, where staff will check the completeness of the application.

172. *Business plan review.* A Review Committee meeting will be organized once a year in Banjul to review and approve submitted business plans (sitting allowances will be provided by the project). The Committee will be chaired by the project coordinator, assisted by the BDO and ITA, and will include representatives from the MoA (2), GCCI (1) and private sector (3) (in particular MSMEs involved in horticulture and part of the 4P ecosystem promoted by the project). The project will finance the participation of a representative of each applicant group to the Committee meeting so they can directly present their business plan.
173. *Approval.* Once the Review Committee approves a business plan, the potential beneficiary group is informed about the decision (within 1 week) and is requested to provide (within 4 weeks) the proof of its 10 percent contribution in an account with a financial services provider. Following confirmation by the BDO, FS&DD (incl. bidding documents and preliminary O&M manuals) will be prepared by the PSU hired consultant and submitted to the PSU for subsequent review and clearance by the DCM as coordinated/overseen by the ITA. The DCM will institute an efficient review process to avoid time taking back-and-forth communication. Only after receipt of satisfactory technical clearance from the DCM that the PSU will grant approval/disapproval for a scheme to proceed/or not to bidding stage. To this end, it is proposed to have the same consulting firm for the typical design modification and FS&DD as well as supervision of all gardens. Unsuccessful applicants to the MG window are also informed (within 1 week) by the BDO; subject to agreement by the Review Committee, applicants with scores just below the approval threshold are invited to re-work their business plans and resubmit in subsequent rounds.
174. *Construction of all the schemes* will be undertaken by competitively selected contractors as supervised by the FS&DD consultants and overseen by the DCM. The latter will have a critical role of guiding and confirming that the bidding and procurement process are managed as stipulated in its ToRs. Specifically, it will ensure that qualitative and quantitative supervision of works and procurement of equipment are orderly while observing and being compliant to IFAD's and GoTG procurement rules and regulations. All payments submitted by the supervising consultant shall be effected only upon receipt of an assurance of payment certificates verified and cleared by the DCM entity. The DCM will also play a similar role in selecting appropriate vocational training institutions and ensuring that all applied trainings are properly offered. In addition, the DCM is responsible for instituting an exit strategy for each scheme. This includes ensuring that final versions of scheme O&M manuals (incl. as-built-drawings) are prepared before scheme commissioning and the WUMUs are strengthened/ established by the FS&DD and supervision consultant to warrant realization of legal backing (registration) and having their bank accounts opened to allow them act as a viable irrigation operators. To promote optimal irrigation water use efficiency and reduce wastage in the integrated gardens, in

addition to ensuring quality of the infrastructures, the DCM will critically oversee if water service fees collection systems are established, appropriate trainings are provided, and O&M/replacement payments are collected from and deposited by the beneficiaries based on flow measurement.

175. When it comes to the innovative support towards local fabrication of drip irrigation pipes through recycling of used pipes under the agricultural services matching grant window, the ITA will prepare (reviewed and enriched by the DCM) a call for proposal inviting qualified private entities to submit their proposal. The DCM will play a critical role in the selection, procurement and installation/implementation follow up process as coordinated by the ITA.

Table 4: Implementation schedule and responsibilities, SC1, vegetable gardens

Activity	Y 1	Y 2	Y 3	Y 4	Y 5	Y 6	Implementation	Oversight
Planning, feasibility studies, detailed design, supervision & capacity building								
Planning, studies, designs and supervision (70 gardens each 5ha), incl. Typical Design Modification							PSU/ Consultant	DCM/TA
Irrigators & WUMU's training on water management and O&M								
Technical Assistant (TA)							PSU	PSC
Third-party DCM entity							PSU	TA
Development of 80 community gardens								
Upgrading of 40 existing gardens							PSU/ contractors/ consultants / NAWFA	DCM/TA
Development of 30 new gardens								

4.1.2 Sub-component 1.2: Agricultural service provision

a. Agricultural productivity enhancement

176. To maximize the returns from the infrastructure investments and to strengthen farmer's resilience to climate change, farmers will need to substantially diversify and increase their yields. Technical assistance and skill development will be provided to farmers particularly on the optimal use of climate-smart technologies and increase household incomes. Through FAO, GoTG has recently elaborated a National Extension Policy. This policy document highlighted climate change adaptation and use of the Farmers' Field School (FFS) approach and the role of FOs in extension service including trainings. The implementation of this policy will be facilitated by the the National Extension Implementation Strategy to be developed by FAO. As the lead of the technical working group, ROOTS will play a key role in the development of extension services within The Gambia through programmatic investments in the utilization of the FFS approach, engagement of FOs and training of government field staff.

177. The extension services supported by ROOTS will respond to the specific and differing needs of farmers both in vegetables gardens and rice field . The project will opt for a phasing of field activities The preparation of staff training materials, staff training and programming must occur prior to the completion of the physical works in order to ensure extension field staff and implementation partners are ready and able to implement the FFSs as needed. The targeting activities for each production systems, are detailed below.

178. Upgraded Gardens: women *kafos* in the existing community garden sites will receive varying levels of support with regard to horticultural knowledge and skill development. However an assessment need to be carried out under sub-component 1.1 with a focus on the technical support that farmer groups receive, as well as their current production practices and challenges. The outcome of the assessment will be used to ensure to define the right extension support services and infrastructure investments. Relevant technical options that address climate change mitigation and adaptation

objectives include: (i) the use of compost; (ii) crop rotation; (iii) intercropping; and (iv) integrated pest management (IPM).

179. For remaining groups with no or limited support in the past; technical assistance will be provided through horticultural FFS. It is estimated that approximately 30 of the 40 garden sites may require support through additional horticultural FFS, each with approximately 25 members. Due to the large number of beneficiaries in the established gardens (250 individuals on average), a target of 50 per cent of the farmers through FFS has been set. It is anticipated that each garden will host one to two primary FFS led by DoA or partner field staff, and up to four secondary FFS led by farmer facilitators trained under the supervision of extension field staff. The specific content of the FFS will be locally determined based on the data collected during the initial planning
180. For FOs remaining members that are not participating in the FFS, the project will use local language to reach them in partnership with the FFS experimental plots. A series of open field days will also be organised in each location where FFS members can interacted. The FFS members will be given additional training on how to serve as a resource person and trainer for other farmers in the gardens wanting to adopt new practices, and/or who are experiencing production problems. connexions will be established between Vegetable gardens FOs, the staff of the DoA extension staff, Plant Protection Services, to facilitate a rapid assistance whenever it is needdd
181. Improved gardens will include drip irrigation technologies. The project will work with the WUMUs and farmers to assess the benefit of these new technology on the 40 new upgraded gardens. It is anticipated that each garden will host one to two primary FFS led by DoA or partner field staff, and up to four secondary FFSs led by farmer facilitators trained by and under the supervision of extension field staff.
182. New Gardens: Farmers in all of the 30 sites identified for the establishment of new, market-oriented vegetable gardens will receive technical support through drip irrigation and horticultural FFS. These gardens will include approximately 100 members each, and host at least one primary FFS on each technical theme, and up to three secondary FFS. 50% of the new gardens will include poultry facilities and farmers will be trained on poultry production (egg and/or broiler). The Department of Livestock and the Veterinary Services will be also solicited
183. Tidal Irrigated: Most of the project investment is directed on the rehabilitation of 1,300 hectares of tidal irrigation perimeters and 2,800 hectares of new construction. The project will promote sustainable rice production to reduce greenhouse gas emission (GHG) (reduced GHG per unit of rice produced). Two interventions are planned:
- i. *The first intervention will support given to setting up FFS on SRI.* The Gambia was one of the thirteen countries participating in the three-year SRI initiative of the West Africa Agricultural Productivity Programme (WAAPP) supported by the World Bank. The productivity gains realized in The Gambia netted a doubling of rice yields over conventional practices, with top achievers realizing four-fold increases in productivity. ROOTS will make use of the SRI training materials developed by Cornell University for West Africa. In addition to productivity gains, SRI also allows farmers to reduce the amount of water used, by up to 50 percent, thus reducing methane production, and fertilizer use by up to 100 percent, thus making contributions to carbon dioxide emission (CO₂) reductions.
 - ii. *The second intervention area will focus on seed supply* and includes two separate actions – the identification of which rice varieties that are most appreciated by farmers and buyers, and the multiplication and distribution of these varieties. Africa Rice has developed methodological tools. The procedures of Participatory Variety Selection for Extension (PVS/E) involves the establishment of rice gardens, with a limited number

of varieties planted at larger scale (e.g., 10m x 10m), and allowing farmers to visit the plots at key times during the growth cycle (e.g., post emergence, vegetative maturity, grain filling, and a post-harvest taste test). Once the most desired varieties are identified, Community Based Seeds System (CBSS), or quality declared seed production, will be used to support farmers in producing their own seed under the supervision of qualified seed monitors. Local production, and sale of seeds, reduces costs to ensures that the best varieties are locally available. Both procedures, PVS and CBSS, will be introduced into the project through regionally hired international technical assistance.

184. Rainfed Tidal Zone and Rainfed Lowlands: 200 hectares of lowland development and 800 hectares of rainfed tidal will be developed across 10 and 6 sites respectively. Each of the 16 sites will received rice production training. ROOTS will capitalize on the series of Participatory Learning and Action Research (PLAR) training modules development by Africa Rice targeting rainfed lowland rice production. Another tool called the PLAR tested in other countries will be also used. Implementation of the PLAR trainings will be led by the DoA VEW and District field staff. In all locations, a series of open field days will be help stimulate interest in the further dissemination of the management practices included in the FFS.

185. *FFS and nutrition.* In the case of ROOTS, the FFS will also be used for nutrition purposes. Nutrition modules in the FFS curricula will include a focus on social behavior change and the importance of consuming nutritious food. This will cover infant and young child feeding practices, the promotion of dietary diversity through vegetable gardens, cooking demonstrations with nutritious recipes and cooking practices to maintain nutrients, and hygiene and sanitation issues. Linkages will be established with the National Nutrition Agency (NaNA)⁴⁶. Where appropriate and based on evaluation/technical assessment, this may include collaboration to introduce the NaNA poultry multiplication scheme which targets vulnerable community members. Through the scheme, the community develops criteria and selects the most vulnerable, who are provided with 10 hens and 1 rooster based on an agreement to pass on to other identified vulnerable community members after six months.

186. *Preparation, Phasing and Implementation of Field Activities.* The FFSs (horticulture, drip irrigation, SRI) and extension services activities (PLAR, PVS, CBSS) are programmed to begin implementation immediately following the anticipated completion of the physical works supported under sub-component 1.1 (see Table 5).

Table 5: Phasing Plan of FFS and Extension Sites

	Y2		Y3		Y4		Y5		Y6		
	Sites	Bene- ficiaries	Sites	Bene- ficiaries	Sites	Bene- ficiaries	Sites	Bene- ficiaries	Sites	Benefici- aries	
Gardens											
	15	37500	15	37500	10	2500					250/garden;
			15	1500	15	1500					100/garden
Irrigation											
	2	1800	2	3000	2	3400					1300 ha; .5 ha/farmer; 2800 ha; .5 ha/farmer
	4		8		10						
			10		40		88		88		
	3	150	13	700	23	600	19		6		800 ha; 1 ha/farmer
	2	40	13	140	24	140	27	80	11		200 ha; .5 ha/farmer

⁴⁶ NaNA is established under the Office of the Vice President, and draws on the coordination efforts of the National Nutrition Council (inter-ministerial) and the Nutrition Technical Advisory Committee (acting as the SUN multi-stakeholder platform).

187. The FFS program will be launched when farmer have received trainings and. A highly competent international FFS Master Trainer will lead the development of the FFS programme for the gardens and SRI. He/ She will be also in charge of setting up the Master Trainer training programme, training three cohorts of Master Trainers (two horticulture and drip irrigation practices, the one on SRI) in season-long FFSs as well as overseeing the new Master Trainers as they simultaneously train the FFS horticulture and SRI facilitators. He/she will conduct two supervision missions in years 3 and 4 to review progress and provide guidance on programme improvements. FAO has recently initiated the process of establishing a West Africa sub-Regional Network of FFA expertise among Anglophone countries. This network will assist the ROOTS PSU in the identification of suitable technical assistance (i.e., Master Trainer) within the region. Similarly, international technical assistance from within the region will be mobilised to support the implementation of PLAR, PVS and CBSS practices.

Table 6: FFS Implementation Schedule

FFS Schedule	Y1	Y2	Y3	Y4	Y5	Y6	Assumption
Gardens							
Horticulture		120	368	400	60		30 upgraded gardens, two seasons, 50% target; 30 new gardens, two seasons, 70% target; 25 farmers/FFS
Drip Irrigation		120	368	400	60		30 upgraded gardens, two seasons, 50% target; 30 new gardens, two seasons, 70% target; 25 farmers/FFS
Poultry		10	10				50% of new gardens; 25 farmers/FFS
Irrigation							
SRI		102	168	190			two seasons 70% target both rehabilitated and new construction; 25 farmers/FFS
PLAR		5	26	47	46	17	two seasons 50% target rainfed tidal; two seasons 100% target rainfed lowlands; 25 farmers/FFS

188. In order to have sufficient number of trained staff and farmer facilitators in place to deliver the extension programme, careful planning and execution of a capacity-building plan will be essential (see Table 7). In addition to training Master Trainers, Facilitators and Farmer Facilitators the ROOTS project will also make investments in developing and introducing a curriculum module on FFS at the Gambia College, and the development of advanced FFS training modules for the DoA to use in pre-service and in-service training. To ensure that all current and future field staff have a good understanding of FFS principles and practice, ROOTS will support the institutionalization of the FFS approach as planned in the new National Extension Policy.

Table 7: FFS and Extension Training Plan

Capacity Development Plan	Y1	Y2	Y3	Y4	Y5	Y6	Implementer	Oversight
University FFS module	1						Technical Assistance	CPU
DoA Pre-Service/In-Service FFS Training Module	1						Technical Assistance	CPU
DoA In-Service Trainings	1	1					Technical Assistance	CPU
International Master Trainer	12 mos	6 mos	1.5 mos	1.5 mos			International Technical Assistance	CPU
DoA Master Training -- Hort/Drip	1	1					International Technical Assistance	CPU
Facilitators Training -- Hort/Drip	30	15					DoA Master Trainers	International Master Trainer + CPU
Farmer Facilitators Trained -- Hort/Drip			224	255	30		Facilitators	DoA Master Trainers + CPU
DoA Master Training -- SRI	1						International Technical Assistance	CPU
Facilitators Trained -- SRI		20					DoA Master Trainers	International Master Trainer + CPU
Farmer Facilitators Trained			34	45			Facilitators	DoA Master Trainers

-- SRI							+ CPU
Facilitators Trained -- PLAR		20				International/Regional Technical Assistance	CPU
Farmer Facilitators Trains - - PLAR		20	20	20		Facilitators	Technical Assistance + CPU
Facilitators Trains -- PVS		12				International/Regional Technical Assistance	CPU
Facilitators Trains -- CBSS		12				International/Regional Technical Assistance	CPU

189. **Implementation Arrangements:** To implement the FFS programme, ROOTS will broaden and deepen the capacity building approach initiated through the NEMA project, and other investments (e.g., FAO), of strengthening core DoA field staff. The objective is to fully embed the FFS approach within the national extension service, and strengthen the implementation capacity of key partner organizations. Specifically, a central focus will be put on training DoA extension field staff – Village Extension Workers (VEW) and District Officers – as well as training a large number of local farmer facilitators. In addition to governmental services, NAWFA, which also has experience with FFS implementation in serving its members, may become a valuable partner in the identification facilitators and farmer facilitators from among its member organizations.

190. Operationally, the Climate Smart Agriculture Senior Officer on the PSU, assisted by the Climate Change NRM Officer, will be responsible for monitoring the implementation of and providing quality assurance for the FFS and related extension programming. The selected staff will ideally come from the DoA, and will need to have the appropriate skills and experience. The activities supported by the ROOTS project that this individual will oversee include are:

- FFS curriculum development and inclusion of FFS training modules at the relevant training institutes (e.g., Gambia College, etc.);
- Development of advanced FFS training modules for use by in the DoA pre-service and in-service training and the training of all VEW and District Officers;
- Review and revision of existing and, as needed, development of new FFS training materials on horticulture production, drip irrigation, poultry production, SRI and other technical themes supported by ROOTS (PLAR, PVS, CBSS as indicated in the sections above), and their use in training field staff and farmer facilitators;
- The planning, implementation and quality assurance of all FFS and related extension field activities supported under the ROOTS project.

b. Youth-based services

191. *youth.* The project will establish a dedicated matching grant (MG) window for youth, to better facilitate access to finance for youth and women. The objectives of the MG area are twofold: (i) to ensure that trained youth interested agri-business receive the technical and financial support, and; (ii) to support agricultural services providers with additional financial resources, in particular on mechanization and farm processing equipment's. The project will finance at least 240 youth-led business ideas in partnership with financial institutions. Eligibility criteria for this MG window will focus on young women and men (under 35 years) based in rural areas (or urban and peri-urban based, but willing to relocate) and interested in starting or growing an agri-business in the areas targeted by the project. SONGHAI graduates, agri-trainees from other programmes and any other youth will be eligible to apply for financing. Small youth groups (up to 5 persons) would also be encouraged to apply, if already organized in a recognized entity (micro-enterprise, etc.).

192. ROOTS will support the youth in preparing their business plans, while ensuring continuous feedback ongoing support. Building on the NEMA experience, the process will be more simplified.
193. *Promotion/awareness raising.* There are a number of youth training entrepreneurial schemes being conducted however participants often face constraints with access to finance after the training ends. Without access to finance, it is difficult for young people to start a viable business and applied the knowledge received and new skills. The project will work in close collaboration with the regional departments of agriculture, Gambia National Youth Council, SONGHAI, EMPRETEC, MDI, GGTI, etc. to promote this MG window to interested youth via radio and face-to-face meetings in the project's targeted areas.
194. *Training support/youth incubation.* The project will collaborate with the SONGHAI Centre, given its demonstrated capacity, and partner closely with UNDP. The project will support SONGHAI to diversify its existing training curricula, by developing new modules on agriculture finance, environment and climate change, value chain development, agribusiness, digital agriculture, business plan development, food conservation and processing. ROOTS will also support the Centre to access digital technologies (as well as specialized training on their use), small processing equipment for on-site demonstrations and infrastructure to increase the Centers' hosting capacity. The project will support SONGHAI to develop partnerships with a network of private agri-food enterprises willing to contribute to internship and training and vocational education and training (TVET) programs. Starting in year 3, the project will also subsidize the placement of five graduates in newly developed market-oriented vegetable gardens to act as production, marketing and value addition advisors to the producer groups. The long-term objective is to have on-going, on-site quality support to the new gardens, who in turn could permanently employ the graduates at the end of the subsidization period. Furthermore, the project will support SONGHAI in financing and managing a reward program for its ten best students from each cohort. This program will complement young student's earnings gained in SONGHAI and support them in raising the requested equity to apply to the matching grants schemes proposed by the project.
195. *Financing conditions.* The ceiling for each investment supported by this MG will be USD 7,500⁴⁷. the award cover 95 percent of the investment, while the beneficiary will support the remaining 5 percent of the investment. This level of beneficiary contribution is supported by field discussions and the fact that the matching grant scheme under NEMA and other donor-financed projects failed to attract sufficient youth, since the beneficiary contribution was as high as 55 percent. In ROOTS, The beneficiary contribution can be provided from one own savings, or from a loan of a financial services providers or through a direct arrangement for later repayment with the equipment provider, as piloted under NEMA. The project will target 240 youth-led business.
196. *Eligibility.* This matching grant window will be focus on young women and men (under 35 years) based in rural areas (or urban and peri-urban based, but willing to relocate) and interested in starting or growing an agri-business that falls within the categories detailed in the table below and that is located in the areas targeted by the project. SONGHAI graduates, agri-trainees from other programmes (such as EMPRETEC, Management Development Institute/MDI and the Gambia Technical Training Institute/GTTI) and any other youth are eligible to apply for financing. Small youth groups (up to 5 persons, all required to meet the eligibility criteria) would also be encouraged to apply, if already organized in a registered entity (micro-enterprise, etc.).

Table 8: Business eligibility criteria

⁴⁷ GMD 500,000 (under the prevailing exchange rate at design)

Business	Eligible expenditure to be financed	Indicative share of MG window
Mechanized agriculture services	Equipment (power tiller, paddy threshers, milling equipment, etc.) combined with a tricycle for mobility	50%
Agriculture transport services	Equipment (tricycle)	20%
Maintenance of agricultural equipment	Start-up capital for tools and initial stock of spare parts (repairing/replacing solar panels, small pumps, power tiller, etc.)	10%
Agro-dealer shop	Start-up capital for initial stock	10%
ICT services and digital technologies for agriculture	Equipment and start-up capital (drones for land development monitoring and planning, development of simple apps for agriculture, 3D printing of small tools and irrigation implements, etc.)	10%

197. *financing Mechanisms.* In order to receive high quality business plans under the MG window, the project will start appraising and approving business plans in year 2. In line with the process described, each round of financing is expected to be completed within six months. This will allow the project to have two rounds of business plan approval per year in Y2-Y5, for a total of eight rounds. Each round should target 30-35 matching grants (ideally balanced in terms of gender and geography) from a pool of 60 received applications.
198. *Promotion/awareness raising.* The project will work in close collaboration with the regional departments of agriculture, the Gambia National Youth Council, SONGHAI, EMPRETEC, MDI, GTTI, etc. to promote this matching grant window to interested youth via radio and face-to-face meetings in the project's targeted areas. Month-long regional radio campaigns and regional meetings will be organized for each financing round and interested applicants will fill a pre-screening template to express their interest and articulate their ideas. Once pre-screened by the BDO or the staff of nearest project field office (within 2 weeks), eligible applicants will be contacted to proceed to the preparing their business plans.
199. *Business plan preparation.* Evidence from previous projects indicate that the business plan preparation ecosystem in the Gambia is rather weak and dominated by individual consultants. to support a high quality business plans; , the project will diversify it source of support with on top of local organisation and consultants, to recruit for a limited period of two years an international NGO to technical assistance, training and certification of local NGOs and companies and support the preparation of the business plans for the first two rounds of financing. Starting in year 3, pre-screened applicants will be financially supported by the project to prepare and submit their business plans. In parallel, SONGHAI graduates will benefit from the project's support to update curricula and develop in-house business development capabilities. Non-SONGHAI applicants will be provided with a list of approved business development NGOs, companies or individual consultants. These service providers will support the applicants to develop their business ideas, meeting and negotiating with equipment providers and prospective clients, and filling the project business plan template. The BDO and the project field staff will provide continuous feedback as the business plan is prepared. Once ready (within 6 weeks), the business plan will be submitted to the nearest field project office, where staff will check the completeness of the application. To stimulate a competitive environment capable of producing quality business propositions, as the project advances, the list of eligible BDS providers will be continuously updated to reflect the rating of each provider, based on the quality of their support and the success rate of the prepared business plans.
200. *Business plan review.* A Review Committee meeting will be organized twice a year in Banjul to review and approve submitted business plans (sitting allowances will be provided by the project). The Committee will be chaired by the project coordinator, assisted by the BDO, and will include representatives from Ministry of Agriculture (1), Ministry of Youth and Sport (1), NACOFAG (1), SONGHAI (1), GCCI (1), and private

sector (3) (in particular MSMEs supported under component 2). The project will finance the participation of each pre-screened applicant to the Committee meeting so they can directly present their business plan. Following the presentation, the Committee will evaluate behind closed doors each proposal along the criteria below:

- i. Applicant readiness (15 percent): training, previous experience in the proposed area;
- ii. Business plan quality (30 percent): identification of market needs, prospective clients, realistic targets and pricing, etc.
- iii. Projected profitability/cash flow (25 percent): each proposal would need to include a multi-annual cash flow analysis, including demonstrated savings capacity for asset replacement;
- iv. Demonstrated linkages with other project beneficiaries or activities (20 percent): provision of services to producers (rice cooperative societies, women vegetable *kafos*), links with MSMEs, government/projects, 4P engagement etc.
- v. Potential to contribute to development (10 percent): employment creation, rural development, support to production, etc.

201. *Approval.* Once the Review Committee approves a business plan, the potential beneficiary is informed about the decision (within 1 week) and is requested to provide (within 2 weeks) the proof of its 10 percent contribution in an account with a financial services provider (or proof of agreement with the equipment provider) and a proforma invoice from the equipment provider. Following confirmation by the BDO, the project releases the funds to the equipment provider, who then delivers the equipment to the beneficiary (within 1 month). Unsuccessful applicants to the MG window are also informed (within 1 week) by the BDO; subject to agreement by the Review Committee, applicants with scores just below the approval threshold are invited to re-work their business plans and resubmit in subsequent rounds.

202. *Post-investment monitoring and support.* Beneficiaries will commit to mandatory reporting after 6 and 12 months, using a simple template to be developed by the project. The BDO will be responsible for monitoring progress and provide ad hoc advice, if required. The BDO will also ensure that all beneficiaries are constantly invited to 4P related events and trainings to ensure full integration in the 4P ecosystem promoted by the project.

Table 9: Implementation schedule and responsibilities, youth-based services

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementation	Oversight
Training support/Youth incubation							SONGHAI	Project Coordinator
Promotion/awareness raising							Reg. Depts of Ag, radio, SONGHAI, EMPRETEC, etc.	BDO
Business plan preparation							BDS providers	BDO
Business plan review and approval							Review Committee	Project Coordinator
Post-investment monitoring and support							BDO	Project Coordinator

c. Capacity development of FOs

203. The project will support farmers' organisations at the level of rice and vegetable production sites. Based on the work initiated by NEMA, the project will continue to: (i) support the organisation of women *kafos* around consolidated and new vegetable gardens; and (ii) transform Village Farmers Associations (VFA) into cooperative societies (clustering several villages) around the new/upgraded rice production schemes. A total of

70 *kafos* (40 existing and 30 new) and six cooperative societies will be established and strengthened by the project.

204. *Kafos* and cooperative societies will be assisted to develop/strengthen leadership skills, cooperative governance structures (e.g., establishment of executive committees) and financial management capacities (e.g., literacy/numeracy, record keeping etc.) Like in NEMA, women *kafos* will be supported by a service provider (e.g. the NGO United Purpose which has delivered successful results). For rice, the project will sign in year 1 a MoU with the Agribusiness Service Unit of the Department of Agriculture (DoA). The Agribusiness Service Unit will: (i) support the registration of VFA into cooperatives; (ii) help to elaborate bylaws and constitutions in line with cooperative principles; (iii) audit cooperatives, and (iv) provide capacity development on cooperative governance. DoA and the specialized service provider will be responsible for preparing AWPB and submit them to the PSU for review. After mid-term, DoA will work closely with the National Rice Farmers Association (NRFA), which will have received capacity development support during the first 3 years (see component 2 on apex farmers' organisations).

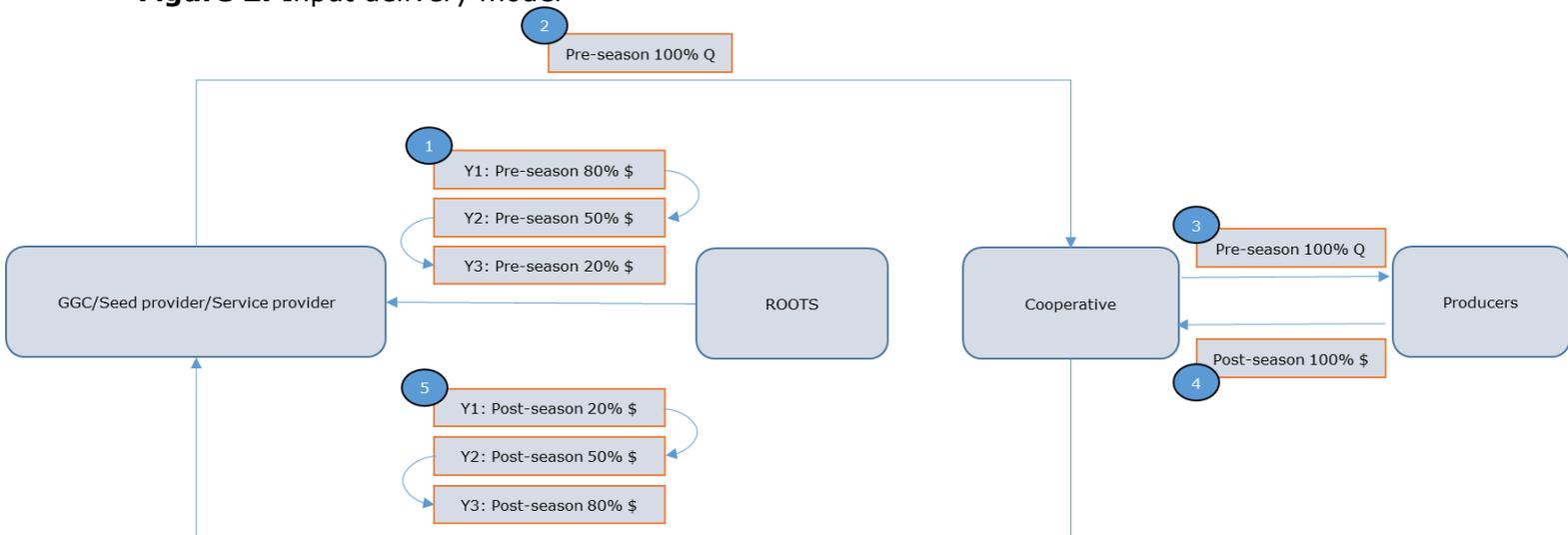
205. In a second step, FOs will be transformed into agricultural service hubs for their members, delivering on (i) input provision, (ii) access to finance; and (iii) marketing (linkages with AVIPs, market information and contract farming, see component 2 for more details). On input provision, the project will support cooperatives to enter into sustainable commercial partnerships with input dealers. The cost structure (fertilizer, land preparation, seeds) of more intensive rice production as introduced in component 1 is such that cooperatives will need assistance in developing the financial autonomy in meeting their seasonal operating expenses. To assist cooperative societies in accumulating the liquidity and relationships with financial institutions to independently underwrite their own production activities, the project will finance a partial and declining subsidization mechanism. A three-year declining subsidization (year 1: 80 percent, year 2: 50 percent, year 3: 20 percent) of major input costs will be introduced and fully capitalize the cooperatives, allowing them to independently meet their members' input supply needs in the following years. Like in NEMA (which tested a similar subsidy model to cooperatives), the PSU will be responsible for directly implementing the declining input subsidy program, as described above. The table below provides the amounts subsidized per hectare, while figure 2 describes the delivery mechanism.

Table 14: Declining input subsidy program

	Year 1		Year 2		Year 3	
	Wet	Dry	Wet	Dry	Wet	Dry
Irrigated tidal rice						
Per ha (USD)	1	2	3	4	5	6
Land preparation (per ha)	40	40	40	40	40	40
Fertilizer (2 bags; 4 bags)	32	64	32	64	32	64
Seed (50 kg)	20		20		20	
Total	92	104	92	104	92	104
Project	74	83	46	52	18	21
Beneficiaries	18	21	46	52	74	83
Project	80%	80%	50%	50%	20%	20%
Beneficiaries	20%	20%	50%	50%	80%	80%

	Year 1	Year 2	Year 3
	Wet	Wet	Wet
Rainfed tidal zone rice			
Per ha (USD)	1	2	3
Land preparation (per ha)	40	40	40
Fertilizer (2 bags)	32	32	32
Seed (50 kg)	20	20	20
Total	92	92	92
Project	74	46	18
Beneficiaries	18	46	74
		28	28
Project	80%	50%	20%
Beneficiaries	20%	50%	80%

Figure 2: Input delivery model



Approach. Similar to the NEMA model, the project will order inputs to the Gambia Groundnut Corporations (GGC) regional depots (based on an input needs assessment performed by the cooperative). In year 1, the project will pay 80 percent of the total input costs to GGC and will act as guarantee on the remaining 20 percent, which will be paid by the cooperative upon harvest. The cooperative will hence procure 100 percent of its inputs needs to GGC with a 80 percent subsidy. On the other hand, cooperative members will pay 100 percent of the input value, allowing their cooperative to accumulate sufficient liquidity (80 percent) during the first year (the other remaining 20 percent being paid back to GGC). The same approach is re-iterated with decreasing subsidy levels in years 2 and 3, up to a level where the cooperative will have accumulated sufficient financial resources to be financially sustainable.

Table 10a. Implementation schedule and responsibilities, inputs provision

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementation	Oversight
Gradation of VFA into Cooperative Societies (cluster of villages level)							Agribusiness Service Unit of DoA, NRFA	
Declining input subsidy program							PSU, NRFA	
Gradation of women <i>kafos</i> into Marketing Federations							Service Provider (e.g. United Purpose), NVGA	

206. access to finance, to ensure the availability of capital for FOs (in order to, e.g. sustain assets, finance working capital, and bring own contributions to matching grants), the project will promote: (i) the increased savings capacity of FOs and their members through Credit Unions (CUs) and Micro Finance Institutions (MFIs); and (ii) the access to diaspora financing/ remittances (through a pilot).

207. *Improving savings capacity through CUs.* Building on lessons learnt from IFAD-financed Rural Finance Project (RFP, which focused with limited success on VISACAs), ROOTS will target the middle-tier credit unions to ensure access to sufficient capital for women *kafos* and rice cooperatives. The project will partner with NACCUG, the apex body of the Credit Unions, to improve both the participation of smallholder producers in CUs and their savings capacity. In particular, through NACCUG, the project will organize yearly community sensitization sessions in each region to promote savings and raise awareness on credit union. Furthermore, the project will support yearly two credit unions per chapter⁴⁸ in their marketing and member enrollment efforts. In addition, the project will finance the production and distribution of additional savings boxes to the branches of the CUs in the project area and will provide mobility support for the collection of savings. For

⁴⁸ At the moment, NACCUG has three chapters in the project area: Brikama, North Bank and Bwiam.

six selected CUs, ROOTS will provide allowances for bookkeepers and compliance officers throughout the project's implementation. At a systemic level, the project will finance the organization of annual chapter meetings and managers' and chairpersons' conference to provide the necessary fora for discussion and expansion of the credit union ecosystem.

208. *Improving savings capacity through MFIs.* The project will continue its engagement with MFIs that successfully participated in NEMA (e.g. Reliance) by re-engaging them in support of smallholder producers. In particular, ROOTS will organize consultative meetings and promotional roundtables with MFIs to raise awareness about the project's activities, explain possible forms of support, present the stories of selected "champion" beneficiaries from NEMA and discuss some of the potential issues that MFIs might have in engaging with project beneficiaries. Following these rounds of engagement, the project will prepare MoUs with interested MFIs and constantly communicate the list of partner MFIs to project beneficiaries. For these partner MFIs, the project will also provide trainings on different aspects related to lending to the agricultural sector to allow credit officers to have a better understanding of agricultural risk, seasonality, etc.
209. *Mobile money and remittance-linked products (pilot).* The project will support partnering financial service providers (FSPs) willing or already committed to extend mobile financial services through agents and mobile apps in order to bring the services closer to women *kafos* and rice cooperatives, and to save operating costs through the digitization and the outsourcing of transactional services. Given the prevalence of remittances in The Gambia⁴⁹, a certain focus will be given to developing mobile remittances and to allow instrumental linkages with savings such as mobile transactional accounts where remittances can be received linked to purposive savings accounts. With support from IFAD (FFR Team), punctual international technical assistance (e.g. MicroSave Helix)⁵⁰ will be contracted to support FSPs (e.g. Reliance⁵¹, Supersonicz) in defining their digital and remittances strategy. This will comprise demand-driven technical supports such as (i) selecting relevant partners ranging from national fintech or mobile network operators distributing mobile money services to international money transfer operators, (ii) developing a network of agents, (iii) integrating their information system with mobile money platform(s), (iv) streamlining their line of products through digital distribution channels, and (v) improving the cross-selling of their core financial services to remittance recipients.
210. *Customized financial literacy to FOs.* The project will strengthen the capacities and the motivation of women *kafos* and rice cooperatives to use financial services available at a convenient distance. Consultants or NGOs with international exposure and expertise in financial education in collaboration with local consultants or NGOs will assess the needs and adapt accordingly training modules, key messages and delivery methods and tools (classroom based, face to face counselling, SMS advices and reminders, short videos, etc.) and possible facilitators/trainers. A particular attention will be given to consider the specific financial literacy features of women, youth and remittance recipients and to the best suited approaches to reach out FOs in order to achieve economies of scale. Financial education will combine one-off sessions and continuous multi-channel dissemination in order to support the changes in financial behaviours and attitudes over the long run. Similarly, the different players involved in facilitating the access to or providing financial services will be trained in order to convey a coherent global message over time and embed financial education messages and technics within their core activities.

⁴⁹ According to the Gambia Integrated Household Survey 2015/16, 40% of the households in rural districts received transfers.

⁵⁰ In particular, **International consulting firms with a Gambian or sub-regional footprint, such as MicroSave Helix (MicroSave subsidiary in West Africa).** <https://www.microsave.net/brands/helix-institute-of-digital-finance/> (ENG), <https://institut-helix.com> (FR)

⁵¹ Reliance currently has the license, the partnerships with the main Gambia MTOs to develop account-based remittance.

Table 10b. Implementation schedule and responsibilities, access to finance

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementer	Oversight
Community sensitization on savings							NACCUG	PSU
Marketing campaigns/Member enrolment							Credit Unions	PSU
Production and distribution of savings boxes							NACCUG	PSU
Chapter and NACCUG meetings							Chapters, NACCUG	PSU
Mobility support and allowance to selected CUs							NACCUG	PSU
Consultative and promotional roundtables							BDO	PSU
Training for lending to agricultural sector							BDO	PSU
Support to marketing and client enrolment							MFI, BDO	PSU
Last mile distribution through mobile phones and non-bank agents							Technical assistance, FSP	PSU
Remittance-linked financial services							Technical assistance, FSP	PSU
Customized financial education to target groups							Technical assistance	PSU

4.2 Component 2. Access to markets

211. This component aims to assist FOs supported at the level of production in component 1 to enter into inclusive commercial partnerships with other value-chain actors (through the *public-private producers' partnerships/4Ps* approach) and to promote value-addition processing. The objectives of this component will be pursued under two interlinked sub-components, namely: (i) 4P establishment and; (ii) 4P financing.

212. 4Ps and productive partnerships⁵² are increasingly adopted in donor-funded value-chains projects to forge vertical linkages between smallholder producers and the private sector. 4Ps catalyze the inclusion of smallholder farmers in agricultural value chains, while also increasing revenues and resilience. A recent capitalization study conducted by IFAD and the Technical Centre for Agricultural and Rural Cooperation (CTA) in East Africa showed that 4Ps contribute to raise incomes, improve product quality and access to finance⁵³. According to IFAD's How to do Note on the "Sustainable Inclusion of Smallholders in Agricultural Value-Chains"⁵⁴, 4Ps can take the form of: (i) *horizontal business models* resting on mainly informal agreements between producers and a private enterprise; (ii) *vertically integrated business models* with formalized agreements (e.g. contracts, fully integrated outgrowing schemes) and; (iii) *joint-venture models* with investment in joint facilities where the business' assets, ownership, revenues and expenditures are shared by producers and a private entrepreneur. In The Gambia, the IFAD-financed Livestock and Horticulture Development Project (LHDP) and NEMA tested the 4P model. NEMA developed horizontal business models between rice and vegetable

⁵² Supported by the World Bank in Latin America and the Caribbean's. See World Bank, 2016, *Linking farmers to markets through Productive Alliances: an assessment of the World Bank experience in Latin America*. In the Gambia, the World Bank-financed Commercial Agriculture and Value Chain Management project (GCAV) uses productive partnerships to link producers to the markets. Recent IFAD-funded projects supporting 4Ps in West Africa include the Agricultural Value-Chain Support Project (PAFA) in Senegal, the Agricultural Development and Market Access Support Project (PADAAM) in Benin, the Inclusive Value-Chains Development Project (PRODEFI) in Mauritania and the Inclusive Finance in Agricultural Value Chain Project (INCLUSIF) in Mali.

⁵³ CTA, 2018. Public, private, producer partnerships in East Africa. Experience Capitalization Series 2. Wageningen, the Netherlands, CTA.

⁵⁴ IFAD, 2016, *How To Do Public Private Producer Partnerships in Agricultural Value-Chains – Sustainable Inclusion of smallholders in Agricultural Value-Chains*, Rome.

producers and private sector enterprises. The IFAD Program Evaluation in The Gambia (2016) recommended to scale-up such 4P partnerships in the country.

4.2.1 Sub-component 2.1: Value-chain and market linkages

213. This sub-component aims to equip FOs with the appropriate platform, knowledge, business capacity, bargaining power and infrastructure to enter into inclusive and sustainable commercial relationships with other value-chain stakeholders.

a. Agricultural value-chain interaction platform

214. Under this intervention area, the project will enhance and scale-up the agricultural value-chain interaction platform (AVIP) approach initiated by NEMA. AVIPs bring together key value-chain stakeholders (producers, processors, traders, transporters) around the rice and vegetable value-chains at local level. The objective of this intervention area is to use AVIPs as a vehicle to enhance linkages between supply and demand and broker 4Ps, from simple contracts to more vertically-integrated business models, with formalized agreements between FOs and buyers.

215. In ROOTS, AVIPs will be organized around the main markets of each targeted region (*lumos* and central markets) and involve the cooperative societies/unions representatives (for rice) and marketing federation leaders (for vegetables) supported under NEMA and ROOTS, as well as key market operators.

216. The key operational steps undertaken to develop AVIPs include: (i) step 1: consultation, information, sensitization and mobilization; (ii) step 2: market analyses; (iii) step 3: establishment of AVIPs at selected local/regional markets; (iv) step 4: operationalization of the AVIPs and 4P brokering and; (v) step 5: promoting dialogue and policy influence. These various activities are further detailed here below.

217. *Step 1: consultation, information, sensitization and mobilization.* This set of activities aims to sensitize and mobilize local and national stakeholders around the AVIP initiative and 4P approach. The project will finance communication campaigns that will target all value-chain stakeholders i.e. producer organizations, buyers, local authorities, key institutions as well as actors of the *lumos* that will host and pilot the AVIPs. Implementation modalities include (i) rural radio communication programmes; (ii) meetings with local authorities (*Syfo, Alikalo, Kafo*), private economic operators and selected institutions; (iii) special communication events on market days, as well as sensitization events targeting producers and their organizations.

218. *Step 2: value-chain mapping and end-market analyses.* The value chain mapping will be directed at developing detailed profiles of the key actors, products and processes for the selected horticulture and rice value chains. Detailed market analyses will be undertaken (by NARI and private consultants) to assess the market demand and assess region-specific market opportunities, including the demand from institutional buyers (schools, hospitals, military etc.), the tourism industry, wholesalers, retailers, as well as demand from cross-border markets in Senegal.

219. *Step 3: establishment of AVIPs at selected local/regional markets.* Following the mapping and market analyses, the project will focus on the establishment of AVIPs that will bring together the key value chain actors. One rice AVIP and 1 vegetable AVIP will be established in each of the 6 agricultural regions targeted by the project, as listed below:

Table 11: Selected AVIPs

Region	Targeted market for rice AVIP establishment	Targeted markets for vegetable AVIPs establishment
West Coast (7 districts)	Brikama (daily market)	Brikama
Lower River (6 districts)	Bureng (weekly market)	Bureng

Central River/South (5 districts)	Brikama-Ba (weekly market)	Brikama-Ba
Central River/North (5 districts)	Kaur (weekly market)	Wassu
Upper River (7 districts)	Sareh Bojo (weekly market)	Basse
North Bank (7 districts)	Ndungu Kebbeh or Fass Njagga Choi	Fara Fenni

220. The AVIP membership will be drawn from categories of actors identified in the value chain mapping/profiling. The initial membership of each AVIP will include economic operators (wholesalers, retailers, traders, agribusinesses), farmers' organizations (including farmer cooperatives societies/unions, women *kafos* and vegetable marketing federations supported under NEMA and ROOTS), local government representatives, agricultural input and financial services providers and transporters. Other actors to be included in the AVIPs include: (i) FOs, such as the National Coordinating Organization for Farmers Association in The Gambia (NACOFAG); (ii) the Gambia Chamber of Commerce (GCCCI); (iii) the National Rice Farmers Association (NRFA); (iv) the National Vegetable Farmers Association (NVFA); (v) representatives from the hotel and tourism sector; (vi) institutional buyers (World Food Programme - WFP, schools, hospitals etc.) and (viii) private operators (e.g. GHE, Farm Fresh Gambia, Radville).
221. *Step 4: operationalization of AVIPs and 4P brokering.* Each AVIP will benefit from facilitation and capacity development support aiming to render it operational and self-sustaining. In this framework, a platform facilitator will work with each AVIP during project implementation. Facilitation support will aim to develop and implement bi-annual work-plans, organize and manage platform meetings every month, as well as regularly communicating tangible results (number of contract signed, number of out-growing models negotiated, number of 4Ps established etc.) to the project support unit (PSU).
222. *Capacity development support* will focus on developing adequate capacities for facilitators in relevant areas such as of platforms' operations such as elaboration and management of contractual/4P agreements, quality control, collective action and bargaining, value-chain development intelligence, conflict management and policy dialogue (see intervention area 1). Learning will also be promoted through peer-to-peer exchanges between AVIPs and visits of value chain platforms from other countries. For example, in the framework of south-south triangular cooperation, Gambian AVIPs representatives will be encouraged to meet with "interprofessions" organizations in Senegal (such as the *Comité Interprofessionnel du Riz au Senegal* (CIRIZ) which was supported under PAFA) and attend regional trade fairs (e.g. *Foire Internationale de l'Agriculture et des Ressources Animales* - FIARA Senegal).
223. *Step 5: Policy dialogue.* The platforms will be supported to develop and implement mechanisms for dialogue and policy influence. The project will also support the institutionalization of AVIPs and increase their visibility at policy, strategic and regulatory levels.
224. To implement AVIPs, the project will contract (as soon as the first semester of the first year) and finance a specialized operator (e.g. the West African and Senegal-based West Africa Rural Foundation – WARF). The international technical assistance supporting the PSU, together with the Business Development Officer (BDO), will be in charge of oversight and strategic guidance. The specialized operator will prepare the AWPB and submit them to the PSU for review and approval.

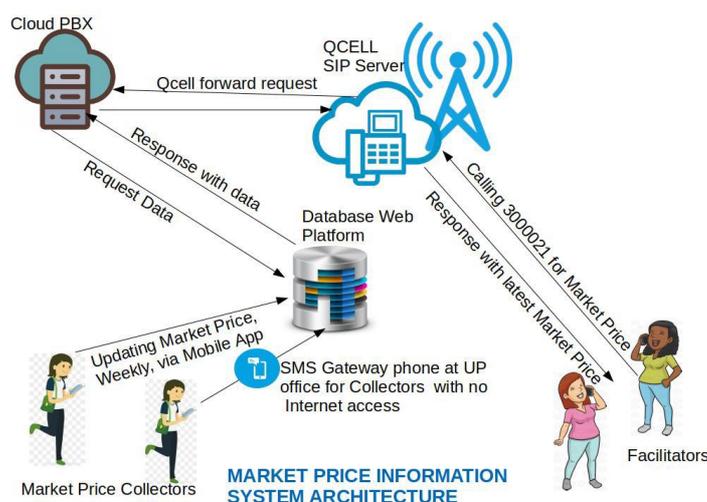
Table 12: Implementation schedule and responsibilities, AVIP

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementation	Oversight
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Consultation, information, sensitization and mobilization							Service provider (e.g. WARF), rural radios, Syfo/ Alikalo/ Kafo	PSU/BDO, International technical assistance, Com-KM Officer
Value chain mapping and market analyses							Service provider (e.g. WARF), NARI, private consultants	PSU/BDO, International technical assistance
Establishment of AVIPs at selected local/regional markets							Service provider (e.g. WARF)	PSU/BDO, International technical assistance
Operationalization of AVIPS							Service provider (e.g. WARF), platform facilitator	PSU/BDO, International technical assistance
Policy dialogue							Service provider (e.g. WARF)	PSU/Director

225. *Market Information System (MIS)*. To support AVIPs, and strengthen FOs in marketing decision making, the project will sustain and scale-up the voice-based MIS supported by NEMA. The current MIS is established around 10 markets/*lumos*⁵⁵ and 15 major vegetable crops⁵⁶. The MIS is powered in English and local languages (Wollof and Mandinka). The system currently operates as per the figure below.

Figure 1. Market information system architecture



Source: United Purpose, 2019. System functioning under NEMA.

226. ROOTS will build on the existing digital technology (server, cloud, database web platform) and human capital (facilitators) set up under past projects to include 10 new markets/*lumos* and new crops (rice). The MIS will serve all AVIPs, as well as the new (30) and upgraded (40, if not already covered) *kafos* supported under component 1 and introduce innovations such as climate information.

227. To implement the above, the project will finance the following activities: (i) the expansion of the MIS to 11 new markets/ *lumos* closer to the women *kafos* and rice cooperative societies supported under component 1; (ii) the integration of additional local languages (Fula, Jola and Serehuleh) to increase the MIS outreach within targeted communities; (iii) information campaigns on the MIS (through weekly radio programs); (iv) the identification and training of 1500 MIS facilitators (15 facilitators per garden *kafo*,

⁵⁵ Serrekunda, Brikama, Farafenni, Brikama-Ba, Basse, Sare Ngai market, Bansang market, Wassu market, Ker Pateh market and Bureng market.

⁵⁶ Tomato, onion, cabbage, hot pepper, big pepper, okra, sweet pepper, eggplant, bitter tomato, sweet potato, cowpea, roselle, amaranth.

in addition to facilitators within cooperatives and AVIPs); (v) the equipment of new market price collectors (smartphones, credit, transport) operating around designated markets; (vii) service operator fees to continue running and monitoring the MIS; (viii) test-pilot the insertion of climate information, and (ix) a study to sustain the MIS system.

228. A performance-based contract will be signed during the first semester of the first year with a specialized operator (e.g. United Purpose, who has been successfully working with NEMA on the MIS development) to implement all the above activities. The specialized operator will liaise with The Gambia Meteorological Service to implement the climate information dissemination pilot and work with a local business (e.g. The Gambian social enterprise Jokalante) to deliver a series of different voice-based services through mobile phones. The international technical assistance, together with the Business Development Officer (BDO) of the PSU will be in charge of oversight and strategic guidance. The specialized operator will prepare progress reports and annual Work Plan and Budgets (AWPB), and submit them to the PSU for review and approval.

Table 13: Implementation schedule and responsibilities, MIS

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementation	Oversight
MIS expansion to new markets/lumos (11) and crop (rice)							Service Provider (e.g. UP)	PSU/BDO, International technical assistance, Com-KM Officer
Integration of additional local languages (Fula, Jola, Serehuleh) in the MIS							Service Provider (e.g. UP), specialised national contractor (e.g. Jokalante)	
Awareness raising on MIS service and use							Service Provider (e.g. UP), community radio-stations	
Market information facilitators identification and training (within component 1 gardens)							Service Provider (e.g. UP)	
ICT technical support and module development							Service Provider (e.g. UP)	
Operation of the cloud-based server							Service Provider (e.g. UP)	
Climate information dissemination pilot							Service Provider (e.g. UP), Gambia Meteorological Service	
Sustainability study/ exit-strategy							Service Provider (e.g. UP)	

b. Strengthening apex farmer organizations

229. The project will finance a two-year capacity development program to NACOFAG, the Gambian apex body. The program aims to (i) empower NACOFAG (Board members, Technical Secretariat and Field Officers) in better representing and supporting its members, (ii) enhance governance/ organisational structures, ensure representation and active participation of women and youth, (iii) enhance its policy dialogue skills, and (iv) improve the quality of technical and economic services (e.g., identifying marketing/ contract farming opportunities, enabling 4Ps/building value-chain linkages and participating in AVIPs).

230. This capacity development program will complement and build on the efforts carried out by other on-going projects, such as NEMA and the EU-funded (and FAO-implemented) Envelope "A" Project. The later FAO project will: (i) perform an assessment

of all cooperatives in the country to better identify capacity development needs; (ii) support the development of a comprehensive National Cooperative Policy, and (iii) strengthen the capacity of value chain actors, national associations and their networks and platforms.

231. Contents of the capacity development program will be adjusted based on the results of the cooperative assessment performed by FAO. A performance-based contract will be signed (as soon as the first semester of the first year) between the PSU and a well-respected institution/ service-provider having a proven experience on delivering organizational and economic support to apex FOs. Examples include ROPPA⁵⁷ or the Senegalese association ASPRODEB⁵⁸. The service provider will be responsible for preparing its AWPB and share it with the PSU for review.

232. At the level of national commodity organisations, the project will strengthen the National Rice Farmers Association (NRFA) and the National Association of Food Processors (NAFP). The project will also back the emergence of the National Vegetable Growers Association (NVGA). ROOTS will support the NRFA, the NVGA and the NAFP to (i) build a wide membership base (at national, regional and district levels); (ii) strengthen governance structures (i.e. establish national Secretariats, as well as regional and district unions), and (iii) deliver more and better economic services to members (input procurement, marketing, contract farming, 4Ps/ building value-chain linkages, participation in AVIPs, use of MIS). These activities will be implemented by NACOFAG, through a 1-year (renewable) MoU with the project (signed before the end of year 1). The International Technical Assistance working with the PSU will support NACOFAG in this effort. NACOFAG will be responsible for preparing its AWPB and share it with the PSU for review.

Table 15: Implementation schedule and responsibilities, FOs

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementation	Oversight
Capacity development to NACOFAG							ASPRODEB, ROPPA, PAOPA	PSU/BDO, International technical assistance, Com-KM Officer of PSU
Capacity development to the NRFA							NACOFAG	
Capacity development to the NHA							NACOFAG	
Capacity development to the NAFP							NACOFAG	

c. Market infrastructures and rural roads

233. In addition to facilitating market linkages through AVIPs, MIS and strengthened FOs, developing market and connectivity infrastructures will have positive impacts on improving the environment around 4P transactions. During the initial year of the project, an inventory of the main *lumos* will be prepared. From this study, markets will be prioritized for construction or rehabilitation. Four existing market places (market outlets) at selected strategic locations will be supported. Besides, in order to connect remote villages to the main roads and to markets, access roads will be constructed (60km) and renovated (10km), following the same FS&DD and oversight modality described in component 1 for causeways and production infrastructures. Given the distance between villages and the main roads, as also due to the small size of the country, the length of the rural roads will be less than 8 km.

234. Construction of roads and markets will be undertaken by competitively selected contractors and overseen by the DCM and ITA who will have a critical role of guiding and confirming that the bidding and procurement process are managed as stipulated in its ToRs. The PSU, with support from the ITA, will play the overarching role of overseeing the

⁵⁷ Network of Farmers Organizations and Agricultural Producers of West Africa.

⁵⁸ Association Sénégalaise pour la Promotion du Développement à la base.

whole process. To ensure proper follow up and sustainability, as much as possible, all construction works are proposed to be completed two years before the project ends.

Table 20: Implementation responsibilities, market development

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementer	Oversight
Users consultation FS&DD supervision							PSU/ consultants	DCM/ITA
Local market place upgrading							PSU/ contractors/ consultants	DCM/ITA
Rural roads construction							PSU/ contractors/ consultants	DCM/ITA

4.2.2 Sub-component 2.2: 4P financing

235. This sub-component will support the access to finance for viable and sustainable 4P business ideas (focused on post-harvest, value-addition and marketing activities). The project's contribution will be threefold; (i) ensuring that high-quality, bankable business plans are prepared by SMEs and/or FOs; (ii) that matching grant resources are efficiently utilized, and (iii) that post-investment business support is available to ensure the sustainability of 4Ps.

a. Business plan development

236. ROOTS will support SMEs and FOs to prepare business plans. The project will focus its efforts on improving the quality of business propositions, through working with national institutions to ensure sustainability. The project will collaborate closely with the Gambia Chamber of Commerce and Industry (GCCCI), to develop the business development services capacity and to accompany interested SMEs and FOs to prepare their business plans.

237. *Support to GCCCI.* Given the central role of GCCCI in the implementation of this sub-component, the project will provide direct support to strengthen its capacity and expertise. In particular, the international technical assistance (ITA) foreseen for the inclusive commercial partnerships will work together with GCCCI in developing 4P business plan preparation capacities (training, regional study tours, joint work on preparing some of the initial business plans) and in supporting process of the first round of financing. In addition, the project will also provide resources to GCCCI to increase its staffing and mobility to allow for a better presence in the field during the preparation of business plans for the FOs. Overall, the project is envisaging that GCCCI will emerge as the leading business development services provider and act as the focal point for other national organizations in assisting agri-businesses.

238. *Promotion/awareness raising.* GCCCI will also have the responsibility to promote the 4P financing facilities offered by the project. Annual TV and radio campaigns will be organized, as well as bi-annual information sessions in Banjul and regional capitals. These activities will complement the awareness raising on 4Ps carried out at the AVIP level. In addition, GCCCI will have to participate in the local events organized for other activities of the project, in order to continuously build networks between project-supported producers and potential SMEs and FOs. Interested applicants will fill a pre-screening template (summarizing the profile of the applicant and the business proposal, foreseen 4P linkages, envisioned markets, etc.) to express their interest and articulate their ideas. Once pre-screened by the GCCCI staff (within 4 weeks of submission), eligible applicants will be contacted to proceed to the preparing their business plans.

239. *Supporting 4P arrangements.* In line with overall project approach, the 4P arrangements will be the main modality for support under this sub-component. The

project will ensure that AVIPs will serve as networking opportunities between value-chain stakeholders. In addition to the AVIPs, the project will finance trade fairs, roundtables, information campaigns and fora to boost linkages and broker contracts between larger value chain actors (including institutional buyers such as the World Food Program – WFP – operating a Purchase for Progress program in The Gambia) and FOs. The project will also provide technical assistance to prepare standard contract templates (with support from a jurist) between 4P actors, particularly given that proven pre-engagement between SMEs and producers will be one of the criteria for MG financing.

240. *Business plan preparation for SMEs.* Interested SMEs (in line with current definition in The Gambia SME policy summarized in the table below) will be supported by GCCI to prepare their business plans, with the financial support of the project. The process will begin with the enterprise's background check, a review of its business history, financial performance, existing business lines and plans for expansion (for existing SMEs) or in-depth analysis of the proposed business ideas (for new SMEs). Subsequently, GCCI will support each applicant in identifying 4P partners, as eligibility criteria will require proven pre-engagement with smallholder producers (such a sourcing contracts, with pre-defined volume, quality and price parameters) for example with the women *kafos* supported under the first component. GCCI will also assist applicants in preliminary discussions with commercial banks, if necessary, in order to secure the required contribution. Once ready (within 3 months), the business plan will be submitted via GCCI to the Review Committee for evaluation (see below for composition of the Review Committee).

Table 16: SMEs criteria as defined in the National Policy Document (2014)

Category	No. of Employees	Paid-in Capital/Assets GMD	Annual Sales GMD
Micro enterprises	1-4	0 – 25,000	0 – 100,000
Small-sized enterprises	5-49	25,000 - 1 Million	100,001 – 1 Million
Medium-sized enterprises	50 -99	1 Million - 5 Million	1 Million – 10 Million

241. *Business plan preparation for FOs.* GCCI will also support the interested FOs in preparing their business plans, with the financial support of the project. The GCCI staff will organize business plan preparation workshops in small groups in the regions (10 participants, twice a year in each region) and would then participate in field visits and on-ground business plan preparation for pre-screened applicants. The applicants, with GCCI support, will work closely with the AVIPs to identify potential partners and secure contractual pre-engagement with the necessary buyer. GCCI will also assist applicants in preliminary discussions with commercial banks and microfinance institutions, if necessary, in order to secure the required contribution. Similarly, once ready (within 3 months), the business plan will be submitted via GCCI to the Review Committee for evaluation.

242. *Engagement of the financial sector.* The lessons learnt from NEMA indicated a very limited involvement of financial services providers (FSPs) in lending to matching grant beneficiaries. In ROOTS, in parallel to the business plan process, GCCI will also support better linkages with the financial sector. In particular, GCCI will tap into their networks and organize yearly roundtables to raise awareness about lending within the agricultural sector, discussing risks in the sector, exploring financing arrangements and increased coverage in rural areas, and showcasing success stories. In addition, the project will provide training opportunities to credit officers from participating FSPs and the option of co-financing staff costs. Furthermore, the option of co-financing (leasing-to-buy) by the equipment providers, as successfully tested post-Mid Term Review in NEMA, will also be supported by re-engaging these actors and linking them to potential beneficiary groups. The project will organize roundtables with interested equipment providers to explain the opportunities under NEMA, sign MoUs and inform the potential beneficiaries about the available providers.

b. Business plan financing

243. The project will establish a separate matching grant (MG) window for financing post-harvest and value addition business plans proposed by SMEs and/or FOs engaged in 4P arrangements. Throughout its implementation, the project is expected to finance about 10 4P-centered business plans from SMEs and 60 from cooperatives.

244. *Financing conditions.* For SMEs, the ceiling for each investment supported by this MG window will be USD 200,000⁵⁹. The project will award at most 20 percent of the investment, while the beneficiary will finance in-cash at least 80 percent of the investment. The SME's contribution is expected to be mobilized from their own resources and from FSPs. For FOs, the ceiling for each investment supported by this MG window will be USD 50,000. The project will award at most 80 percent of the investment, while the beneficiary will finance in-cash at least 20 percent of the investment. Similarly, FOs will need to tap into their own resources, secure financing from a financial institution or engage in a leasing agreement with the equipment provider.

245. *Eligibility.* This matching grant window will focus on existing and new SMEs⁶⁰ and on existing FOs in the project areas interested in starting or growing an agri-business that falls within the categories detailed in the tables below. As described above, proven 4P arrangements (e.g., sourcing contracts or contracts with buyers) will be a mandatory eligibility criterion. Previous beneficiaries of matching grant support from IFAD or other donor funded projects will not be eligible. The PSU and GCCI will ensure to the maximum extent that the eligibility criteria are respected in order to avoid elite capture.

Table 17: Business eligibility criteria for SMEs

Business	Eligible expenditure to be financed	Indicative share of MG window
Agro-processing	Equipment (large scale rice milling facilities, feed processing, processing of vegetables (drying, paste) and fruits (juices), sorting and exporting facilities, etc.)	50%
Marketing of agricultural products	Equipment (regular and cold trucks, cold storage facilities, e-commerce technology and digital agri-platforms ⁶¹ , transport and labelling equipment, etc.), post-harvest cold storage, warehouse.	50%

Table 18: Business eligibility criteria for FOs

Business	Eligible expenditure to be financed	Indicative share of MG window
Post-harvest and agro-processing	Equipment (rice drying floors, rice milling facilities, feed processing, processing of vegetables (drying), etc.)	80%
Marketing of agricultural products	Equipment (regular and cold trucks, cold storage facilities, transport and labelling equipment, etc.), post-harvest cold storage infrastructure, warehouse.	20%

246. *Rounds of financing.* For both SMEs and FOs, the project will start appraising and approving business plans in year 2 and each round of financing is expected to be completed within 12 months, allowing one round per year in Y2-Y5, for a total of four rounds. Each round should target approving between 4-6 matching grants for SMEs (ideally balanced in terms of type of business) from a pool of 20 received applications and 8-10 matching grants for FOs (ideally balanced in terms of geography and type of business) from a pool of 20 received applications.

⁵⁹ Up to 4 business plans could be financed for "green" SMEs (GEF-financed) for amounts up to USD 250,000 under the same financing conditions, under the GEF allocation. "Green" SMEs are to be defined as enterprises where at least 50% of the investment is dedicated to one or more of the following: 1) renewable energy generation; 2) recycling and/or food waste reduction; 3) production of sustainable packaging; 4) low or zero carbon footprint equipment; 5) transformation/value addition of certified organic agricultural products.

⁶⁰ Examples of SMEs (not exhaustive) include GACH, Radville, Gambia Horticulture Entreprises (GHE), FarmFresh or Kharafi Farms. GCCI will support the project in identifying all partner SMEs.

⁶¹ Example of e-commerce platforms to be supported under 4Ps include FarmFresh, <https://www.farmfresh.gm/>

247. **Business plan review.** A Review Committee meeting will be organized once a year in Banjul to review and approve submitted business plans (sitting allowances will be provided by the project). The Committee will be chaired by the project coordinator, assisted by the BDO and the GCCI focal point (as observer), and will include representatives from Ministry of Agriculture (2), Ministry of Trade, Industry and Employment (1), NACOFAG (1), GIEPA (1), and private and financial sector (3). Applicants will be encouraged to participate and present their business idea to the Committee meeting. Following the presentation, the Committee will evaluate behind closed doors each proposal along the criteria below (weights in parenthesis; to be later developed into a comprehensive scoring board):

- Applicant readiness (10 percent): previous business history and financial performance (for existing SMEs), previous entrepreneurial training (for new SMEs); existing activity, capacities and group cohesiveness (for FOs);
- Business plan quality (30 percent): identification of market needs, prospective clients, realistic targets and pricing, etc.
- Projected profitability/cash flow (25 percent): each proposal would need to include a multi-annual cash flow analysis, including profitability indicators (IRR, NPV) and demonstrated savings capacity for O&M and asset replacement;
- Demonstrated 4P arrangements linkages with other project beneficiaries or activities (25 percent): number and coverage of pre-agreed contracts, quality of the involvement of FOs, etc.
- Potential to contribute to development (10 percent): employment creation, rural development, graduation from poverty of partner FOs' members; exports, etc.

248. **Approval.** Once the Review Committee approves a business plan, the potential beneficiary is informed about the decision (within 1 week) and is requested to provide (within 1 month) the proof of its required contribution in an account with a financial services provider (or proof of agreement with the equipment provider in the case of cooperatives that choose leasing options) and a proforma invoice from the equipment provider. Following confirmation by the BDO and GCCI focal point, the project releases the funds to the equipment provider, who then delivers the equipment to the beneficiary (within 2 months). Unsuccessful applicants to this MG window are also informed (within 1 week) by the GCCI focal point; subject to agreement by the Review Committee, applicants with scores just below the approval threshold are invited to re-work their business plans and resubmit in subsequent rounds.

Post-investment business support

249. ROOTS will include the post-investment business support for the targeted SMEs and FOs. To facilitate the access of SMEs to services such as certification (ISO), food safety standards (compliance with FAO *codex alimentarius*, HACCP⁶²), good manufacturing practices, financial management, linkages with export markets, etc., the project will identify potential service providers and , organize the participation in regional or international fairs. ROOTs will co-finance capacity development/trainings.

250. Second, in complementarity with the monitoring by GCCI and the BDO, to sustain and expand the engagement of beneficiary SMEs with FOs, the project will continue to introduce emerging producers to larger value chain actors, facilitate the contracting arrangements and provide ad hoc support to ensure that commitments production standards and volumes are met. In particular, the project will run bi-annual assessments with the beneficiaries of the three MG windows to identify their needs in terms of 4P partnerships. The project will also organize roundtables between the MG beneficiaries under this window and targeted producers (including beyond the scope of those supported by the project). ROOTS will also continue to aid in the updating and improving

⁶² Hazard Analysis Critical Control Points

the different contractual arrangements between 4P actors, based on the evolution of the project.

251. Third, as the project progresses, this MG window will gradually introduce innovations (as pilots). The main innovation will include access to funds from crowdfunding platforms and from the diaspora. To provide the diaspora investors willing to invest in impacting SMEs and FOs with tangible opportunities and reliable partners, ROOTS will proceed through a threefold approach. First, at project inception, a diaspora investment survey (carried out by an international consultant) will assess in key destination countries (US, England, Spain) the wealth profile and investment willingness and preferences of the diaspora communities. The survey will provide a segmentation of diaspora groups according to their incomes, investment "culture" and readiness and will clarify expectations of remote financial investors and those willing to return as entrepreneurs. The survey will be disseminated as a public good and its results will be presented to ROOTS partners, GCCI, GIEPA, financiers, entrepreneurs and beyond to the public stakeholders and relevant donors engaged in the field of diaspora investment. After mid-term, based on the survey results, a webpage will be developed in partnership with GIEPA describing for each region the main investment opportunities, the supports provided by ROOTS, the contact of a referral, and general information on agri-business and crop investment, sources of financing. Third and leveraging on the different MG windows and 4P financing learnings, ROOTS will provide the opportunity to the high income segments of the diasporans to invest in rural agri-businesses supported by ROOTS through crowdfunding mechanism. The project will strengthen existing fintech prototype such as the existing "Money Farm"⁶³ aiming at intermediating debt financing from the "crowd", most particularly the diaspora, to rural entrepreneurs. To implement this pilot, the project will receive direct support from the FFR⁶⁴ team of IFAD.

Table 19: Implementation arrangements, sub-component 2.2

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementer	Oversight
Support to GCCI							ITA, BDO	Project Coordinator
4P arrangements							GCCI, ITA	BDO
Engagement with the financial sector							GCCI	BDO
Promotion/awareness raising							GCCI, GIEPA, radio, TV etc.	BDO
Business plan preparation							GCCI	BDO
Business plan review and approval							Review Committee	Project Coordinator
MG Financing (20%-80%) for MSMEs		4	4	6	6		PSU	Project Coordinator
MG Financing (80%-20%) for FOs		10	10	20	20		PSU	Project Coordinator
Post-investment monitoring and support							BDO, GCCI	Project Coordinator
4Ps with new sources of financing							BDO, IFAD	Project Coordinator

252. **Under component 3 (Institutional Development, Project Management and Citizen Engagement)**, the project will support policy dialogue and South-South and Triangular Cooperation (SSTC) activities. The project will finance selected policy dialogue forums involving FOs (e.g., NACOFAG, NAWFA), private sector representatives and public authorities/ policy makers. Policy dialogue areas relevant to the project include: (i) the adoption and implementation of CFS Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT), more particularly to address formal policy and customary laws barriers of women's and youth access to land and; (ii) policy barriers to domestic rice production in The Gambia,

⁶³ <https://www.moneyfarm.farm/>

⁶⁴ Financing Facility for Remittances.

based on a competitiveness analysis financed by the project. The project will act as a facilitator and finance about 3 policy dialogue round tables and forums. The project will receive direct assistance from IFAD’s Regional Hubs (Dakar and Abidjan) and from the international technical assistance.

253. On SSTC, ROOTS will work closely with other IFAD-funded projects in the IFAD Dakar Hub and learn from regional experience on rice and horticulture production in the context of climate change. Enhanced cooperation between the Gambian and Senegalese MoAs with respect to the seed supply systems and the use of appropriate production and post-harvest technologies will strengthen the countries' capacity to improve productivity. Exchange visits between Senegalese and ROOTS beneficiaries will provide opportunities for learning. Exchange visits will focus on farmer advocacy and organization, cooperative-based business development, FFS experience, and gender equality and women’s empowerment. Last but not least, given the challenges faced by The Gambia on M&E, knowledge sharing events with other countries (and IFAD Hubs) having developed successful M&E and MIS systems (e.g. the IFAD-funded Coastal Community Development project in Indonesia, which is considered as a best practice) are envisaged.

Table 20: Indicative work-plan for policy dialogue

Activity	Y1	Y2	Y3	Y4	Y5	Y6	Implementation	Oversight
Rice value-chain competitiveness analysis							International consultant	PSU
Policy dialogue round-tables							PSU, IFAD (Regional Hubs), NACOFAG, NAWFA	

II. Monitoring and evaluation, communication and knowledge management

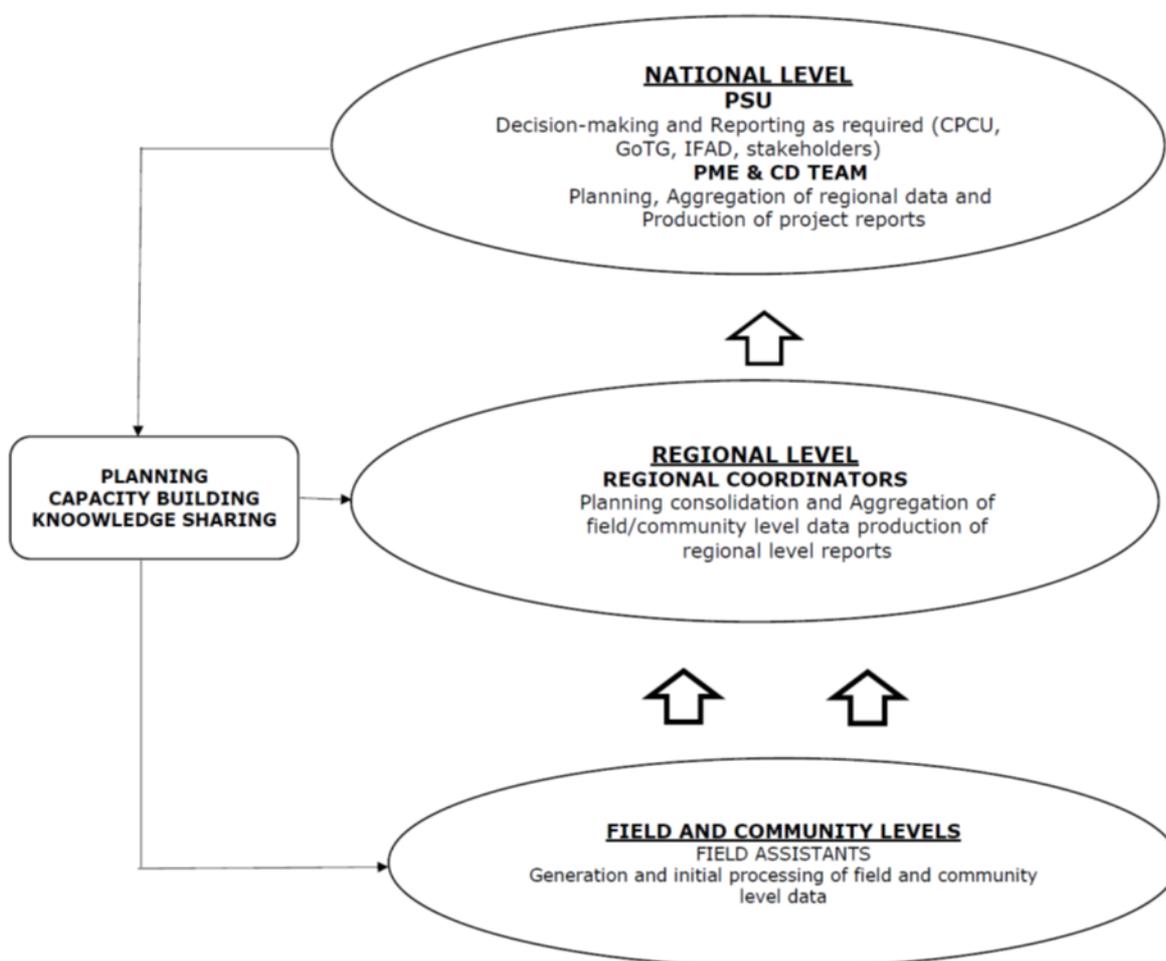
254. *Overview.* A robust and user-friendly planning, monitoring, evaluation, learning and communication system (PME&CD) will be established, in line with the IFAD's Results and Impact Management System (RIMS). This system will include participatory-monitoring and knowledge development for all the institutional entities and stakeholders involved in implementation. Impacts will be evaluated against a baseline study, a mid-term evaluation and an ex post evaluation, which will use key indicators in line with the RIMS and results framework. This system will also feed the Gambia National Agriculture Database (GANAD).

255. The main objectives of the PME&CD are to (i) assess the project’s achievements at the level of outcomes and impact; (ii) provide timely and accurate information of project implementation progress, with an emphasis to monitor performance, based on outputs delivery; (iii) provide reliable and relevant information to all the stakeholders to improve transparency; (iv) define and assign tasks, manage workflow on appropriate time basis and track the various components and milestone deadlines; and (v) evaluate the performance of implementing agencies and service providers.

256. M&E, communication and knowledge management in the PSU. The project PME&CD organizational set up is aligned with the ROOTS institutional arrangement. Overall responsibility for M&E will rest with the M&E Officer. The M&E Officer will work closely with the CPCU. At the regional level, the Regional Coordinator will be in charge of M&E and report directly to the M&E officer. The Regional coordinator will work closely with Field Assistants, who will be in charge of the M&E at field level and support community for the participatory M&E process. To establish an integrated M&E system, the M&E officer will work closely with each component team leader. The M&E Officer will ensure that all implementers provide disaggregated data on women and youth participation, in relation to overall project targets of 80% of women and 50% of youth.

257. The project will also recruit one Capacity development and Knowledge Management officer (CD/KM Officer). The CD/KM Officer will be responsible for the capacity building, knowledge management and communication activities of ROOTS. Based on the needs and activities planned, the CD/KM officer will develop each year an annual capacity-building plan. This plan will be fully part of project annual work plan and budget submitted for approval. The Regional Coordinator and Field Assistants will work closely with the CD/KM officer to report CD/KM activities at regional and community levels. Planning of the component capacity building activities will rest under the responsibility of component Team leader under the overall guidance of the Project Director. Therefore, for the component 1, CSA officer will be responsible and for component 2, BDO officer will be responsible.

Figure 3: key Planning Monitoring, Evaluation and learning activities Framework



5.1 Project M&E

5.1.1 Monitoring and evaluation system

258. The specific activities to operate the M&E system are as follows.

259. *M&E manual.* A comprehensive M&E manual will be developed. The PSU will prepare the M&E manual within the project year 1. The manual shall elaborate the result chain

and, contain all the data collection and reporting templates. Simplified pictographic templates for use at the community level will be also included in the manual.

260. *Monitoring inputs, outputs and implementation processes.* Monitoring implementation progress will be based on the M&E Manual to be developed. The data collected internally through the project's monitoring reports will be strengthened through regional level planning, technical audits of infrastructure, review of the effectiveness and quality of capacity building efforts and 4P interventions. Findings from such monitoring activities will be shared with PSU, CPCU and learning fora at different levels, if relevant.
261. *Participatory M&E.* Engaging communities in the planning as well as during implementation will be promoted. Therefore, ROOTS will implement participatory M&E by (i) introducing simple monitoring formats to be used by communities to track project milestones focusing on results and to identify implementation problems and best practices; (ii) digitized resource maps and/or pictographic information on the rice lowland and tidal farms management; (iii) facilitating periodic structured discussions on learning and findings; (iv) capacity building of community leaders and committee members. As part of self-monitoring, accountability mechanisms such as social audit committees, public display of information, participation in meetings, and a participatory grievance redress mechanism will be implemented.
262. *Evaluating ROOTS outcomes and impacts.* Progress towards the PDO and intermediate outcomes will be measured through a detailed baseline survey and two qualitative as well as quantitative evaluations, one at mid-term and one at the end of project implementation. Evaluations will be complemented by annual thematic studies, assessments and case studies on domains, sectors and sub-components agreed to by the PSC and IFAD. Utilizing new digital technology (such as the FAO-developed Collect Earth or Earth Map) will be promoted to monitor impact of project interventions (more particularly under component 1).
263. Successive independent and self-evaluations have identified project monitoring and evaluation (M&E) as an area for improvement in IFAD operations. Human resource capacity and skills are highlighted as a major barrier in countries for better M&E performance in IFAD-supported operations. Furthermore, M&E in the agriculture sector has remained weaker in comparison to social sectors. While in health, education and other sectors there are strengthened M&E systems, structures and skills to collect data, measure and manage for results, within the agriculture sector important weaknesses still persist. To address this challenge, IFAD has developed an innovative training and certification framework for project staff on M&E in rural development. IFAD's flagship Program in Rural M&E (PRiME) trains and certifies staff in project management units. The training program consists of two required modules on the Fundamentals of M&E. After each module, participants are required to take a rigorous assessment to demonstrate uptake of the course material. Upon successful completion of the assessments, participants receive a certification in the Fundamentals of M&E. M&E officers recruited will be required to participate in PRiME within the first years of the project implementation as a prerequisite for setting up a strong M&E function. This proportionally small investment in capacity building is expected to have a significant impact on development outcomes.

5.1.2 Data collection

264. *ROOTS will put in place its own MIS system.* ROOTS will set up a simple web-based MIS. This MIS will be designed to feed and relied on the national agricultural sector M&E database (GANAD). The MIS will manage the project implementation data collection, processing and storage and generate requisite M&E data for review, analysis and reporting. Given the importance of GANAD for the agricultural sector, ROOTS will continue to support the operationalization of this system based on the action plan that CPCU will provide. The ROOTS MIS responsibility of data collection and transmission will be under

the M&E officer. The ROOTS will set-up also a standalone archives (soft and hard) and, update and upgrade (if needed) the tools developed by NEMA for example NEMA M&E framework. ROOTS will adopt a results-based management approach of IFAD' RIMS.

265. ROOTS MIS will ensure (i) the monitoring and evaluation at different levels (input, output and outcome); (ii) the follow-up and coordination of services providers' work; (iii) the contract management especially the payment of infrastructure building contractors based on the advanced payment provided and the physical achievements. For example, ROOTS MIS will track the physical achievements especially for civil works to distinguish the status between started, partially completed, completed and operational structures when assessing performance indicators.
266. Monitoring data entered into the ROOTS MIS will be collated, synthesized and shared through annual progress reports (see below). A results chain based on all components and sub-components will be developed to ensure that data structure and data needs at different levels are comprehensively met. Other key elements of the ROOTS MIS will include: (i) financial management system; (ii) human resources; (iii) service provider data base; (iv) data storage system and; (v) beneficiaries, women and youth groups' database.
267. Under the SSTC, it is envisioned to build partnerships with other IFAD-financed projects having established successful M&E and MIS systems (e.g. the IFAD-funded Coastal Community Development project in Indonesia, which is often considered as a best practice). Knowledge sharing events (e.g. travels and workshops), involving M&E staff from the PSU and CPCU, could be envisaged.

5.1.3 Reporting

268. The PSU will submit quarterly and annual progress reports to IFAD and MoA through CPCU, after validation by the PSC. These reports will provide information on the physical and financial progress of the project. A brief summary of activities undertaken and results achieved in each component will also be provided.
269. The progress reports would include regular information on the project outputs, broken down by region. The progress reports will assess performance in relation to physical achievements versus planned, as well as resource utilization. The progress reports will provide key qualitative and quantitative information on project progress, in terms of a descriptive and analytical account of achievements relative to original targets, as well as an assessment of project outcomes. Reports will also highlight any implementation problems and reasons for plan deviation, and propose corrective measures. The PSU will conduct periodic field checks and verifications on a random basis.
270. The annual progress report would include a table by component, clearly indicating planned and actual targets for key indicators based on the final project design report. Annual reports will reflect cumulative progress, compliance with legal requirements and reconciliation of the expenditures as well as other key requirements that will be agreed upon during periodic supervision missions.
271. Each service provider will submit to the PSU regular progress reports that will be compiled and submitted as progress reports to the CPCU on a quarterly basis, and consolidated and fed into the project's overall quarterly and annual progress reports. The quarterly and annual progress reports will be presented at the PSC meetings and provide the basis for adjustments of the current AWP&B, if necessary, as well as for the preparation for the next years AWPB.

272. ROOTS will have three levels of reporting, using simple basic formats with a set of indicators to be monitored:

- i. *Field and community Level.* Community level activities will be monitored by the field Assistants following a predetermined format. Simplified pictographic templates will be introduced at village development committee level.
- ii. *Regional level.* The Regional Coordinator will receive reports on each community and/or field activities. The Regional Coordinator will be responsible for (i) monitoring of activities at the regional level and (ii) the consolidation and aggregation of field and community level data. Based on a review by project components' team leader, the regional coordinator will produce quarterly regional reports that review the project performance, document progress against plans, and identify region-wide implementation issues and best practices. Regional reports will be submitted to the PSU and used to provide feedback to Agricultural Regional Directorate. In addition, these reports will be used as one source of information at the national level for annual events to share experience and lessons learnt.
- iii. *National level.* The PSU, through the M&E officer, will receive quarterly reports from each region and if needed, will access detailed regional and field/community activities information. The M&E officer will be responsible for consolidation, aggregation and processing of regional data and report. The M&E Officer will prepare the mandatory reports and annual progress reports to be shared with the PSC, IFAD and the keys stakeholders. These reports will also be one source for posting ROOTS related information on the website of the Project.

273. The PSU will be responsible for preparing and submitting the mandatory reports.

5.1.4 Baseline and impact studies

274. *Baseline survey.* During the FIPS period, a baseline survey will be undertaken to assess the situation and establish benchmarks against which the outcomes and impacts will be assessed. Complementary baseline data will also be collected in the process of preparing annual work plans, which includes:

- the scope, capacity, and needs of women and youth groups;
- land development and water resources management technologies (including constraints and potentials), critical infrastructures and services needed to improve agricultural productivity and adaptation to climate change in the project implementation area;
- number of women groups and youth to be supported in market oriented vegetable garden and 4P interventions,
- the scope of migrant households and the profiling of migrants abroad and remittance recipients in order to assess migrant investment preferences and capacities, remittance patterns and recipients financial behaviors, and
- capacity building needs for project staff, public services, FOs, service providers, women and youth.

275. *Participatory impact assessments.* An ex post impact assessment will be carried out after project closure. In addition, participatory impact studies on specific thematic and/or issues may be carried out as appropriate to assess the impact of keys interventions. Information on physical progress will be supplemented by visits to the targeted project sites or project beneficiaries' communities. All the PSU technical officers will discuss with farmers their perceptions of the project, focusing initially on outputs but later on outcomes. These field discussions will allow project managers and/or MoA authorities to assess project activities' perceptions by project beneficiaries and to make changes if required.

5.1.5 Supervision, mid-term review and completion report

276. *Project supervision.* IFAD will ensure overall ROOTS project technical, fiduciary and financial supervision and will undertake at least one supervision mission annually. This mission will include field visits for: (i) providing technical guidance; (ii) interacting with the beneficiaries to obtain their views; and (iii) evaluating project outreach and impact on the target group.
277. *Mid-term review.* A mid-term review (MTR) will be undertaken, during the first quarter of Project year 4. The main objectives will be to assess: (i) the project achievements against targets (ii) interim project impact; (iii) efficiency and effectiveness of project management; (iv) sustainability arrangements; (v) the validity of project design. The MTR team will also identify implementation constraints and measures to improve the project performance. Based on its findings, the project and its PIM will be adjusted for the remaining project life.
278. *Project Completion Report.* At the end of the project, the PSU will prepare a Project Completion Report (PCR), which will include an assessment of the achievements versus the planned project results. The PCR preparation process will include a validation workshop to ensure that key project stakeholders evaluate the project performance. This PCR will be submitted to the Government and IFAD within three months after project completion. The PCR preparation will include the capitalization of innovations, lessons learnt and good practice generated by the project. The PCR will assess the possible scaling-up of some of the project interventions. The internal PCR will be used as the basis for IFAD's PCR. The IFAD's PCR will be focus on an assessment of: (i) the project outcomes and their sustainability and (ii) the projects impacts.

5.2 Knowledge management

5.2.1 Knowledge management process

279. ROOTS will develop during its first year, a knowledge management framework with the support of a service provider. The monitoring and evaluation activities and outputs, outcomes and impacts of project interventions will be considered as the basis of the Knowledge management and learning process. This will feed the ROOTS implementation from the best practices and lessons learn to continuous improve its interventions.
280. Knowledge management will be based on two dimensions:
- i. "collection and analysis" of the knowledge generated through capitalization tools and process for making it accessible and explicit;
 - ii. "dissemination" by using communication for sharing it with the project stakeholders.
281. The capacity building and knowledge management and communication will guide the knowledge management and communication activities. It will specify the different communication products and specific tools to be developed, and the most appropriate formats. Knowledge management activities will be budgeted annually and monitored in the AWPB.

5.2.2 Learning and knowledge management process

282. *Learning and knowledge sharing.* In addition to the annual consultative forum and annual general staff meetings, learning and experience-sharing events for its stakeholders from the regional, field and community levels will be organized. ROOTS implementation experience and lessons as well as findings from studies, monitoring and evaluation reports will be presented, discussed and disseminated. The learning fora will be interactive platforms where the stakeholders at all levels will meet at agreed intervals

to self-evaluate activities, achievements and gaps, in the presence of facilitators to collectively improve quality and pace of implementation. Experience sharing visits among stakeholder groups to disseminate innovative approaches and best practices related to different project sub components will be an important element of the learning process.

283. *Regional and south-south triangular cooperation and knowledge sharing.* ROOTS will benefit from existing regional knowledge networks in the Western and Central African Region. IFAD regional hub in Abidjan, Dakar and Yaoundé will support the project to build and share approaches, tools, methodologies, technologies and best practices. In addition, South-South learning and sharing opportunities will be explored to ensure that mainly women and youth and their organizations are supported by the project for the knowledge and experience sharing. The exchange travels and visits in the neighbor countries will be promoted to learn from best practices. Regarding the remittances and diaspora investment topics which both represent an innovative area of intervention for IFAD but also beyond, the IFAD Financing Facility for Remittances (FFR) will promote knowledge sharing and skill transfers from individual consultants and advisory firms that have developed a collaboration history and a proven know-how on these topics, notably in Asia. Joint missions or training workshops with regionally based counterparts with strong local knowledge on rural finance, MSME finance and mobile money will be stirred up.

5.2.3 Communication strategy

284. For external and internal communication, the project will consider to diversify its communication strategy to reach various partners (e.g., beneficiaries, implementing partners, policy makers). Hence, ROOTS will use the most appropriate communication channels for exchange, sharing and learning purposes (e.g., radio, brochures, studies, articles, newsletter, television and social media). The project will package and disseminate information in appropriate formats. These products will be in hard and soft versions and dissemination will increasingly use social media in addition to print and web platforms.

285. A project website will be developed and operationalized with the support of a contractor under the responsibility of the CD/KM officer. This website will be used for disseminating information related to land and watershed development, vegetable and rice production technologies, value-chain development, women and youth organizations and agricultural job opportunities. The communication materials, if possible will be translated into local language to ensure wider dissemination.

286. ROOTS will pay particular attention to the communication on cross-cutting themes promoted by the project, such as social inclusion, gender mainstreaming, youth inclusion and adaptation to climate change. The ESMF contains a communication strategy on environment ,climate and social issues

III. Fiduciary arrangements and disbursement system

6.1 Governance and financial management risk evaluation

287. According to Transparency International (TI), Gambia has shown some improvement year on year in term of corruption. The country currently ranks 93rd out of 180 in TI's Corruption Perceptions Index, which positions the country in the medium inherent risk bracket. It is important to highlight that with an average score of 32, Sub-Saharan Africa is the lowest scoring region on the index.

288. Gambia's rural sector performance is assessed as high risk with a score of 2.8. IFAD's RSP score provides a focused assessment of potential risk in the rural sector in which IFAD operates. It provides an appreciation of the performance of rural sector institutions and policies.

289. According to the most recent Public Expenditure and Financial Accountability report (PEFA), published in 2015, the following areas require improvement: (i) External scrutiny and audit; (ii) Effectiveness of internal audit; (iii) Transparency, competition and complaints mechanisms in procurement; (v) Effectiveness in collection of tax payments; and (vi) Composition of expenditure out-turn compared to original approved budget.
290. The Government of the Gambia has undertaken several PFM reforms aimed at overcoming some of the challenges and weaknesses highlighted in the assessments. These include adoption and implementation of the PFM Act 2014, the National Audit Office Act 2015, and Financial Regulations 2016. Of course, implementation of these new initiatives is still at infancy, and measuring the impact of the new legislative framework and adherence thereto will take some time.
291. Starting before the time of the 2015 PEFA, the Government of the Gambia had commenced computerization of its systems using an integrated financial information management system (IFMIS), which runs on EPICOR. Upgrade and migration to a web based version of the software, Epicor v.9 was implemented and completed subsequent to the PEFA exercise, although use of the new version has been beset with a series of technical challenges. Consideration of yet another upgrade, this time to EPICOR v.10 is already being actively pursued, to address the recurring problems with version 9.
292. Other weaknesses noted relate to poor commitment control, less than effective tax collection procedures, and of course poor information availability on Government arrears. On the treasury side, the Treasury Single Account (TSA) is not yet operational, nor is there a clear strategy or roadmap for the establishment of the TSA, such as the legal and regulatory framework, nor a memorandum of understanding between the Gambia Central Bank and MOFEA on the same, a design of TSA process flow guidelines and infrastructure, nor a survey/census and consolidation of the fragmented bank accounts held across MDAs and local councils, including transit accounts managed by Gambia Revenue Authority into the proposed TSA. Efforts to address these and other issues are currently at different stages of implementation.
293. A new PFM Strategy 2016-2020 (published May 2016) was adopted, replacing the old PFM Reform Strategy (2010-2014). The new strategy is expected to ensure sustained progress in the PFM reform process, including introducing a sound Monitoring and Evaluation framework for monitoring future implementation activities, based on lessons learnt from the previous strategy and the output of the PEFA 2015. Building capacity in the institutions involved in the reform process is obviously critical. The Bank and other development partners can play a decisive role in this capacity building process, building on from previous and highly effective institutional support projects and interventions.
294. In light of all of the above, overall country fiduciary risk is currently rated Substantial, although most areas are on a distinctively upward and positive trajectory.

Table 22: Summary of FM Risks and mitigating actions

	Initial Risk Assessment	Proposed Mitigation	Final Risk Assessment
Inherent Risk			
1. TI Index ²	M	-	M
2. RSP Score ³	H	-	H
Control Risks			
1. Organization and Staffing	M	<ul style="list-style-type: none"> Clearly establish a cost-sharing policy with all donors involved in the implementation of the project in a transparent manner Organize training sessions on IFAD Anti-Corruption 	L

		policy for the project staff at least once a year	
2. Budgeting	M	-	M
3. Funds flow and Disbursement Arrangements	M	<ul style="list-style-type: none"> Government contribution in ROOTS will be mainly in the form of duties and taxes. 	M
4. Internal Controls	H	<ul style="list-style-type: none"> Closely monitoring of the staffing configurations to ensure that adequate staff is assigned to fulfill core project management functions. Performance of an in-depth due diligence before the selection of implementing partners and financial performance will be continuously assessed as well. 	M
5. Accounting Systems, Policies & Procedures	M	<ul style="list-style-type: none"> The financial system be updated to fully cover also integrate procurement aspects 	L
6. Reporting and Monitoring	M	<ul style="list-style-type: none"> Improve financial reports comparing actual expenditures with budgeted costs including variance analysis 	L
7. Internal Audit	H	<ul style="list-style-type: none"> Strengthened the internal audit unit in term of qualified, experienced and trained staff whose roles are defined by a comprehensive TOR 	M
8. External Audit	M	<ul style="list-style-type: none"> TORs agreed between OAG and IFAD at least one month prior to fiscal year end 	L
Project Fiduciary Risk @ Design	H		M

295. The overall FM risk is rated as 'high'. Main risks that need to be addressed are the of the capacity gaps in internal controls, internal audit, high reliance on implementing partners without adequate due diligence and concentration of multiple donor funded projects with different requirements managed by the same finance team. With mitigating measures in place, the risk would be reduced to medium.

6.2 Financial management and disbursement arrangements

Financial management organization and staffing

296. NEMA's current staff's handling of the project accounts, accounting, budgeting, audits, procurement and disbursement are considered to be satisfactory and fully consistent with the financial management rules and regulations of IFAD. Financial management staff of are well trained and experienced in carrying out their responsibilities. Therefore, to ensure smooth transition and business continuity, priority will be given to NEMA core team upon a satisfactory performance evaluation by an external independent office. Additional staff shall be recruited through a competitive process conducted in accordance with procurement guidelines, with posts open to highly qualified candidates from the public and private sector.

297. The financial management team is simultaneously implementing an African Development Bank, an Islamic Development Bank and an IFAD funded project with some key staff interchanged between the three. At the beginning of ROOTS, a cooperation Agreement between the institutions will be signed in transparent manner. Based on these documents and in the framework of ROOTS, all three institutions will convene and sign an agreement covering: (i) the administration of IFAD funds; (ii) the financial, fiduciary and procurement aspects specific to IFAD-funded activities; (iii) the operational arrangements

related e.g. to the supervision and the technical implementation support missions; and (iv) a cost sharing methodology for operating and administrative cost.

Budgeting and Budget control

298. *The government fiscal year runs from 1st January to 31st December.* Based on inputs from the stakeholder the PSU will prepare a consolidated Annual Work Plan and Budget (AWPB) in a format acceptable to IFAD and submit it to the Project steering committee for approval and to IFAD for its no-objection at least two months before the beginning of the relevant fiscal year. The format of the AWPB will indicate at least the following: expenditure items by activity, by component, by expenditure category, and by implementing entity, physical indicators by activity as well as funding requirements by financier on a quarterly basis. The AWPB must also include a procurement plan. The AWPB and its revisions will be promptly recorded in the project accounting software to allow for proper budget controls and generation of variance reports. Any incurred expenditures as part of the project will have to be part of the approved AWPB to be considered eligible for IFAD financing.
299. *Disbursement Procedures.* Based on ongoing Nema/Chosso project, the Designate Accounts for the IFAD financing will be operated and replenished following the Impress Account arrangements. Other methods of disbursement may include direct payments and reimbursements. Details concerning disbursement methods will be indicated in the Letter to the Borrower (LTb) and the Project Financing Agreement. In addition, after the IFAD financing has entered into force and the conditions for first disbursement have been duly complied with and upon request by the borrower, IFAD will make an initial deposit to the Designated Accounts equal to the requirements of six months implementation (Authorized Allocation). The authorized allocation will be outlined in the Letter to the Borrower as well.
300. *Withdrawal Applications.* The PSU will compile and consolidate, on a timely basis, eligible project expenditures for activities. From these expenditures, the PSU will prepare withdrawal applications (WAs) for eligible project expenditures for submission to IFAD for reimbursement or replenishment. All WAs will be signed by the authorized signatories. In December 2016, IFAD launch the IFAD Client Portal (ICP), an interactive platform which allows IFAD partners to securely conduct business electronically with the Fund. The portal will provide enhanced services, reduced cycle times, better visibility and greater access to data as well shorten the disbursement cycle of funds.
301. *Flow of Funds.* The project funds will be managed according to the procedures in force in Gambia, as well as those of IFAD in terms of the financial management of projects. The administrative and financial management procedures will be detailed in the Letter to the Borrower (Ltb) as well as in the procedure manual. GoTG is required to open a Designated account denominated in United States Dollars (USD) for the purpose of receiving the financing proceeds of the project. The designated account should be open in a bank acceptable to IFAD. Each implementing entity receiving funds from the PSU will be through a DA instead of maintaining an operating account to be used exclusively for project expenditure, for their incremental operating costs and other activities under the concerned component as it is recommended in IFAD projects. Even though the current practice is not recommended, but this should prevent adding another layer of approval which can slow down the disbursement process due to the Gambia challenging situation.
302. In addition, they must also establish an account in Gambian Dalasi to receive counterpart financing as well an account for project operations in a credible bank. The project Director and the Financial controller have the authorize signature on the DA. The Flow of funds is illustrated in Appendix.

Government contribution

303. In light of the relatively low counterpart funding levels in NEMA for the GoTG as a result of its weak financial position as one of the poorest countries in the world with GNI per capita of USD 449 in 2018, and its relatively significant debt burden, Government contribution in ROOTS will be mainly in the form of duties and taxes.

Beneficiaries' contribution

304. Those contributions can be in cash or in-kind depending on the beneficiaries' status. In terms of matching grants, the beneficiaries will be required to make their contributions as follows: (i) 10% cash (13,500 USD out of 135,000 USD) for new market oriented vegetable gardens; (ii) 5% cash (500 USD out of 10,000 USD) for youth led agricultural service provision businesses; (iii) 80% cash (400,000 USD out of 500,000 USD for 4P engaged SMEs; and (iv) 20% cash (16,000 USD out of 80,000 USD) for 4P engaged cooperatives. For the in-kind contributions, the PSU will provide a mechanism of valorization as well as in accounting with simple recording of equipment (Tractors, Power Tillers, Solar, Etc.), land and infrastructure (Buildings, Fences, Boreholes, Compost Chambers & Etc.). Reports will be provided to the PSU so that cash and in-kind contributions can be reflected in financial reports.

Internal Controls

305. Internal control procedures, according to best practices, will be detailed in the Administrative and Financial Management Procedures Manual. The PSU will ensure that adequate internal controls are in place and maintained at all times including (not limited to): (i) Adequate policies and procedures; (ii) an updated financial procedures manual, and accounting manual which are to be revised once a year; (iii) appropriate segregation of duties; (iv) Monitoring of fixed assets (tagging of all assets, maintaining of a fixed asset register and annual inventory exercises); (v) Periodic monitoring and review including comparison of physical and financial progress; (v) Proper authorization and access levels are maintained through the project parties; (vi) All trainings will be duly documented including a list of participants; (vii) All distributed goods, agricultural inputs etc., reconciled against procured goods and supported by distribution lists of sufficient detail. (viii) All implementing partners FM-capacity will be properly assessed before the awarding of the contract and their financial performance will be continuously assessed.

Financial Management system

306. With the exception of the lack of integration of the procurement and contract management module in FINEX, the financial management system in place is adequate and able to automatically generate most of the required financial reports and withdrawal applications and could satisfactorily be used for accounting and preparing periodic reports for ROOTS project. The Mission recommends that the financial system be updated to fully cover also integrate procurement aspects. In addition, the implementation of the IFAD Client Portal (ICP) in The Gambia will provide enhanced services, reduced cycle times, better visibility and greater access to data as well shorten the disbursement cycle of funds. For a successful roll out and implementation of the portal at country level, the Government is kindly requested to provide the updated list of individuals who are authorized not only to sign and deliver withdrawal applications but furthermore to also receive secure ICP authentication access from IFAD for the purpose of delivering such applications electronically through the ICP web site via secure government mailing address.

Accounting policies and procedures

307. As per current practice, the PSU will maintain its accounting records in accordance with IPSAS-cash basis of accounting. All accounting policies and procedures as well as controls procedures, related to the Project will to be clearly documented in the financial management manual.

Financial reporting

308. The PSU will prepare and submit to IFAD the following financial reports generated by the accounting software as follows: (i) Quarterly consolidated interim financial reports (IFRs); and (ii) Annual consolidated Financial Statements within three months after the end of the fiscal year. In addition, the financial reports will include at the minimum the following information: (i) sources and uses of funds by financing source and expenditure category; (ii) incurred expenditures by component and financing source; (iii) actual expenditures vs budgeted expenditures by financing source by component and category; (iv) designated account reconciliations; (v) Statement of Expenditures - Withdrawal Application Statement; and (vi) a fixed asset register. The financial reports will also include cash contributions from all financing sources, and In-kind contributions will be estimated and disclosed in the notes as well.

Internal audit

309. There is an internal audit Unit in place at the PSU of the Nema/Chosso project which is reporting directly to CPCU/MoA. However, the internal audit unit in place is inappropriately staffed and the terms of references are not in line with IFAD requirements. According to IFAD, the internal auditor should focus on activities undertaken in the field including: delivery of trainings, identification of civil works sites, performance of contractors, distribution of equipment, performance of implementing partners, matching grants, etc. and the related internal controls and segregation of duties. For the PSU of ROOTS, the mission recommends: (i) the internal audit unit shall be appropriately staffed with number of qualified, experienced and trained staff; (ii) Internal auditor will be provided with a comprehensive TOR; and (iii) the internal audit reports will be shared with the PSU for management's response before being finalized and submitted to CPCU and IFAD.

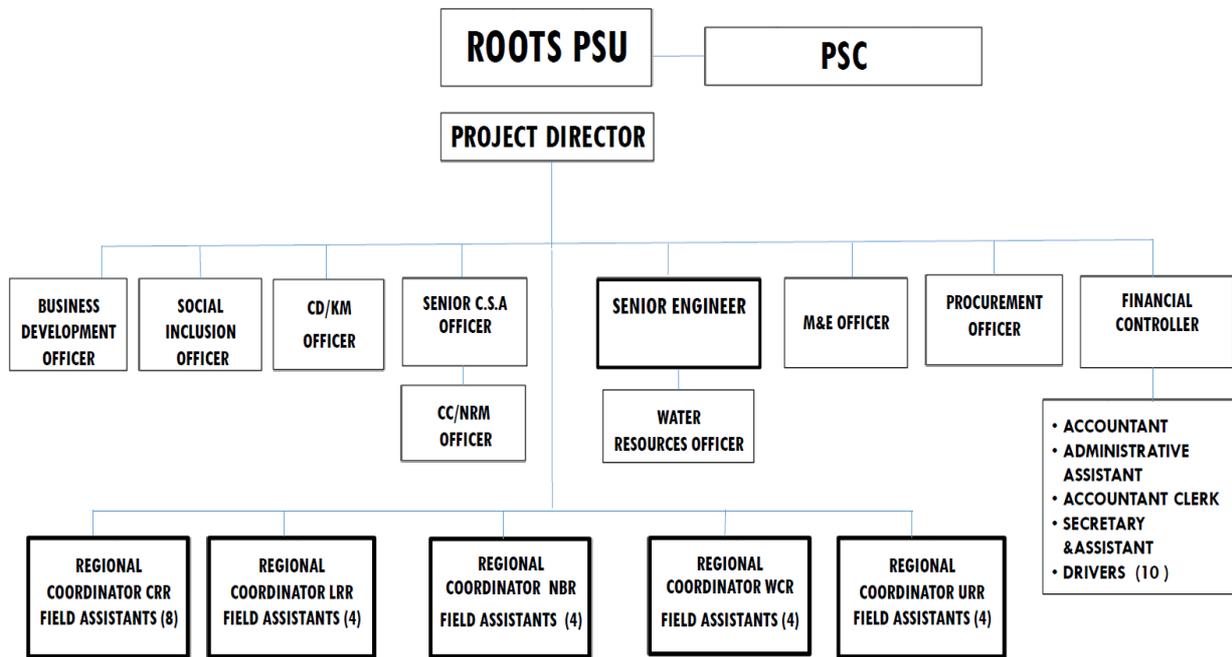
External audit

310. Just like Nema/ Chosso project, National Audit Office of the Gambia in will be responsible an annual financial audit for the project financial statements audit in accordance with INTOSAI/ISSAI standards and IFAD guidelines with project audits. The terms of reference for the audit will be prepared by the project and cleared by IFAD on annual basis. The purpose of the audit is to express an opinion on the financial statements. According to the new directive, the auditor has to give a single opinion on the financial statements. In addition to the audit report on the financial statement, the auditors will also prepare a Management Letter giving observations and comments on the internal control systems of the PSU as well as the implementing partners, and providing recommendations for improvements in accounting, records management, systems, controls, compliance with financial covenants in the Financing Agreement and compliance with previous year's auditors' recommendations. The audit report, including the management letter covering the audit observations on internal controls, will be submitted to IFAD within six months of the end of the fiscal year.

6.4 Implementation readiness

Appendices

Appendix 1. Organogram and terms of reference



Appendix 1.2 Core PSU staff ToRs

PROJECT DIRECTOR

Summary: the Project Director coordinates and facilitates overall management and day-to-day administration of the Project Support Unit (PSU).

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters, with regular visits in the field as required for monitoring, reporting and coordination

Specific duties and responsibilities:

1. Provides overall project coordination, management, administration and guidance ;
2. Coordinate preparation of annual work plan and budget;
3. Prepares and submits annual work plan and budget to MoA, MOFEA and IFAD
4. Submits periodic progress reports to MoA, MOFEA and IFAD
5. Manage and motivate project staff;
6. Facilitates and follows up on capacity building activities for project staff and relevant stakeholders;
7. Facilitates proper project resources disbursements, utilization and audit;
8. Authorizes project fund disbursement and transfers;
9. Ensure the completion of the procurement process and full compliance with IFAD and Gambia Government procurement guidelines;
10. Facilitates timely and appropriate project procurement activities;
11. Coordinate the contract administration of the service providers or specialists hired for implementation and assess their performance on a regular basis;
12. Secure the submission of a detailed expenditure report on quarterly advance payments;
13. Ensures the establishment and utilization of independent M&E and MIS systems;
14. Takes on responsibility for networking and communications to internal and external stakeholders;
15. Facilitates dialogue with relevant Government, international agency, private sector and civil society organizations;
16. Provides technical support and managerial guidance to regional implementation teams;
17. Reviews periodic progress reports from regions and provides appropriate and constructive feedback;
18. Manages human resource development, administrative and financial matters;
19. Approves staff recruitment, contract termination and extension;
20. Undertakes and approved staff performance evaluation;
21. Takes corrective measures as required;
22. Performs other related duties as agreed upon jointly by MoA and IFAD.

Qualifications:

Education: M.Sc. in Rural Development, Agronomy, Economics, Agricultural Economics, Anthropology, Sociology, Forestry or other related fields with sound knowledge of contemporary issues in the rural economy, agriculture and food security of The Gambia and natural resource management ;

Experience: At least 10 years proven experience in managing large, donor-financed projects. Experience with coordination, planning, monitoring and evaluation of project.

Skills and knowledge: Proven managerial, administrative and coordination skills; proven interpersonal communications skills; Computer literacy would be requisite and good command of spoken and written English; documented writing skills; ability to work independently and in multi-ethnic environments.

REGIONAL COORDINATOR

Reports to: Project Director

Summary: Regional Coordinator will manage all ROOTS activities at regional in close collaboration with the Regional Agricultural Director. He/she will manage the regional implementation team and coordinate day-to-day activities in the field. He/she will assume responsibility for providing technical support to field assistants and consolidation of planning of Field assistants. He/she will also assume planning, monitoring and evaluation responsibilities and, reporting technically to PSU technical officers and M&E Officer.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in the regional agricultural directorate covered by the project, with regular visits in the field as required for monitoring, reporting and implementation

Specific duties and responsibilities:

1. Assume HR and day-to-day management of the regional implementation team staff;
2. Contribute to planning processes and consolidation of annual work plans and budgets;
3. Lead the regional annual work plan and budget formulation process and implementation;
4. Act as secretary to the Technical Advisory Committee and engage technically with the project stakeholders at regional level;
5. Liaise and engage, as well as establish MoUs with regional implementing partners;
6. Put in place, support and maintain technically sound M&E systems;
7. Support consolidation of M&E data collection and consolidation from lower levels;
8. support to the setting up of Farmer Field Schools;
9. support to the training activities including training activities of POs/farmer groups;
10. support and initiate exchange visits between producer groups, off-takers, finance institutions and input suppliers;
11. assist in drawing up contractual agreements between producer groups and providers of specified services (off-takers); and
12. compile, prepare and submit timely field activity reports;

Qualifications:

Education: M.Sc. or Relevant degree in agriculture, agronomy, horticulture or related field.

Experience: Minimum 7 years, with at least a minimum of five years of experience in agriculture sector and managerial duties. Experience from Government and/or donor-funded projects preferred. Demonstrated knowledge of rice and/or vegetable production and marketing, with good social interaction skills.

Skills and knowledge: project management experience with M&E experience and/or experience overseeing M&E work. Good IT and language skills.

BUSINESS DEVELOPMENT OFFICER

Reports to: Project Director. Liaises closely with the international technical assistance of the project.

Summary: Up to six years; following successful completion of six-months probationary period; with renewable contract if performance is satisfactory.

Duration of assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters, with regular visits in the field as required for monitoring, reporting and coordination.

Specific duties and responsibilities:

1. Contribute to the promotion of ROOTS at national and regional levels, more particularly the AVIPs, the 4P approach and the various matching grant facilities offered by the project;
2. Liaise closely with the AVIP service provider to oversee the operationalization of value-chains platforms;
3. Contribute to the brokering of 4Ps between FOs and bigger buyers like the World Food Program (WFP) or institutional buyers (schools, hospitals, military etc.);
4. Coordinate the establishment of legal instruments for contract farming between participating FOs/MSMEs and buyers/off-takers mentioned above;
5. Liaise closely with the MIS service provider to oversee the operationalization of the market information system (MIS) in targeted gardens and rice cooperative societies;
6. Oversee the overall partnership/MoU with the Gambia Chamber of Commerce and Industry (GCCCI), which is responsible for the implementation of the overall sub-component 2.2 (4P financing);
7. Conduct a capacity needs assessment of GCCCI in order to increase its staffing and mobility to allow for a better presence in the field during the preparation of business plans for the cooperatives;
8. Together with ITA, develops differentiated business plan formats to be used by GCCCI when preparing business plan with applicants (youth, women *kafos*, SMEs/cooperatives);
9. Oversee the trainings on business plan preparation delivered by the ITA and targeting GCCCI;
10. Coordinate (together with the international technical assistance) the matching grant windows for youth (component 1), women-based new gardens (component 1) and, FOs and MSMEs (component 2). Pre-screen business plan profiles as an active member of the business plan review Committee;
11. Inform applicants about the approval/ rejection of their business plan by the review committees
12. In conjunction with GCCCI, help as needed eligible groups and MSMEs to open savings/deposit accounts in Credit Unions and MFIs;
13. Develop differentiated training plans for the MSMEs as necessary (post investment support to MSMEs – intervention area);
14. Prepare the AWPB of various service providers under component 2;
15. Oversee all the activities related to access to finance (partnerships with Credit Unions and micro-finance institutions), remittances and diaspora investments;
16. Prepare progress and impact reports on activities implemented;
17. Provide any other general technical assistance in business development matters relevant to the project and other ad hoc assignments deemed necessary by the Project Director;
18. Together with the capacity development and management officer, oversee the activities related to FOs capacity development

Qualifications:

Education: M.Sc. in agribusiness or related field

Experience: Min. 10 years of experience, at least 4 at management level, preferably from private sector, agribusiness or investment bank.

Skills and knowledge: preferable knowledge of business development and/or prior engagement with private sector. Experience with community mobilization. Computer literacy.

FINANCE CONTROLLER

Reports to: Project Director

Summary: The Financial Controller (FC) is responsible for the management of the Project accounts in accordance with the requirements of IFAD procedure.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters.

Specific duties and responsibilities:

- Manage the computerized accounting system and ensure daily backup;
- Report on a monthly, quarterly and annual basis identifying areas of divergence for projected cash flow;
- Implement robust internal financial control systems and policies to minimize the risks of fraud or errors in the financial statements and misuse of donors' funds;
- Ensure timely and accurate preparation of statement of expenditures;
- Prepare accounts for external auditors, and follow up on any audit queries/management letters;
- Ensure compliance with operating procedures as defined in the project documents including IFAD guidelines related to disbursements and audit;
- Coordinate and assemble the budgetary information required for the preparation of annual work plans and budgets;
- Keep an accurate and up-to-date records and documents in respect of all resources received under this agreement and any expenditure incurred with the funds made available;
- Ensure that all expenditures are in conformity with provisions of the project work plan and project budgets; and
- Undertake any other duties, within his/her area of competence, as assigned by the Project Director.

Qualifications:

Education: An acceptable accounting and finance qualification (BSc, ACCA or last stage of AAT).

Experience: minimum of seven years of experience at a senior level in a relevant public institution, private sector or in an international organization.

Skills and knowledge: proven skills in financial management of internationally financed development programme, haven a thorough understanding of accounting practices, finance and investment. Familiarity and experience in use of accounting software would be required.

PROCUREMENT OFFICER

Reports to: Project Director

Summary: The Procurement Officer is responsible for the procurement management. He/he will provide support in managing the procurement requirements of works, professional services and equipment in accordance with the IFAD requirements.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters.

Specific duties and responsibilities:

- Prepare a detailed procurement plan in line with the directives of proposed and approved AWPBs and IFAD guideline, in consultation with the Project Director and Components' Experts;
- Draft bidding documents; prepare bill of quantities and scope of work of the planned work constructions, professional services, and equipment procurements, in accordance with the IFAD requirements;
- Prepare and publish bidding announcements after clearance;
- Receive, open, screen, log and date stamps bid responses/quotations, mail as required and organize bids for review by the respective project expert;
- Take part into the tender evaluation committee works, including drafting the tender selection/ evaluation forms, announcing tender results, and preparing the procurement provisions that will be included in the contracts;
- Review periodically the implementation of the works that shall be in compliance with the procurement provisions, in close collaboration with Project Director and the technical experts;
- Organize and maintain computerized records containing vendor and bid information;
- Correspond with vendors regarding prices, product availability, and delivery;
- Respond to inquiries from PSU staff regarding requisitions, purchase orders, contracts and pricing information;
- Supervise and manage project vehicles and machinery maintenance;
- Review of ROOTS vehicles and machinery logbooks and files;
- Follow vehicles and machinery fuel consumption according to IFAD regulations;
- Take part into the provisional and final acceptance works including the preparation of the respective committees and the acceptance of the works/professional services/equipment delivered;
- Perform related work as required.

Qualifications:

Education: A Bachelor's Degree in Business Administration, Management, Finance, or a relevant field is required.

Experience: Minimum five years of experience in implementation of procurement procedures with international organizations

Skills and knowledge: Extensive knowledge of IFAD procedures, computer competence in software packages (Microsoft Word, Excel PowerPoint), Demonstrated the ability to motivate and promote collaboration among diverse team and team members. Demonstrated analytical and problem solving and negotiating skills with the ability to balance programme objectives and procurement requirements. Excellent written, oral and interpersonal skills and ability to communicate effectively with the financiers.

CAPACITY DEVELOPMENT AND KNOWLEDGE MANAGEMENT OFFICER

Reports to: Project Director

Summary: The Officer will lead activities related to capacity building, knowledge management and communication. Under direct supervision of the Project Director, he/she will work closely with the technical officers and regional coordinators.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters, with regular visits in the field as required for monitoring, reporting and coordination.

Specific duties and responsibilities:

1. Leads and takes responsibility for development and implementation of the capacity development, knowledge management and communication plan, ensuring internal and external soundness of the plan, quality of trainings provided and taking into account different needs at different levels;
2. Leads knowledge management and development activities, in collaboration with the M&E officer and technical officers;
3. Technically leads of the related to capacity building, knowledge management and communication at national, regional and community levels
4. Reviews and produces capacity building, knowledge management and communication annual work plans, budgets and reports on it;
5. Manages technical assistance by consultants related to capacity building, knowledge management and communication, monitors their performance and ensures timely delivery of quality outputs in relation to project activities, as well as prepares TORs;
6. Provides technical hands-on support to regional coordinators and field assistants to enhance the capacity of regional and communities level implementing partners and community-based institutions;
7. Provides or contributes to capacity building of staff, implementing partners and community-based institutions;
8. Takes responsibility to draft press releases when needed, targeting different groups;
9. Develops and takes lead on implementing a project communications strategy;
10. Develop and implement capacity building programmes in the areas of communications, knowledge management and case study development for project implementing partners;
11. Facilitate documentation and production of project success and case stories;
12. Takes responsibility to set-up and maintain a project website, within Government guidelines;
13. Manage communication with partners (Government, development partners, private sector, civil society, communities at large);
14. Support organization of various project exchange visits;
15. Keeps records and documents of activities related to capacity building, knowledge management and communication;
16. Works closely with the M&E officers to ensure proper, adequate and timely collection, storage and analysis of data;
17. Any other duties assigned by the Project director.

Qualifications:

Education: M.Sc. in agricultural economics, anthropology, rural development, communication, education or related fields.

Experience: Minimum 7 years of relevant experiences in capacity building, knowledge development/management and /or communication. Experience from a donor-financed project

an added advantage. Experience working with the media and different stakeholders, as well as events management

Skills and knowledge: language, literature and communication skills; experience in developing capacity building programme; demonstrated understanding of knowledge management; willing to learn and adapt; good interpersonal and communication skills; computing skills (word, outlook, excel, power-point).

MONITORING AND EVALUATION OFFICER

Reports to: Project Director

Summary: the M&E officer will be responsible for monitoring and evaluation of project performance.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters, with regular visits in the field as required for monitoring, reporting and coordination.

Specific duties and responsibilities:

1. Establishes and maintains project monitoring and evaluation systems in line with IFAD' RIMS;
2. Periodically monitors and evaluates project progress by visiting project interventions areas at all levels throughout the project period;
3. Fine tunes and concretizes project indicators at activity, output and outcome level;
4. Identifies data requirements at all levels;
5. Develops standard formats and reporting procedures at all levels;
6. Leads the undertaking of baseline, mid-line and end-line evaluations in line with rigorous impact evaluation methodologies;
7. Develops a capacity building plan and organizes trainings on M&E for all relevant project staff, stakeholders and implementing partners;
8. Provides direct technical support to partners ministries, regional level institutions, project stakeholders and community levels;
9. Supports the development of technical monitoring systems, specifically for the environmental and natural resources management;
10. Assumes responsibility /support setting up of a simple, implementable and adequate web-based MIS system for storing project data and reporting on outputs and outcomes;
11. Prepares and consolidates physical and financial monitoring of project performance;
12. Other tasks as assigned by the Project Director.

Qualifications:

Education: M.Sc. in Economics, Agricultural Economics, Statistics or a related field

Experience: Minimum 7 years of experience leading M&E and/or MIS development, preferably in donor funded projects

Skills and knowledge: Ability to provide technical support to colleagues; strong managerial skills and demonstrated capacity to manage people and interact with a wide range of partners, good interpersonal communication and reporting writing ability; advanced user of MS Word, Excel, Power Point and Outlook; proven user of GIS-based systems and statistical software; excellent quantitative and analytical skills.

CLIMATE SMART AGRICULTURE SENIOR OFFICER

Reports to: Project Director

Summary: The CSA Senior Officer will take responsibility for implementation of Component 1, reporting directly to the Project Director and supervising the Climate Change and Natural Resources Management Officer. The regional coordinators will report to the CSA Senior Officer on technical matters related to the component 1.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters, with regular visits in the field as required for monitoring, reporting and coordination.

Specific duties and responsibilities:

The CSA Senior Officer, assisted by the Climate Change Natural Resources Management Officer, will be responsible for the overall monitoring of implementation and providing quality assurance for the FFS and related extension programming. The individual selected for this position will ideally come from the DoA, and will need to have the appropriate skills and experience to serve in this role. The responsibilities the individual will hold and activities that this individual will oversee include:

1. The planning, implementation and quality assurance of all FFS and related extension field activities supported under the ROOTS project.
2. Provides overall coordination, guidance and quality assurance of Component 1 activities;
3. Contributes to the preparation of annual work plan and budget;
4. Submits periodic progress reports to the Project Director
5. Manage and motivate project staff contributing to Component 1 activities;
6. Facilitates and follows up on capacity building activities for project staff and relevant stakeholders;
7. Facilitates proper project resources disbursement and utilization;
8. Ensure the timely completion of component procurement process;
9. Coordinate the contract administration of the service providers or specialists hired for implementation and assess their performance on a regular basis, specifically:
 - a. FFS curriculum development and inclusion of FFS training modules at the relevant training institutes (e.g., Gambia College, etc);
 - b. Development of advanced FFS training modules for use by in the DoA pre-service and in-service training and the training of Village Extension Workers and District Officers;
 - c. The development and implementation of all extension field activities through contracted service providers – System of Rice Intensification, Participatory Learning and Action Research, Participatory Varietal Selection, Community-Based Seed System – and the training of field staff and farmer facilitators;
10. Contribute to project Monitoring and Evaluation;
11. Takes on responsibility for networking and communications to internal and external stakeholders;
12. Assists communications between relevant Government, private sector and civil society organizations;
13. Provides technical support and managerial guidance to regional implementation teams;

14. Reviews periodic progress reports from regions and provides appropriate and constructive feedback;
15. Undertakes staff performance evaluations;
16. Performs other related duties as assigned by the Project Director.

Qualifications:

Education: M.Sc. in Rural Development, Agronomy, Economics, Agricultural Economics, Anthropology, Sociology, Forestry or other related fields with sound knowledge of contemporary issues in the rural economy, agriculture and food security of The Gambia and natural resource management;

Experience: Demonstrated experience in agronomy, agricultural adaptation to and mitigation of climate change; experience with farmer field school implementation, with preferable knowledge and experience in rice and vegetable production systems. Experience with planning/overseeing larger scale investments preferable;

Skills and knowledge: Managerial, administrative and coordination experience; good interpersonal communications skills; computer literacy and good command of spoken and written English; documented writing skills; ability to work independently and in multi-ethnic environments.

CLIMATE CHANGE AND NATURAL RESOURCES MANAGEMENT OFFICER

Reports to: Climate Smart Agriculture Senior Officer

Summary: The Climate Change and Natural Resources Management Officer will assist the Climate Smart Agriculture Senior Officer in the implementation of Component 1 activities.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in PSU Headquarters, with regular visits in the field as required for monitoring, reporting and coordination.

Specific duties and responsibilities:

Assist the overall implementation and monitoring of the FFS and related extension programming. Responsibilities include assisting with:

1. Planning, implementation and quality assurance of all FFS and related extension field activities supported under the ROOTS project.
2. Coordination, guidance and quality assurance of Component 1 activities;
3. Coordination and support to the service providers or specialists hired for implementation, specifically those responsible for:
 - a. DoA pre-service and in-service training and the training of Village Extension Workers and District Officers;
 - b. System of Rice Intensification, Participatory Learning and Action Research, Participatory Varietal Selection, Community-Based Seed System – and the training of field staff and farmer facilitators;
4. Providing technical support to regional implementation teams;
5. Performs other related duties as assigned by the Climate Smart Agriculture Senior Officer and/or Project Director.

Qualifications:

Education: Minimum of a B.Sc., preferably M.Sc., in Rural Development, Agronomy, Economics, Agricultural Economics, Anthropology, Sociology, Forestry or other related fields with sound knowledge of contemporary issues in the rural economy, agriculture and food security of The Gambia and natural resource management;

Experience: Experience in agronomy, agricultural adaptation to and mitigation of climate change; experience with farmer field school implementation, with preferable knowledge and experience in rice and vegetable production systems.

Skills and knowledge: Experience with project implementation activities; good interpersonal communications skills; computer literacy and good command of spoken and written English; documented writing skills; ability to work independently and in multi-ethnic environments.

SOCIAL INCLUSION OFFICER

Reports to: Project Director

Summary: The Social Inclusion Officer will lead and will serve as resource person for the cross-cutting issues of gender mainstreaming, women's empowerment, youth and social inclusion, pro-poor targeting and nutrition. S/he will provide support for intervention design, planning, implementation, coordination, monitoring, evaluation, and administration of project activities, working closely with all project staff.

Duration of Assignment: Up to six years, following successful completion of six-month probationary period.

Duty Station: Based in PSU Headquarters, with regular field visits as required for monitoring, reporting and coordination.

Specific duties and responsibilities:

1. Develop gender and youth action plans at the beginning of the project as part of a participatory process, including GALS and any required strategies to include vulnerable groups; update the action plans and PIM as required.
2. Review project implementation processes (including AWPB, M&E reports, project progress reports, etc.) and outputs to provide feedback and suggestions to achieve best possible project outcomes with respect to gender equity, women's empowerment and youth mainstreaming.
3. Review project AWPB to ensure adequate attention (and resources allocated) to support women, youth and vulnerable groups in line with the project design document and PIM. Prepare specific activities and budgets, including for GALS, and monitor implementation.
4. Recruit, supervise, monitor and evaluate the performance of a GALS service provider to ensure delivery of quality services, accountability and timely reporting.
5. Work to sensitize all project staff, stakeholders and implementing partners on gender mainstreaming, women's empowerment, youth and social inclusion, pro-poor targeting and nutrition.
6. Ensure that systematic gender sensitization trainings and refresher courses are held for all staff at all levels, particularly for regional implementation teams and technical officers.
7. Develop and apply criteria to select specific communities, groups, Songhai participants etc. as outlined in the PIM, as part of a participatory process and working closely with component leaders.
8. Be available for support in related training/workshop preparation and follow up, particularly at the beginning of the project and in relation to mobilization strategy.
9. Review training materials and evaluate whether additional information is required for specific gender and nutrition issues.
10. Identify any capacity gap from project implementers that limit achievements of gender related objectives and propose practical solutions to address the gap.
11. Work with the M&E Officer to ensure that the M&E system is gender sensitive and tracks the different target groups. Ensure data analysis to data to inform project management.

12. Ensure that there are adequate communication materials on cross cutting issues, particularly for events organized at community level related to gender and nutrition awareness and education.
13. Ensure that materials developed by the project are gender sensitive in their language and image, and consider the literacy level of target groups.
14. Facilitate the production of case studies and life stories that can be used to bring evidence of change, including for use in trainings to provide role models.
15. Assist PSU staff, project stakeholders and implementing partners to access the knowledge and information they may require regarding gender issues.
16. Engage in policy dialogue when appropriate to strengthen an enabling policy environment for gender and pro-poor agriculture and rural development.

Qualifications:

Education: M.Sc. in agricultural economics, anthropology, rural development, communication, education, nutrition or related fields.

Experience: Minimum 7 years of relevant experience in gender and social inclusion. Experience from a donor-financed project an added advantage. Experience working with different and various stakeholders, including vulnerable people.

Skills and knowledge: Computer competence in software packages: Microsoft Word, Excel PowerPoint. Demonstrated ability to motivate and promote collaboration among diverse teams and team members. Demonstrated analytical, problem solving and negotiating skills. Excellent written, oral and interpersonal skills and ability to communicate.

FIELD ASSISTANT IN SUSTAINABLE RICE PRODUCTION

Reports to: regional coordinator

Summary: Field assistant sustainable rice production will facilitate, support, monitor and report on projects field activities related to the rice production. Under the direct oversight of the Regional coordinator, he/she will ensure timely and efficient implementation and coordination with local partners.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in the Regional agricultural Directorate covered by the project, with regular visits in the field as required for monitoring, reporting and implementation.

Specific duties and responsibilities:

- Ensure that ROOTS implementation guidelines are implemented in all projects field activities;
- Planning and management of duties assigned by regional coordinator in his technical matter;
- Be accountable to the regional coordinator for the implementation of all project activities his technical matter;
- Assumes overall responsibility for project activities related to his technical matter in assigned area;
- Implement project work plan based on approval and guidance of regional coordinator in his technical matter;
- Ensures proper level of effort provided to insure timely delivery of activities in his technical matter;
- Undertake any other duties, within his/her area of competence, as assigned by the regional coordinator.

Qualifications:

Education: Agriculture Diploma Certificate or related fields

Experience: At least one year of relevant experience in agriculture or food security project.

Working experience with local NGOs and/or international organization preferred.

Skills and knowledge: Strong usage of computers and office software packages (MS Word, Excel, etc.), Fluency in spoken and written English, good communication and presentation skills

FIELD ASSISTANT INTEGRATED MARKET ORIENTED VEGETABLE GARDEN

Reports to: regional coordinator

Summary: Field assistant integrated market oriented vegetable garden will facilitate, support, monitor and report on projects field activities related to the vegetable garden. Under the direct oversight of the Regional coordinator, he/she will ensure timely and efficient implementation and coordination with local partners.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in the Regional agricultural Directorate covered by the project, with regular visits in the field as required for monitoring, reporting and implementation

Specific duties and responsibilities:

- Ensure that ROOTS implementation guidelines are implemented in all projects field activities;
- Planning and management of duties assigned by regional coordinator in his technical matter;
- Be accountable to the regional coordinator for the implementation of all project activities his technical matter;
- Assumes overall responsibility for project activities related to his technical matter in assigned area;
- Implement project work plan based on approval and guidance of regional coordinator in his technical matter;
- Ensures proper level of effort provided to insure timely delivery of activities in his technical matter;
- Undertake any other duties, within his/her area of competence, as assigned by the regional coordinator.

Qualifications:

Education: Agriculture diploma certificate or related fields.

Experience: At least one year of relevant experience in agriculture or food security projects. Experience in working with local NGOs and/or international organization preferred.

Skills and knowledge: Strong usage of computers and office software packages (MS Word, Excel, etc.), Fluency in spoken and written English, good communication and presentation skills

FIELD ASSISTANT FARMERS ORGANIZATIONS CAPACITY DEVELOPMENT

Reports to: regional coordinator

Summary: Field assistant Farmers Organizations capacity development will facilitate, support, monitor and report on projects field activities related to the Farmers organizations capacity building. Under the direct oversight of the Regional coordinator, he/she will ensure timely and efficient implementation and coordination with local partners.

Duration of Assignment: one year with possibility of extension.

Duty Station: Based in the Regional agricultural Directorate covered by the project, with regular visits in the field as required for monitoring, reporting and implementation

Specific duties and responsibilities:

- Ensure that ROOTS implementation guidelines are implemented in all projects field activities;
- Planning and management of duties assigned by regional coordinator in his technical matter;
- Be accountable to the regional coordinator for the implementation of all project activities his technical matter;
- Assumes overall responsibility for project activities related to his technical matter in assigned area;
- Implement project work plan based on approval and guidance of regional coordinator in his technical matter;
- Ensures proper level of effort provided to insure timely delivery of activities in his technical matter;
- Undertake any other duties, within his/her area of competence, as assigned by the regional coordinator.

Qualifications:

Education: Agriculture diploma certificate or related fields

Experience: At least one year of relevant experience in agriculture or food security projects. Experience in working with local NGOs and/or international organization preferred.

Skills and knowledge: Strong usage of computers and office software packages (MS Word, Excel, etc.), Fluency in spoken and written English, good communication and presentation skills

FIELD ASSISTANT MARKET AND VALUE-CHAINS

Reports to: regional coordinator

Summary: Field assistant market and value-chains will facilitate, support, monitor and report on projects field activities related to the agriculture products value chain and agri-business. Under the direct oversight of the Regional coordinator, he/she will ensure timely and efficient implementation and coordination with local partners.

Duration of Assignment: Up to six years; following successful completion of six-month probationary period; with renewable contract if performance is satisfactory.

Duty Station: Based in the Regional agricultural Directorate covered by the project, with regular visits in the field as required for monitoring, reporting and implementation

Specific duties and responsibilities:

- Ensure that ROOTS implementation guidelines are implemented in all projects field activities;
- Planning and management of duties assigned by regional coordinator in his technical matter;
- Be accountable to the regional coordinator for the implementation of all project activities his technical matter;
- Assumes overall responsibility for project activities related to his technical matter in assigned area;
- Implement project work plan based on approval and guidance of regional coordinator in his technical matter;
- Ensures proper level of effort provided to insure timely delivery of activities in his technical matter;
- Undertake any other duties, within his/her area of competence, as assigned by the regional coordinator.

Qualifications:

Education: Marketing diploma certificate or related fields

Experience: At least one year of relevant experience in agriculture or food security projects. Experience in working with local NGOs and/or international organization preferred.

Skills and knowledge: Strong usage of computers and office software packages (MS Word, Excel, etc.), Fluency in spoken and written English, good communication and presentation skills

INTERNATIONAL TECHNICAL ASSISTANT (ITA) (SENIOR ENGINEER OF THE PSU)

1. *Objectives of ITA's Assignment.* For the efficient delivery of project outputs, quality infrastructure development and capacity building, an ITA (Senior Engineer) will be recruited. The ITA will be a core PSU staff and work in close collaboration with the Ministry of Agriculture –MoA. In addition, the ITA will give technical advices to the Project Director and the Project Steering Committee (PSC). This is necessary to ensure that the project is delivered on time and reported to the required quality standards in line with the design specifications and international good practices. The aim is, therefore, to provide expertise hands-on support and showcase best practices experiences to ensure that proper quality management and reporting system are in place to ensure proper progression throughout the project processing cycle and mentor the MoFWR-based National Technical Assistant (NTA).
2. *Institutional Arrangement.* With its office in the PSU, the ITA will work closely with the Project Director to enhance quality management (i.e. quality enhancement during FS&DD upstream-work, quality control during implementation) of the Sustainable Land and Water Development subcomponent under the Agriculture Productivity and Adaptation to Climate Change component of ROOTS. Specifically, the ITA will provide international best practice advices to the Project Director and oversee the third-party delegated contract management (DCM- see separate ToRs) public entity (who will support to project in the quality management of all contracts). The technical support the ITA will provide to the project will also include similar assistance to market infrastructure development activity under Inclusive Commercial Partnerships and Value-Addition component (component 2). In addition, the ITA will assist the PSU (i.e. Project Director and M&E officer), the MoA and other key stakeholders to play their respective roles effectively/efficiently.
3. *Scope of the Assignment.* The specific role covers providing technical advices and guidance on project management, starting from intervention site identification, participatory consultations/citizen engagement, FS&DD quality enhancement and product delivery through quality control, timescale planning process management, disbursement, monitoring/reporting, communication as well as containing and managing risks.
4. The responsibilities of the ITA will include but not limited to the following:
 - Assist the Project Director in the overall planning, review, site identification and FS&DD. This includes providing technical supervision, overseeing and routine monitoring of the works of the DCM public entity;
 - Provide technical advices on project management planning and perform AWPB;
 - Advise on communication management strategy including stakeholder analysis and engagement procedures, means, frequency, format and records of communications with different stakeholders within and outside the Project and reporting;
 - Oversee the quality management strategy thereby engaging with the DCM starting from the onset (site identification) and project completion and commissioning including providing hands-on support on enhanced quality standards, quality management procedures, quality assurance controls and reporting as desired;
 - Oversee the proper development of a typical irrigated gardens design/guidelines;
 - Systematically provide proper reporting templates of interventions, including providing advice on the timely/appropriate and adjustable configuration of management strategy/activities including control of the various project deliverables;
 - Provide advice on managing scope issues, reviewing project related changes escalated to the Project Sponsors including situation assessment, analysis and recommendation as required;
 - Advise on risk management strategy including risk identification, assessment, controls and mitigation;

- Undertake periodic monitoring and review of the project progress reports, intervention site identification and FS&DD status for each site, scope and timing, identifying potential gaps and overruns and suggesting solutions;
- Make sure that the status of FS&DD or ongoing construction in any region is instantaneously updated by working with the regions and overseeing the DCM and the project-wide instituted project status tracking and database update system;
- Oversee the DCM to ensure that problems are identified, reviewed and addressed before escalation. This include providing related updates to the Project Director.
- Monitor and alert the Project Director such issues as conflicts on the delivery of the project and provide technical advices in resolving them;
- Confirm that project activities are in compliance with agreed work plan and budget, procedures and standards;
- Reconfirm the appropriateness of selected intervention sites (through deskwork and field visits) and provide independent opinion about ongoing and completed sites;
- Provide technical and strategic guidance to ensure that the sustainability of completed sites are ensured through pre-informed, clear and agreed upon responsibility of operating and maintaining (O&M) them. This requires, among others, to ensuring that the system for collecting and managing fees for O&M and future replacement is instituted and responsible entities for O&M are consultatively identified with the required guarantee secured before the intervention starts.
- Support the Project Director in the follow up of action plans agreed with IFAD’s implementation support missions from-time-to-time;
- Shall from-time-to-time, organize capacity building trainings in related technical areas to assist the MoA and MoFWR staff in fostering the smooth execution of activities; and
- Assist the Project Director in any other ROOTS related matters/activities liked to his/her areas of specialization as deemed necessary.

5. *Deliverables.* The ITA will ensure that all the engineering aspect of ROOTS are duly guided and tailored for a successful project execution to meet international standards throughout the project processing cycle. Deliverables for this assignment include, but not limited, to submitting three hard copies and a soft copy of the monthly Technical Reports and quarterly Progress Reports of her/his activities to the Project Director. The Quarterly Reports would detail summary of milestones within the quarter, challenges and recommendation for way forward. However, a final report will be submitted by the ITA at the end of each milestone:

DELIVERABLES	TIME
Inception Report	Within two weeks of contract signature
Monthly Technical Reports	Within First week of the next month
Quarterly Progress Reports	Within the first week of a new quarter
Yearly Report	One week to the end of each year
End of contract	One month before end contract

6. Aide from the monthly and quarterly reports, ad hoc papers will be produced from-time-to-time on demand for the Project Director. This will include:

- Ensure that effective/efficient system of processing all planning and implementation reports with clear submission deadlines are instituted by overseeing the DCM;
- List of sites reviewed and technically cleared for upgrading/rehabilitation and those identified for new development;
- Consultancy reports reviewed and technically cleared including findings and recommendations become readily handy;
- Train the MoA staff to effectively/efficiently play their role in the project and undertake their professional role within the ministry;
- Timely on the spot technical advice to contractors/consultants through the DCM during joint field visits;

- Conduct a situational analysis of the project/contract management status and highlight areas of improvement to the DCM;
- Ensure that consolidated and verified roster of site intervention report categorized by status are developed and communicated by the DCM (for example, classified by: site identification, feasibility studies, detailed design, under review, approved, contract, supervision and competition) by intervention typology and resources level;
- Assist the Project Director in facilitating the Project Steering Committee (PSC) meetings;
- Ensure that all technical documents are organized and archived under appropriate category to warrant ease of accessibility as appropriate; and

7. *Profile/Professional Requirements.* The prospective professional is expected to have:

- A minimum of Master's degree in Irrigation Engineering, Soil and Water Resources Management with and other related fields and having a strong practical hand-on experience in irrigating development in western Africa, preferably in the Gambia;
- At least 15-20 years' experience in irrigation engineering projects FS&DD and contract management, ideally with accreditation;
- Experience of managing/dealing with public service giving organizations;
- Proven experience in strategic planning;
- Demonstrable experience and good understanding of issues and engineering best practices and projects development in irrigated agriculture. This include new development and consolidation/rehabilitation of such irrigation typologies as tidal irrigation (rice) and community gardens (vegetables) as well as development of valley bottom cascade and micro-catchment wet-season water control structures for rice cultivation.
- Experience in project risk assessment and mitigation;
- Demonstrable experience of advising on matters relating to complex project development and quality management to technical service providers and senior management as appropriate;
- The ability to motivate and engage with project stakeholders and user contactors;
- Effective written and verbal communication skills;
- Proven time management skills (incl. prioritization to ensure project goals are met);
- Knowledge of financial management systems experience in IFAD project would be an added advantage;

8. *Remuneration, Reporting and Timing/duration.* The remuneration of the ITA will be in line with what is obtainable internationally for such position and as agreed by both parties. The ITA will report to the ROOTS Director. Its activities shall commence immediately when he/she is duly engaged to perform such functions as earlier highlighted. The ITA is expected to work for a period of four-year subject to review and renewal each year after successful completion as the year ends.

9. *Resource Contribution.* PSU will provide a vehicle, office space, and access to computer network, internet and telephone as well as use of conference room and related expenses as required. This includes paying travel/per diem expenses of counterpart staff in case of field activities.

INTERNATIONAL TECHNICAL ASSISTANCE (4Ps, MATCHING GRANTS, INCLUSIVE COMMERCIAL PARTNERSHIPS, VALUE ADDITION)

Summary: these ToRs describe the roles and responsibilities of the International Technical Assistance which will be recruited by the Government to support the PSU, more particularly on all activities related to matching grants, inclusive commercial partnerships and value addition.

Duration of assignment: 2 years, potentially renewable. The international technical assistance will be recruited through an international call for tender.

Duty station: Based in the PSU, with regular field visits as required.

Specific duties and responsibilities:

1. Coordination of service providers/ institutions involved in the implementation of component 2 activities (MIS, AVIP, FO capacity development, business plan preparation, etc.) and sub-component 1.2 intervention area 3 (youth-led agricultural services provision financed through matching grants);
2. Support to the PSU (BDO) on managing the MG facility;
3. Support to the service providers/ institutions to prepare their annual work plan and budget (AWPB);
4. Support the PSU in the consolidation of all service providers' AWBPs;
5. Prepare detailed business plan templates for matching grant applications (for all three envisaged windows);
6. Capacity development to GCCI, NACOFAG, AVIP service provider on public-private producers partnerships (4Ps);
7. Capacity development to GCCI, NACOFAG, Gambian business development services (BDS) NGOs, companies and individual consultants on detailed business plan preparation. Joint work with these partners for the preparation of the first financing round of business plans for youth MG applicants;
8. Contribute to the identification of MSMEs to enter into 4Ps;
9. Contribute to the brokering of 4Ps within AVIPs and through direct contacts with bigger market operators (e.g. WFP, institutional buyers)
10. Prepare contract templates (together with a local lawyer) used by FOs, detailing volumes to be delivered, product specification, agreed price and dates of delivery;
11. Capacity development to the PSU and business development officer (BDO) for the overall implementation of component 2;
12. Support the policy dialogue activities through facilitation of roundtables and forums;
13. Developing business cases as needed for communication/ knowledge management purposes.

Criteria for selection:

- International nonprofit organization;
- Justify an international experience of at least 15 years in the implementation of donor-funded projects to support value-chains development, agribusiness, rural entrepreneurship, in West Africa countries, ideally with an experience in The Gambia;
- Experience as a project implementing agency: demonstrated ability to plan, budget and coordinate activities;
- Proven experience in the supervision of national implementation agencies;
- Experience in business plan development, building entrepreneurial capacity, especially for business development services NGOs, FOs and MSMEs;

- Experience in identifying and implementing business partnerships and monitoring public-private producer partnerships in developing countries.

TERMS OF REFERENCES (ToRs) FOR A THIRD PARTY DELEGATED QUALITY MANAGEMENT PUBLIC ENTITY TO PROVIDE IMPLEMENTATION SUPPORT TO

RESILIENCE OF ORGANISATIONS FOR TRANSFORMATIVE SMALLHOLDER AGRICULTURE PROJECT (ROOTS)

10. *Context.* The Gambia has become increasingly fragile over the past decade. Drivers of fragility are: (i) political instability; (ii) slow economic growth, high inequality, and unsustainable fiscal balances; (iii) the limited capacity of public institutions; (iv) structural vulnerabilities and exogenous shocks, (v) high population growth, (vi) marginal private sector job creation, and (vii) undiversified economy. The Fragile States Index (FSI) rating for The Gambia has steadily worsened in recent years, rising from 80.6 in 2010 to 89.4 in 2017, ranking 37th of 178 countries. The Gambia ranks 146th out of 181 countries on the ND-GAIN Index, making The Gambia one of the world's most vulnerable countries to adverse climate change impacts, with pronounced risks of higher temperatures, lower and more erratic rainfall, increased frequency of droughts and floods, significant loss of soil fertility, potential for submersion of large land areas and coastal erosion given rising sea levels. Combined, these factors are serious threats to agricultural productivity and national food security.

11. The Gambia is also among the poorest countries in the world. The percentage of households living below the poverty line of USD 1.25/day was 48.7 percent in 2015. Poverty is higher in rural areas (74 percent) and disproportionately affects children and women. The Human Development Index (HDI), valued at 0,460 in 2018, puts The Gambia in the low human development bracket (174 position) and reflects the "multi-dimensional" aspect of poverty, with low literacy and education levels, poor health indicators and weak government infrastructure and services. Sixty-two percent of Gambians live with less than USD 3.1/day with 48 percent living below the national poverty line of USD 1.25/day. High levels of poverty have translated into large-scale outmigration reducing the agricultural labour pool. The country is on the verge of a nutrition emergency with stunting affecting 25 percent of children under five years of age and undernourishment impacting 20 percent of pregnant women. These drivers of fragility hinder economic growth and prevent the country from achieving an agriculture-led rural transformation.

12. Agriculture, contributing 18 percent of the GDP, is predominantly rain-fed and is the principal source of livelihood for the rural population and for the majority of households below the poverty line. Analysis of the factors driving poverty indicate that rural poverty and food insecurity are closely associated with the rain-fed sector particularly in areas affected by conflicts and droughts.

13. Under its medium-term National Development Plan (NDP) 2017-2020, the GoTG has outlined its vision for addressing those challenges. The NDP envisages to transition to a green economy driven by small and medium enterprises (SME) private sector investment, the use of sustainable climate smart agricultural (CSA) technologies and the inclusion of youth and women as key economic actors in the transition and normalization of relations with Senegal.

14. The new 2019-2024 IFAD COSOP, is fully anchored to the NDP 2017-2020, and serves as a framework for contributions to poverty reduction, increased food security and youth employment through inclusive and climate resilient local economic opportunities. The COSOP strategic objectives (SO) target key outcomes, specifically: (i) SO1: the productivity and resilience of Gambian family farms are sustainably enhanced through accelerated adaptation to changing climate and riverine water availability, and (ii) SO2: Improve the management capacity and inclusiveness of professional farmers organizations/cooperatives and SMEs, and enhance farmers ability to secure access to communal assets, markets and profitable

agricultural value chains. The COSOP beneficiaries are smallholder farmers who are members of farmer organizations or cooperatives, youth and women and the vulnerable. The programme targets swamp rice and horticultural value chains where the overwhelming majority of farmers are women.

15. To operationalize the COSOP, the GoTG and IFAD prepared *The resilience of Organisations for Transformative Smallholder Agriculture Project (ROOTS)*. The proposed ROOTS project will be fully aligned with IFAD's strategic objectives and compliant with SDG 1 (no poverty), 2 (zero hunger), 5 (gender equality), 8 (decent work), 9 (industry, innovation and infrastructure), 13 (climate action) and 15 (life on land). The project is structured along two technical components, namely:

Component 1. Agricultural productivity and adaptation to climate change: The expected outcome is "environmentally sustainable, climate-resilient and nutrition-sensitive technologies and practices are adopted by the beneficiaries". Under sub-component 1.1, the Project will: (i) consolidate 1,300ha poorly performing tidal irrigation; (ii) develop 2,800ha new tidal irrigation on existing agricultural lands; (iii) develop 200ha new wet-season valley water control cascaded dykes; (iv) develop 800ha new micro-catchments runoff control dykes; (v) establish and strengthen Water User Management Units; and (vi) upgrade 20km causeways to access 800ha rice-growing swampy areas. In addition, the Project will upgrade 40 vegetable gardens and develop 30 new ones. Around the production sites, ecosystem preservation activities such as the rehabilitation of 1,300ha of mangroves and 1,400ha of community forests will be financed. Sub-component 1.2 will support (i) the access to various agricultural services (extension, input provision, financial education); the focus will be on the promotion of Farmers' field schools for rice and vegetables; (ii) the emergence of 240 youth-led businesses that mainly focus on the provision of services to the value chains; (iii) capacity development of grassroots farmers' organisations (FOs), so that they develop services for their members.

Component 2. Access to markets: The outcome of this component is "inclusive commercial partnerships between strengthened FOs and buyers through public-private producers' partnerships". Sub-component 2.1 will focus on value chain and market linkages. It will finance: (i) agricultural value-chain interaction platforms (AVIPs); one rice AVIP and one vegetable AVIP will be established in each region targeted by the project with key value-chain stakeholders (producers, processors, traders, transporters); in addition, the voice-based market information system introduced by NEMA will be scaled-up; (ii) capacity development of the National Coordinating Organization for Farmer Association in The Gambia (NACOFAG), as well as the national commodity organizations of food processors, rice and vegetable growers and; (iii) the construction of markets and roads infrastructures. Sub-component 2.2 will support business ideas of public-private producers' partnerships (4P), focused on post-harvest and value-addition. The Project will ensure that: (i) FOs and SMEs prepare high-quality business plans; (ii) matching grant resources are efficiently mobilized and utilized. As a pilot, and when possible, matching grant funds will be blended with private capital from the Gambian diaspora; and (iii) post-investment business support is available to sustain the 4Ps, through linking the SMEs to specialized business development services, including certification and food safety standards.

16. *Integrated investments.* The set of investments to be supported under component 1 include a strategic combination of civil engineering and appropriate electromechanical works for irrigated rice and vegetables production. The sustainability of these investments will be reinforced by forming/ strengthening governmental institutions (mainly the Ministry of Agriculture, MoA) and local communities (irrigators and their WUMUs⁶⁵). Support to irrigation infrastructure development (dry-season tidal irrigation; wet-season water control, and causeways construction [all for gravity rice production]) as well as pump-irrigated gardens will be provided through improved: (i) data acquisition and information sharing/networking

⁶⁵ Water User Management Units

(mainly on water resources) for informed decision making, (ii) participatory planning/design capacities of acceptable standards, (iii) regulatory compliance and monitoring, (iv) infrastructure development, (v) capacity building for improved land and water management, irrigation financial recovery and O&M, (vi) implement climate-resilient (climate-smart) agriculture and low-carbon development, and (vii) value-chain development and market linkages for the selected crops.

17. Quality management. From the experiences and lessons learned from the NEMA project and several other projects in Sub-Saharan Africa, irrigation development suffers from challenges of poor design and construction mainly due to inadequate attention and time given to quality enhancement aspects during design (upstream works) and/or quality control/supervision and contract management (downstream works). To avoid quality issues and ensure sustainable investments, the Project will put in place a quality management system. For this to happen, the Project will deploy a third-party quality management public entity (so called "delegated contract management" - DCM⁶⁶), to take the responsibilities of making sure that the abovementioned problems are detected and addressed early enough to ensure the proper and quality implementation. Among others, the DCM will support procurement of all services, goods and civil and electro-mechanical works. In pursuing this task, the DCM will institute an efficient review process with clear submission (to each other) deadlines as overseen by the Project Support Unit (PSU) (see Fig.1 for organogram). Depending on scope of the scheme, on average, it is envisaged that the review/clearance period per work item should not be more than a week.

18. Objectives of the DCM's assignment. To ensure effective use of project resources, delivery of quality infrastructure, proper capacity development at all levels and programme monitoring, a DCM entity will be tasked for four years (2021-2024) to support the two main implementing agencies of the interventions (MoA and MoFWR) and the PSU in managing the quality, cost-effective and timely implementation of project activities. To this end, the DCM is responsible for ensuring that required quality standards design specifications are met to reflect international good practices and the investments are within acceptable range of value for money.

19. Institutional Arrangement. The DCM entity will be hired by the PSU to work for the desired duration in line with the Country's existing enabling laws, rules and regulations as well as the governing terms and conditions to be agreed with ROOTS. The DCM is assumed to have its own office and mobility facilities to support the quality management aspect of the Sustainable Land Water Resources Development subcomponent under the Agriculture Productivity and Adaptation to Climate Change component of ROOTS⁶⁷.

20. Scope of the Assignment. The specific role covers providing world-class advisory to the PSU and technical clearances on (i) quality enhancement during feasibility studies and detailed designs (FS&DD) [i.e. 5,900ha tidal irrigation and wet-season gravity water control structures development (4,600ha new and 1,300ha consolidation)⁶⁸ and develop 80 irrigated gardens each 5 ha capacity each (40 existing gardens upgrading and 30 new gardens)], (ii) proper bid document preparation, (iii) proper procurement of service providers, suppliers and contractors, and (iv) ensuring quality control during implementation (that includes construction/installation, training and other capacity building interventions) throughout the project processing cycle. To this end, the DCM entity will develop a detailed work plan to meet the requirements of ROOTS and provide qualified and skilled international and national personnel in sufficient numbers and on time as stipulated under personnel requirements below.

⁶⁶ For review and technical clearance of feasibility studies and detailed designs (FS&DD) and thematic studies, quality control (supervision) of civil and electromechanical works and ensure that procured works, goods and services are of the desired quality.

⁶⁷ This includes providing similar support to the four market infrastructures to be constructed under Component 2.

⁶⁸ Consolidate 1,300ha poorly performing tidal irrigation; develop 200ha new wet-season valley water control cascaded dykes; 800ha new micro-catchments runoff control dykes; develop 2,800ha new tidal irrigation; and 20km causeways (each 5km for about 200 ha) total of 800ha rice growing swampy areas accessed.

21. *The responsibilities of the DCM entity will include but not limited to the following:*

- Assisting the PSU in ensuring that the interventions site identification, FS&DD, which include working drawings, construction methods, implementation schedule and bid documents are properly prepared. The DCM entity will also ensure proper procurement and implementation of activities under the Sustainable Land and Water Development subcomponent of ROOTS are to the desired quality through deskwork (review of documentations) and field visits. It grant technical clearances upon satisfactory delivery;
- Instituting a quality management strategy/system and a transparent and inclusive review and clearance procedures with submission and clearance dates of pertinent documents reflected. At the onset of its work, it will also prepare the tools and formats to be used to review, comment/feedback and clear the various tasks/contracts and documentations for their ultimate use upon receipt of clearance from the PSU.
- Clearing the quality of TORs prepared by the PSU to recruit consultants;
- Providing a hands-on support/training to the PSU staff, service providers, contractors and suppliers (as appropriate) on quality management starting from the onset (site identification), reporting, project completion and commissioning;
- Assisting on proper tidal irrigation, wet-season water control structures, causeways and irrigated gardens site identification and design as well as in preparing typical irrigated gardens design/guidelines;
- In the event that the consultant hired by the PSU (as cleared by the DCM entity) fail to deliver quality studies/designs on time, the DCM will be responsible to prepare these site designs for the respective sites to the desired quality on case-by-case basis;
- Instituting an automated tracking/reporting system of sites identified, progress, FS&DD, scope and timing, identified potential gaps and overruns and suggest optimal solutions using developed templates. This include, providing advice on the timely/appropriate and adjustable configuration of management strategy to control costs and deliverables;
- Ensuring attainment of all deliverables to the desired quality standards, review (through deskwork and field visits) and technically clear all reports/documents, measurements of works/services/goods and payments certificates submitted by supervising consultants/contractors as appropriate. This include, reviewing and technically clear project related changes (variations and additional works) and situation assessment/projections, analysis and recommendation as required;
- Advising the PSU on risk identification, assessment, controls and mitigation;
- Provide technical and strategic guidance to ensure that the sustainability of completed sites are ensured through pre-informed, clear and agreed upon responsibility of operating and maintaining (O&M) them. This requires, among others, a systematic collection and management of fees for O&M and future replacement is instituted and responsible entities for O&M are consultatively identified by the supervising consultant with the required guarantee secured before the intervention starts;
- Assist in selecting appropriate vocational training institutions and ensuring that all trainings are properly offered;
- Ensure that exit strategies are instituted for each scheme. This include ensuring that final versions of scheme O&M manuals with as-built-drawings, are prepared by the consultant/contractor before scheme commissioning;
- Verify that the water users' management units (WUMUs) are strengthened/established by the consultant to warrant realization of legal backing (registration) and having their bank accounts opened to allow them act as a viable irrigation operators; and
- Assist the PSU in any other related matters/activities as deemed necessary.

22. *Deliverables.* The ITA will ensure that all the engineering aspect of ROOTS are duly guided and tailored for a successful and timely project execution to meet internationally recognized specification/standards throughout the project processing cycle. Deliverables for this assignment include, but not limited, to submitting three hard copies and a soft copy of the monthly Technical Reports and quarterly Progress Reports of her/his activities to the NPC. The

Quarterly Reports would detail summary of milestones within the quarter, challenges and recommendation for way forward. However, a final report will be submitted by the ITA at the end of each milestone:

NO	DELIVERABLES	TIME
A	Inception Report	Within two weeks of contract signature
B	Monthly Technical Reports	Within First week of the next month
C	Quarterly Progress Reports	Within the first week of a new quarter
D	Yearly Report	One week to the end of each year
E	End of contract	One month before end contract

23. Aside from the monthly and quarterly reports, ad hoc papers will be produced from-time-to-time on demand to the PSU. This will include:

- Ensure that effective/efficient system of processing all planning and implementation reports with clear submission deadlines are instituted⁶⁹;
- Conduct timely onsite technical supervision and advice contractors/consultants;
- Conduct a situational analysis of the project/contract management status and highlight areas of improvement to consultants/service providers;
- Ensure that the project management and communication network (water MIS, W-MIS) are developed and operate by the respective consultants/contractors;
- Ensure that the water resources gauging stations and their management/communication networks are procured/installed at the desired quality standards and on time; and
- Ensure that all technical documents are organized and categorically archived to warrant ease of accessibility and use as appropriate.

24. *Inception report (IR)*. At the initial stage of its assignment, the DCM entity will collect all pertinent project documents, which include the ROOTS project design report (PDR), project implementation manual (PIM), costing, result framework and the ToRs of the ITA and will review them to have better understanding of the project and their alignment to the ToRs. Then, a report of its understanding of the ToRs, any substantial comments it has as well as a draft work plan of the activities detailing the work items, cost estimates, implementation responsibilities, tentative schedule/due dates and risk factors and the associated risks/assumptions and submit to the PSU within two week time. This will follow by subsequent IR review workshop attended by key project staff, the NPC and ITA to discuss on the DCM's IR presentation. Upon the review and final approval of the plan, the DCM will prepare its final work plan addressing the approval comments.

25. *Monthly report*. The reports shall provide a brief but comprehensive end-of-month progress assessment for all contracts/work items included in the approved plan. Tabulated and graphical representations of physical and financial progress compared with the work program and cash flow forecasts, relevant photographs and details of impediment to the works and proposals for overcoming them. These reports shall be submitted within the first week of the succeeding month.

26. *Quarterly Progress Reports*. These reports shall make use of the information previously reported monthly, but suitably modified to include, summarize, and draw conclusions on all pertinent issues concerning the assignment. In addition, the report shall summarize all activities, with solutions adopted, financial statements and any other relevant information considered necessary in respect of the services, works/installations and goods delivery. Each

⁶⁹ Incl. ensuring that consolidated and verified roster of site intervention report categorized by status are developed and communicated (for example, classified by: site identification, feasibility & other studies, detailed design, under review, approved, contract, supervision and competition) by intervention typology and resources level.

of these reports shall be submitted not later than the 7th day of the first month of the following quarter.

27. *Final Project Report.* Final project report, summarizing all the planned activities, including financial summaries and project implementation particulars. The report shall be submitted within one (1) month after completion of the services.

28. *Guidance to the DCM entity.* The entity will be based at its own office in Banjul. It will be responsible for all office consumables and facilities, transportation, accommodation, communication, support staff and support service arrangements and costs, as well as for all study data collection, survey, investigation, analysis, design and drawing/report production arrangements and costs. It will make provision for all such costs, as well as for its own assignment costs, as reimbursable expenses in the financial proposal. The DCM entity will ensure all its staff are computer literate and equipped with the necessary computers and ensure that all reports, technical notes and guidelines, training kits, etc. are electronically produced. Any designs reviewed will be presented using a GPS referencing, linked worksheets and computer-assisted drawings. To this end, it will provide staff with the necessary GPS equipment as required for positioning site inspections. It will also have effective access to all relevant documents as requested by them from each of the respective service providers, suppliers and contractors. In addition, all materials documentations reviewed, clearances and reports, including GIS, MIS, and other databases, survey results, computer programs will be the property of the Project. Hence, they will be provided to the Client in standard electronic formats, as electronic annexes to the related reports. Pertinent trainings, workshops and meetings⁷⁰ will be funded and catered for by the entity as part of the project costs.

29. *Profile/Professional Requirements.* The entity will be composed of both international and national professionals. Nominated international professionals should be able to provide leadership, oversight and coordination, to assure proper integration and quality of findings and results, to fill capacity gaps, and to bring advanced analytical skills and global experience to the assignment. Local professionals should be able to ensure study relevance and effectiveness in the context of prevailing local conditions, and to ensure sensitivity to social and cultural as well as to assist with linguistic aspects. Their inclusion in the team would also contribute to important local capacity building and to containing study costs. The nominated Team Leader must have been a permanent employee of the entity for at least two years.

30. All international staff should have at least a master's degree in their field of specialization or related fields, and at least 10 years of professional experience in related assignments, including working in western Africa and preferably in The Gambia. National staffs should also have similar years of professional experience in related assignments. Satisfactory execution of irrigation schemes FS&DD, supervision and capacity building will require a multi-disciplinary team with high levels of technical and social skills. Therefore, prospective entities are required to propose a team that will bring an appropriate mix of disciplines, educations, skills and experiences, a sound understanding of development issues, and strong international and/or regional experience on similar projects as deemed in this ToRs.

31. *Team Leader (International).* Should have at least a master's degree in irrigated engineering or in water resources management with 15 years' practical experiences in extensive management and coordination working in a developing country environment on irrigation or land and water resources management/development projects involving substantial engineering, social, institutional, environmental and economic components. Demonstrated skills in high-level policy dialogue, project planning, design and management, execution of irrigation related multi-disciplinary quality enhancement and control systems, preparation and conduct of training are essential. This quality has to be supported by sound technical expertise and understanding gained through a career in land and water resources management/development engineering, and experiences in directing, managing and

⁷⁰ Costs could include venue costs and travel, accommodation, meal and incidental costs of participants.

monitoring similar multi-disciplinary assignments in west Africa and preferably in The Gambia. The following skills will be required:

- Strong interpersonal skills and ability to create and maintain effective working relationships with multiple project partners;
- Ability to productively work as a member of a bigger team and as an individual;
- Takes initiative while maintaining the integrity of the team/ project goals;
- Capacity to prioritize and multi-task for the timely completion of assignments;
- Exceptional organizational skills;
- Flexible and adaptable;
- Works well under pressure;
- Exceptional visualization, writing and editing skills; and
- Interest in working with and learning from field teams and networks.

32. *Irrigation Engineer (International)*. Should have MSc degree in irrigation engineering and preferably, a hands-on experience in applied hydrology and at least 15 years' experience in medium and small-scale irrigation in The Gambian context. The later include experience in hydrologic and hydro-geologic assessment, irrigation planning and feasibility studies, topographic surveys using conventional and recent technologies, soil and land suitability assessment, agronomy and irrigated agriculture, hydraulic and irrigation structure design, rural roads/causeways planning and design for the abovementioned irrigation typologies. Given that he/she will play the key technical role of processing all irrigation development, he/she should have experience of working on tidal irrigation, wet-lands water control structures, causeways and community gardens planning, design, supervision as well as capacity building. In addition, direct work experience in managing salinity affected water and soils and shallow groundwater development in topographically flat terrains similar to The Gambian context is essential. Demonstrated ability in providing trainings and instituting sustainable O&M system are very important. The following skills will be required:

- Strong interpersonal skills and ability to create/maintain effective working relationships with multi-disciplinary team of experts;
- Ability to productively work as a member of a bigger team and as an individual;
- Takes initiative while maintaining the integrity of the team/ project goals;
- Capacity to prioritize and multi-task for the timely completion of tasks;
- Exceptional organizational skills;
- Flexible and adaptable as well as ability to work well under pressure;
- Ability to apply contemporary software for surveying, surface/groundwater hydrologic studies, irrigation design, construction projects implementation management and MIS;
- Exceptional visualization, writing and editing skills; and
- Interest in working with and learning from field teams and networks.

33. *Irrigation agronomist (International or National)*. Should have MSc degree in plant science/agronomy and a profound work experience in irrigated agriculture planning, design and implementation with focus to sustainable land and soil management, crop husbandry and irrigated agriculture. An educational background of BSc first degree in agricultural economics/marketing and MSc in agronomy or BSc degree in agronomy and MSc degree in agricultural economics/marketing are preferable with both cases requiring season hands-on experience in irrigated agriculture and agronomy. Given that he/she will play the key technical role of processing the crop husbandry/irrigated agricultural related aspects of the project, he/she should have experience of working on tidal irrigation, wet-lands water control system, causeways and community gardens planning, design, supervision as well as capacity building/training related activities. In addition, direct work experiences in managing salinity affected waters and soils under shallow groundwater conditions, management of plant pest and diseases (incl. IMP), land preparation, crop cultivation/harvesting, and appropriate post-harvest technologies as well as marketing in topographically flat terrains similar to The Gambian context is essential. Demonstrated ability in providing trainings and instituting sustainable crop management system are very important.

34. *Quantity surveyor (International or National)*. Should have BSc degree in Civil engineering and minimum of 10 years practical experiences in water resources construction related civil and electro-mechanical works design, construction, supervision, quantity survey as well as quality management of related works both at field and deskwork levels.

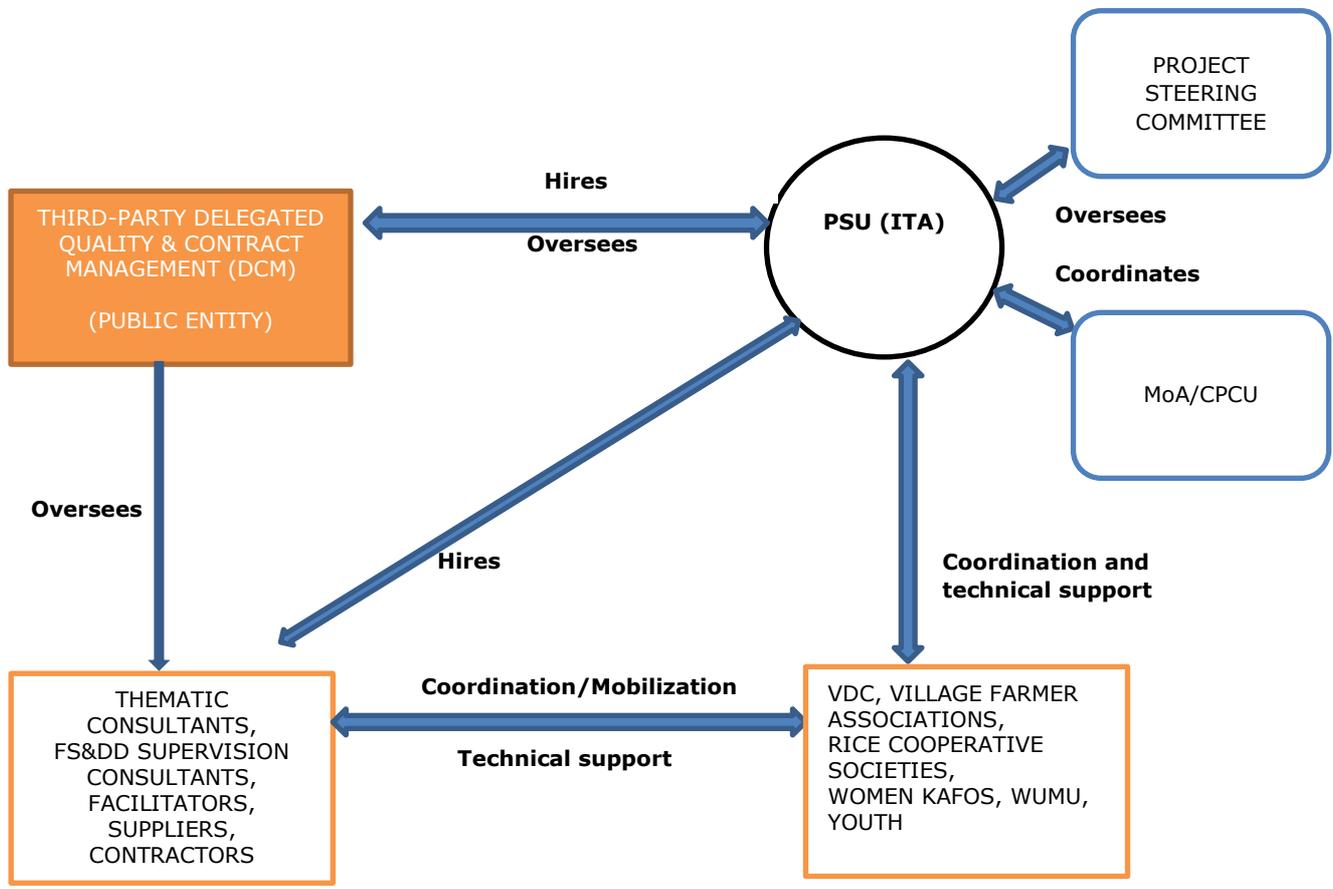
35. *Remuneration, reporting relationship and service duration*. The remuneration of the DCM entity will be in line with what is applicable to such public entity service provider involving professionals in The Gambia. The DCM entity will administratively report to the ROOTS PSU Director and technically to the ITA. The entity is expected to work for a period of four-year subject for review/renewal as each year ends.

36. *Executing Agency is the MoA as coordinated by the PSU in Banjul*. In addition, the MoFWR will be among the key players to implement the project. The project will be implemented in five regional states in The Gambia. These are: Central River, (ii) North, (iii) Lower River, (iv) West Coast, and (v) Upper River Regions.

37. *Conducts of the DCM entity*.

- Carry out the assignment with the highest degree of professionalism and integrity while demonstrating openness and transparency;
- Will not take any actions or be seen to be taking any actions, which may hinder or prevent the ROOTS from executing this assignment;
- Ensure that the assignment is concluded with the strictest adherence to all governing/applicable policies and regulations;
- Will not take any material decision pertinent to this assignment without the express permission and written consent of an authorized representative of the ROOTS;
- Will not, under any circumstances, discuss, divulge or use any information regarding this assignment or any other transaction conducted as part of the project, without the express written permission of an authorised representative of ROOTS.

Appendix 2. Sub-component 1.1 implementation



Appendix 3. List of proposed/possible rice production sites

Rice production system	Potential sites	Region	District	Potential Hectares	Intervention
Tidal/dry season	Jahally	CRR-S	Fulladu West	1,000	Full conversion from pump to new tidal & improved drainage
	Pacharr	CRR-S	Lower Fulladou	1,015	Full conversion from pump to new tidal & improved drainage
	Sukuta	CRR-N	Niani	105	New tidal irrigation on existing rain-fed rice field
	Barajalli	CRR-N	Niani	380	New tidal irrigation on existing rain-fed rice field
	Barajalli	CRR-N	Niani	40	Consolidation of existing scheme
	Danpha kunda	URR	Fulladu East	360	Consolidation improved drainage
	Other sites	Other	To be identified	1200	Consolidation, to be identified
Wet season water control	Ndemban Jola	WCR	Foni Brefet	200	Valley bottom dyke with spillway
	Jurunku	NBR	Upper Niumi	400	Micro-catchments dyke with spillway
	Toniataba	LRR	Jarra West	200	Causeway (5 km)
	Other sites	Other	To be identified	400	Micro-catchments dyke with spillway
	Other sites	Other	To be identified	600	Causeway (15km)
Total				5,900	

Appendix 4. List of potential vegetable gardens to be upgraded

(list not including potential other gardens to be supported)

NEMA-sponsored Gardens		FAO/EU MDG-1c sponsored Gardens	
Region	Village	Region	Village
WCR	Marakissa	CRR/S	Njoben
WCR	Sibanor	CRR/N	Madina Lamin Kanteh
WCR	Batabut	LRR	Sutukung
WCR	Bintang	LRR	Jappineh
WCR	Darsilameh	URR	Darsilami Mandinka
WCR	Bullock	URR	Dampha Kunda
WCR	Berefet	NBR	Nuimi Lamin
URR	Banni	NBR	Konteh Kunda Nigii
URR	Julangel		
URR	Limbambulu		
URR	Kulari		
URR	Garawol		
URR	Koina		
URR	Ndimbu		
URR	Sare Alpha		
URR	Baniko Ismaila		
CRR/S	Darsilameh		
CRR/S	Saruja		
CRR/S	Nanaba		
CRR/N	Makkasaderr		
NBR	Sara Kunda		
NBR	Kani Kunda		
NBR	Darsilameh		
NBR	Noo Kunda		
NBR	Salikenni		
NBR	Tambana		
NBR	Pakau Njoku		
NBR	Jurunku		
NBR	Berending		
LRR	Nema		
LRR	Manduarr		
LRR	Pakalinding		
LRR	Jarra Madina		

Appendix 5. Summary of all consultancies under sub-component 1.1

Assignment description	Type of consultant	Deliverable	Implementation/ oversight
<i>Infrastructure development and management for resilient rice cultivation</i>			
Conduct FS&DD, supervision and capacity building of all gravity irrigated schemes	Irrigation and drainage planning design and supervision consultant (international)	Complete FS&DD, supervision and capacity building reports of internationally acceptable standards	Procurement by MoA & PSU and oversight ITA/DCM entity ToRs by ITA and quality management by DCM
Conduct gauging stations inventory and gap study/ analysis	Senior water resource engineer with strong IT background & experiences (International)	Detailed geo-referenced national surface and groundwater resources inventory, gap analysis and recommendation report	Procurement by MoFWR & PSU and oversight NTA&ITA ToRs by ITA and quality control by DCM
<i>Market-oriented irrigation and integrated vegetable gardens</i>			
Conduct FS&DD, supervision and capacity building of all integrated gardens	Irrigation and drainage planning design and supervision firm (international)	Complete FS&DD, supervision and capacity building reports as well as modified integrated garden typical design of appropriate standards	Procurement by MoA & PSU and oversight ITA/DCM entity

Appendix 6. Matching Grant Financing Windows in ROOTS

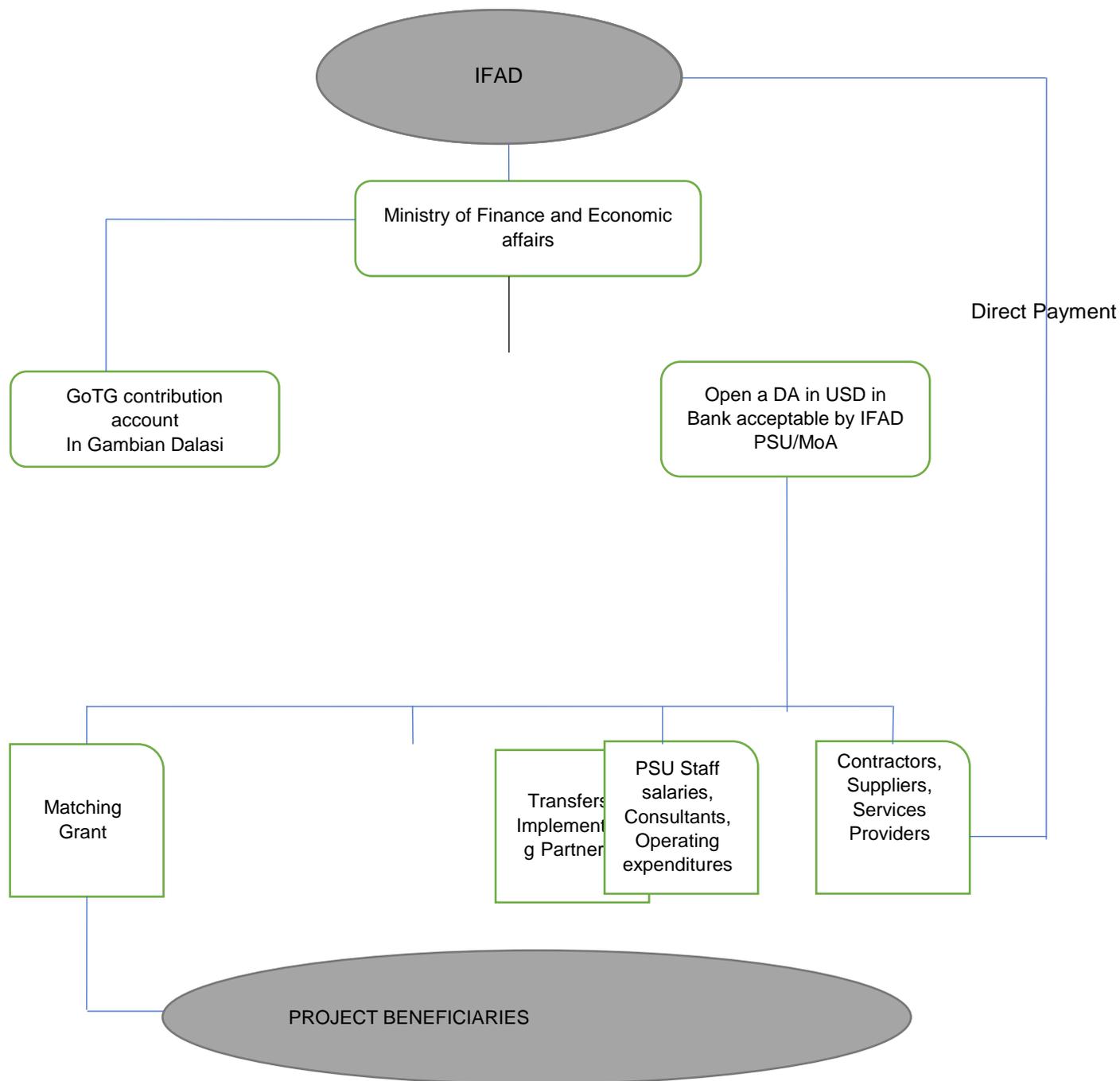
NEMA, the World Bank-funded GCAV and the African Development Bank-funded FASDEP have all used matching grant (MG) financing mechanisms to support beneficiaries in investing in productive assets (in particular, agricultural equipment). Yet, as the three experiences shared many commonalities in their approach (GCAV and FASDEP built on the NEMA approach), their limited performance on MG financing highlights several important lessons that have been taken into consideration into the design of ROOTS.

- *The limitations of one-size-fits-all approach.* The previous MG schemes had a single window approach with the same eligibility, financing conditions, and review and approval process for all beneficiary groups. As a result, more advanced beneficiaries (who could develop a solid business plan without project support and who had better access to capital) crowded out more vulnerable target groups, in particular youth and women.
- *High beneficiary contributions.* The MG schemes of the above-mentioned projects all required high beneficiary contributions (between 40% and 60%) that were difficult to achieve by target beneficiaries. The expected access to finance from commercial banks and MFIs did not materialize because of poor financial coverage and literacy, limited or no collateral, and high borrowing costs. As a result, matching grant funds have either not been used in totality or have been dedicated to richer beneficiaries, opening avenues for elite capture.
- *Lax eligibility criteria.* The matching grant eligibility criteria have been not sufficiently targeted to the expected beneficiaries and as a result, MG financing has often benefitted the more advanced producers or some of the local elites. Insufficient disbursement because these MG limitations has also forced projects to further relax the eligibility criteria.
- *Cumbersome review and approval processes.* While demonstrating a lot of effort in terms of due diligence for MG review and approval, the schemes have had lengthy processes with complex requirements. Not distinguishing between the different target groups and their ability to navigate business plan preparation, review and approval steps, the MG schemes' processes have led to further crowding out the intended beneficiaries and allowing for elite capture.

In response to these lessons, ROOTS has adapted its matching grant financing to include: 1) three different MG financing windows to address three specific groups; 2) adapted beneficiary contribution requirements depending on target group; 3) stronger eligibility criteria (including a financing window dedicated only to youth); 4) differentiated business plan preparation, review and approval processes, depending on investment amount and target group, and 5) support from an international technical assistance for enhanced MG management. Table 1 below summarizes some of the key characteristics of each MG financing window.

MG Financing Window		Target group	Financing conditions	Investment ceiling	Total number
W1: New market oriented vegetable gardens	Sub-component 1.1 Intervention area 2	more advanced producers (75-125 persons/garden) interested in engaging in commercial vegetable production as their main activity	Project: 90% Beneficiary: 10% (in-cash)	USD 135,000 (GMD 6,750,000)	30
W2: Youth-based services	Sub-component 1.2 Intervention area 2	young women and men (under 35 years) based in rural areas (or urban and peri-urban based, but willing to relocate) and interested in starting or growing an agri-business in the project areas	Project: 90% Beneficiary: 10% (in-cash)	USD 7,500 (GMD 375,000)	240
W3: 4P Financing	Sub-component 2.2	SMEs and/or FOs engaged in 4P arrangements and proposing post-harvest and value addition enterprises	SMEs/Green SMEs: Project: 20% Beneficiary: 80% (in-cash) FOs: Project: 80% Beneficiary: 20% (in-cash)	SMEs: USD 200,000 (GMD 10,000,000) Green SMEs: USD 250,000 (GMD 12,500,000) FOs: USD 50,000 (GMD 2,500,000)	SMEs: 16 Green SMEs: 4 FOs: 60

Appendix 7. Project Fund Flow Chart



Appendix 8. FMAQ

Topic		Response	Remarks
1.	Organization and Staffing		
	<p>Implementing Entity</p> <p>NOTE:</p> <p>In the case of a Government Department, the FMS should initially focus on the status of the country PFM systems in order to gauge level of fiduciary risks to which the proposed project may be exposed.</p> <p>Once an understanding of the PFM environment has been ascertained, the FMS should switch focus down to project level and focus on the department(s) or unit(s) that will financially administer the project.</p>		
1.1	Which entity is the LPA? What is the entity's legal status?	Ministry of agriculture (MoA)	R.A. S
1.2	Will financial management of the project be the responsibility of the LPA or be undertaken within the-PIU?	The financial management will be undertaken by the PSU which reports to the CPCU under the MoA	Decision pending on whether the current NEMA staff will be rehired to manage ROOTS.
1.3	Has the entity implemented a donor financed project in the past - if so, please provide details?	Yes. The PSU which is currently running NEMA is also responsible for the implementation of an ADB in addition to an IDB project.	No MoU in place to guide the parallel funding structure currently in place
	Staffing		
1.4	What is the (proposed) organizational structure of the accounting department? Attach an organization chart.	<ul style="list-style-type: none"> •Project Director •Finance controller •Accountant •accountant clerk 	Upcoming project is at its design phase
1.5	Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.	<ul style="list-style-type: none"> •Project Director •Finance controller •Accountant •accountant clerk 	The project staff TORs will be included in the procedure manual
1.6	Are written position descriptions that clearly define duties, responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?	Yes for on-going project. The TORs of the new project's staff members will be included in the procedure manual	

1.7	Is the finance and accounts staff adequately qualified and experienced?	Yes. The staff is adequately qualified and well versed in IFAD procedures.	
1.8	Are the project accounts and finance staff trained in IFAD procedures?	Yes. In addition to the procedures in place, IFAD also organizes training sessions for the project staff on its procedures	
Topic		Response	Remarks
1.9	Are any Finance Staff appointed on contract? What is the duration of the contracts Indicate key positions not contracted yet, and the estimated date of appointment	Financial Controller, Accountant, the Accountant Clerk and the Project Director are all under contract with the PSU.	NA
1.10	What is training policy for the finance and accounting staff?	No training policy in place to guide project staff's capacity building. Based on NEMA experience, the project does not have any policy that is guiding the training of staffs.	Process a need's assessment to understand and build a training policy accordingly. .
1.11	Is there evidence that finance staff are regularly transferred to other Government departments At what frequency are personnel transferred?	No. Some turnover at the initial implementation stages of the project which as stabilized since 2015.	NA
1.12	Is the project finance and accounting function staffed adequately?	Based on NEMA, the project finance and accounting function is staffed adequately.	

Topic		Response	Remarks
2.	Budgeting		
2.1	Who is responsible for preparation and approval of project budgets?	Senior PSU staff led by finance and M & E prepared project budget.	Routine process - After approval, the budget is then submitted to IFAD for comments and no-objection
2.2	Are project budgets prepared for all significant project activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?	Yes. For current project, the accounting software-FinEx is used to prepare a budget for all significant activities. Thus	The accounting software –FinEx seems to be working well with the current project

		providing a meaningful tool for monitoring performance.	
2.3	Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?	All the procedures will be included in the procedure manual	
3	Funds Flow/Disbursement Arrangements		
3.1	Does the Implementing Entity have previous experience of using imprest fund and donor funding SOE procedures? Were there any problems or issues encountered by project staff in the operation of the imprest fund or SoE procedures in the past?	In addition to NEMA, the PSU has the experience of using an impress fund for AFDB and ISDB as well as their SOE procedures.	

Topic		Response	Remarks
3.2	Does the Implementing Entity have experience in the management of disbursements from IFAD or other donors? Have there been the major problems in the past in receipt of funds by the entity?	Yes, in addition to NEMA, the PSU have experience in managing disbursements from AFDB and ISDB. No notable problems assessed with regards to the receipt of funds so far.	PSU applied IFAD thresholds to send some payment request for direct payment in order to avoid cash flow constraints.
3.3	Does the entity have/need to develop capacity to manage foreign exchange risks?	According to the PSU FC, they have the capacity to manage foreign exchange risk.	However, they requested the access to ICP reports in order to closely monitor the FX
3.4	Are the beneficiaries required to contribute to project costs? How are payments made for the counterpart funds? If counterpart funds are to be contributed in kind (in the form of labor), are proper guidelines formulated to record and value the labor contribution?	The matching grant in NEMA, required beneficiaries to contribute either in kind or cash	PSU has to develop a proper technic to evaluate the beneficiary contribution
3.5	Is part of the project implemented by communities or NGOs? Does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?	Yes, FC within PSU has a monitoring systems linked to the accounting system in order track the use of the project proceeds by such agencies.	

3.6	Describe (proposed) project funds flow arrangements; (attach flow chart and explanation of the flow of funds from IFAD, government and other financiers.	The fund flow through central bank into two special accounts (GMD and USD). IFAD fund flows into USD SA and Government fund flows into GMD SA.	
3.7	In which bank will the Impress Account be opened?	Central Bank of Gambia	
3.8	Are the (proposed) arrangements to transfer the proceeds of the financing (from the government / Finance Ministry) to the Implementing Entity satisfactory?	Yes, arrangements to transfer of fund are satisfactory.	For the Government, Funds flow to the entity is determined by both MofEA and MoA.

Topic		Response	Remarks
4.	Internal Controls		
4.1	Segregation of duties - are the following functional responsibilities performed by different units or persons: (i) authorization to execute a transaction; (ii) recording of the transaction; and (iii) custody of assets involved in the transaction?	Yes, PSU has a proper segregation of duties	Refer to the PIM and procedures manual
4.2	Are the functions of ordering, receiving, accounting for, and paying for goods and services appropriately segregated?	Yes, the procurement does the ordering, the administration receptions, accountant records and pays the goods and services requests.	
4.3	Are bank reconciliations prepared by someone other than those who make or approve payments?	The accountant does the bank reconciliations and the FC reviews and approves.	Details included in the procedures manual
5.	Accounting Systems, Policies and Procedures		
5.1	Does the entity have an integrated accounting system that allows for the proper recording of project financial transactions, including the allocation of expenditures in accordance with the respective components, disbursement categories, and sources of funds? Will the project use the entity accounting system?	PSU has an integrated accounting system (FINEX) that allows recording of project financial transactions, in accordance with the respective components, disbursement categories, and sources of funds.	

5.2	Are controls in place concerning the preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained?	Transactions are prepared by account clerk (vouchers) and accountant reviews, FC authorizes the payment and the project director approves the transaction	
5.3	Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?	The chart of accounts can capture and report on all project activities and it can be update based on new charts created	
5.4	Can cost allocations to the various funding sources be made accurately?	Yes for IFAD and government funding, the accounting system records all cost by funding sources.	There is no guideline in terms of cost sharing amongst different funding sources about operational cost
5.5	Are the General Ledger and subsidiary ledgers reconciled and in balance?	The current accounting system produces the General Ledger and subsidiary Ledger that is reconciled in balanced	R.A. S
5.6	Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?	Yes, all vouchers are printed, supported with relevant documents and filled.	These files are transferred at the end of the year in the archive.
5.7	What is the basis of accounting (e.g., cash, accrual)?	IPSAS cash basis accounting	
5.8	What accounting standards are followed?	IFRS in accordance with IPSAS cash basis	

Topic		Response	Remarks
5.9	Does the project have an adequate policies and procedures manual to guide activities and ensure staff accountability?	Yes, NEMA has an adequate policies and procedures manual to guide activities and ensure staff accountability.	The procedures manual needs to be updated periodically.
5.10	Do procedures exist to ensure that only authorized persons can alter or establish a new accounting principle, policy or procedure to be used by the entity?	The roles with authority to alter or establish a new accounting principle, policy or procedure to be used are indicated It is indicated in the procedures	Refer to procedures manual

		manual.	
5.11	Is there a written policies and procedures manual covering all routine project financial management activities? Are manuals distributed to appropriate personnel?	The procedure manual covers all routine project financial management activities.	All staff, including the project director ,and keys staff including administration were given the procedure manual. Also, PSU has provided a copy of the manual for all staff.
	Payments		
5.12	Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?	Yes, all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment	Evidence reviewed
	Cash and Bank		
5.13	Does the organization maintain an adequate, up-to-date cashbook, recording receipts and payments?	Yes. The financial system maintains an electronic cashbook that records all payments and receipts adequately and up to date.	
5.14	Are bank and cash reconciled on a monthly basis?	Yes, the monthly reconciliation is available	
5.15	Indicate names and positions of authorized signatories of project bank accounts.	Project director and financial controller	The backup signatories are financial controller at CPCU and Permanent secretary of MoA
	Safeguard over Assets		
5.16	Is there a Fixed Asset accounting system, with a Fixed Asset Register, fully implemented - as part of an integrated accounting system? Is the system maintained up to date?	The current accounting system has a fixed Asset register integrated and maintained up to date.	

5.17	Are there periodic physical reconciliation of fixed assets and stocks?	FA register is maintained and reconciled periodically.	
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Topic		Response	Remarks
Other			
5.18	Has the project advised employees, beneficiaries and other recipients to whom to report if they suspect fraud, waste or misuse of project resources or property?	Some Project staffs have awareness of IFAD anti-corruption policy.	PSU does not conduct routine training for all staff members.
5.19	Do policies and procedures clearly define conflict of interest and related party transactions (real and apparent) and provide safeguards to protect the organization from them?	Yes, the procedures manual clearly indicates	
5.20	Do controls exist for the preparation of the project payroll and are changes to the payroll properly authorized	The payroll is prepared through excel and posted in the system	The current accounting software has a payroll system which is not utilized.
6.	Reporting and Monitoring		
6.1	Does the reporting system need to be adapted to report on the project components?	No, the current reporting system is adequate	
6.2	Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and the frequency of production.?	Yes, PSU produces quarterly physical and financial monitoring reports, interim financial reports and audited and unaudited reports	
6.3	What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to useful to management for decision making?	Financial statements/interim FS are prepared quarterly, semi-annually and annually.	
6.4	Do the financial reports compare actual expenditures with budgeted and programmed allocations?	Currently PSU produces a report that compares actual expenditures with budgeted	That report needs to be improved to include the variance analysis
6.5	Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means?	FINEX automatically produces all financial reports.	

6.6	(In case of need of consolidated financial statements) Is the accounting system sufficiently equipped to ensure proper consolidation of entities' financial data?	NA	FINEX the has capacity to produce consolidated reports if properly set up
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Topic		Response	Remarks
Information Systems			
6.7	Is the financial management system computerized?	Yes, the financial management system is computerized	
6.8	Can the system produce the necessary project financial reports?	Yes, FINEX produces all the report according to IFAD requirements	
6.9	Is the staff adequately trained to maintain the system?	Yes, the staff are adequately trained to maintain the system as users	All technical support is provided by local consultant
6.10	Are adequate systems in place to "back up" financial records	PSU has an automatic backup system.	Email is sent to FC at closing as evidence of successful backup.
7. Internal Audit			
7.1	Is there an internal audit department in the LPA?	Yes, there is an internal audit department.	The internal audit department is run by one person for all projects under the MoA (currently 8 projects).
7.2	What are the qualifications and experience of internal audit department staff?	•Bachelor in accounting with more than 20 years of experience in private and Government	The department needs to be reinforced with more staff with the proper qualification
7.3	To whom does the internal auditor report?	He reports to the CPCU Director	
7.4	Will the internal audit department include the project in its work program?	The internal auditor is not able to meet his work program due to workload	Throughout the year, he has to manage eight projects.
7.5	Are actions taken on the internal audit findings?	He cannot properly oversee his findings due to the workload	This department needs to be reorganized with more staff with proper

			qualification and adequate TOR
8.	External Audit		
8.1	Who is the external auditor of the entity?	Supreme Audit Institution of Gambia	
8.2	Are there any delays in audit of the entity? When are the audit reports issued?	The audit reports are always submitted on time, meaning before 30/06/N+1	
8.3	Is the audit of the entity conducted according to the International Standards on Auditing?	Yes. the audit of the entity is conducted according to the International Standards on Auditing	
8.4	Were there any major accountability issues brought out in the audit report of the past three years? Were there any issues noted in prior audit reports related to the operation of project imprest accounts or use of SOE procedures?	No No	The latest supervision mission however reported an overpayment to a contractor that need to be clarified
Topic		Response	Remarks
8.5	Will the entity auditor audit the project accounts or will another auditor be appointed to audit the project financial statements?	Gambia supreme audit institute will be auditing the project financial statement	
8.6	Has the project prepared acceptable terms of reference for an annual project audit?	Yes, the project prepared acceptable terms of reference for an annual project audit which is reviewed and approved by IFAD	

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 9: Integrated Risk Framework (IRF)

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Risk categories	Risk Probability	Risk Impact	Mitigations/comments
1. Political and governance	Medium	Medium	Risk of coordination problems between ministries and continuous government reforms . IFAD to develop close collaboration with ministries involved in programme implementation to strengthen the project institutions for an enhanced coordination
2. Macroeconomic	High	Medium	Debt restructuring, mobilization of financing, obtaining high-level governmental support , avoid disadvantageous exchange rate as well integrate risk into budgeting process and engage GoTG to ensure availability of counterpart funds.
3. Sector strategies and policies	Medium	Medium	Policy-relevant knowledge products based on project evidence, promoting inclusive policy dialogue, integrating perspectives of different stakeholders, proper coordination between different stakeholders, building institutional capacities. Promoting effective governance mechanisms with appropriate incentives for implementation, building institutional capacities.
4. Technical aspects of project or program	Low	Medium	Given that the project focuses on climate resilient productivity enhancement and value chain development rather than being an emergency relief project, the new project must be demand rather than supply driven and work with those groups who will make modest contributions to investments. IFAD has vast experience and evidence of good practices and approaches in Sudan the Gambia (and other countries in the region) on climate change vulnerabilities, water and land management and poverty drivers among small crop farmers, that the project design will build on.
5. Institutional capacity for implementation and sustainability	Medium	Medium	The project will make investments in capacity building for the MoA and public and private sector engineers. The design will also benefit from important lessons learned from previous projects to ensure smooth implementation and capacity of actors will be built.

Risk categories	Risk Probability	Risk Impact	Mitigations/comments
6. Financial management	High	Medium	Measures proposed to mitigate these risks include: (i) establishing a cost-sharing policy with all donors involved in ROOTS project implementation in a transparent manner; (ii) strengthening the internal audit unit in terms of qualified, experienced and trained staff whose roles are defined by a comprehensive TOR; (iii) organizing training sessions on the IFAD Anti-Corruption policy for the project staff at least once a year; (v) improving financial reports comparing actual expenditures with budgeted costs including variance analysis; (vi) closely monitoring the staffing configurations to ensure that adequate staff is assigned to fulfill core project management functions; and (vii) performing in-depth due diligence before the selection of implementing partners. The financial performance will be continuously assessed as well.
7. Procurement	Medium	Medium	Construction can only take place during the six month dry season thus delays engender a one year postponement. To mitigate this risk, IFAD will provide technical and management assistance to ensure timely development of tender documents and associated processes and will proactively engage with senior MoA personnel to ensure rapid evaluation of tenders. Additionally IFAD recently has given great attention to enhancement of the projects' procurement processes and WCA is implementing Prime and Avanti initiative which will benefit to this project.
8. Stakeholders	Medium	High	Community and intercommunity participatory land use mapping and planning, negotiation and agreements on user rights backed up by a conflict resolution mechanism,
9. Environment and social	Medium	High	Promoting sustainable and climate resilient agricultural practices Concrete adaptation measures and practices Gender-sensitive programming and inclusion of women in defining access to resources ensuring their rights, promoting nutrition sensitive project.
Overall	Medium	Medium	IFAD has a long experience in the Gambia and managing it project in a risky environment. Lessons learned from concluded and ongoing in-the field projects, in addition to the ICO's well-established relations with the stakeholders at different decision-making levels will shed light the development of the new program and help mitigate the above-identified risks.

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 10: Exit Strategy

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 10: Exit Strategy

1. Active participation of beneficiaries and local structures in all aspects of the project implementation cycle be the determining factor to ensuring project sustainability. At the grassroots level, beneficiaries particularly women association, SMEs and FOs will participate into the 4P approach. The overall capacity building strategy of the project at all level will enhance the institutional and individual capacities to sustain the project. Grassroots structures and local institutions will be strengthened with the "learning by doing" methodology to enable them to acquire the knowledge necessary for the sustainable management of natural resources and climate resilient agriculture, value chain development. Through PrimE and AVANTI initiatives, the project will enhance the capacity of staff to deliver on impact beyond the project lifecycle.
2. Active participation of beneficiaries and local structures in all aspects of the project implementation cycle be the determining factor to ensuring project sustainability. At the grassroots level, beneficiaries particularly women association, MSMs, Cooperatives, will participate into the 4 P approach. The overall capacity building strategy of the project at all level will enhance the institutional and individual capacities to sustain the project. Grassroots structures and local institutions will be strengthened with the "learning by doing" methodology to enable them to acquire the knowledge necessary for the sustainable management of natural resources and climate resilient agriculture, value chain development. On water resource management, the MoE will sustainably monitor water resources and enter into trust-based policy dialogue with Senegal to address cross-border challenges (e.g. sustainable management of The Gambia River watershed). FFS, up to now supported by ad-hoc project support, will become an integral part of the national Agricultural Extension system of the MoA and the main learning and knowledge transfer approach to promote climate smart agriculture practices (e.g. SRI, composting and drip irrigation). Moreover, sustainability will be ensured as the project will be implemented through the existing public institutions at all levels, and also due to the MoA's commitment to mobilize its regular staff and facilities for timely implementation of the project. The new decentralised PCU unit in the 5 regions will contribute to ensuring a long term sustainability of the project beyond its lifecycle
3. At ROOTS' exit, youth incubators supported by the project, such as the well-respected Songhai centre, will propose specialised, service- and business-oriented training curricula to sustainably prepare young people to enter the job market and better harness opportunities in innovations and agribusiness entrepreneurship. By connecting the youth to a network of private enterprises willing to contribute to internship and TVET programs, the Songhai centre will support the access to decent work opportunities across the agri-food chain, beyond casual or seasonal work that currently prevail. The project will finance awareness raising, business plan preparation and post-investment monitoring and support and introduce matching grants schemes.
4. The project will empower FOs at various levels by following a holistic capacity development approach. At the end of the project, the empowered FO umbrella organization (NACOFAG) will deliver better services to its members on cooperative governance, organizational management, development of business plans and provision of business advisory/marketing services. Strengthened national commodity organizations, with a legitimacy built on a wide membership base and an inclusive leadership and governance structure, will provide better economic services for their members. Strengthened FOs (e.g. cooperative societies) will independently serve their members (e.g. on accessing inputs, markets and finance) without the project acting as a broker or a guarantee. The project will support cooperatives to enter into sustainable commercial partnerships with input dealers. To assist them in accumulating the liquidity to independently underwrite their own production activities, the project will finance a partial and declining subsidization mechanism over three years (year 1: 80 percent, year 2: 50 percent, year 3: 20 percent of major inputs costs). Similar mechanisms, which have been successfully

implemented in Senegal under PAFA and tested under NEMA, will fully capitalize the cooperatives, allowing them to autonomously meet their members' input supply needs in the following years with a clear exit strategy.

5. While the infrastructure investments will be implemented with external contractors and technical assistance, the ownership and management of the facilities will ultimately rest with the WUMU, the beneficiary cooperatives and village development committees (VDC). The project will ensure that these groups acquire the knowledge and necessary skills to operate and maintain the facilities. Capacity development to WUMU's as well as proper O&M and optimal on-farm water management system will be financed. Concerted efforts will be exerted to promote volumetric-based water service fees collection systems to ensure that O&M and replacement fees are deposited in the WUMU's bank account and the exit strategy is in place. The project will also transfer to MoA and MoFWR free, web-based, earth-observation technologies (such as the FAO-developed Earth Map) to monitor land and water development investments during implementation. The PSU will hire International Technical Assistance (ITA)⁶³ to oversee, with support of a Delegated Contract Management entity (DCM), the FS&DD and supervision of civil works performed by international/national with transfer a knowledge and skills to local staff.
6. By promoting savings mobilization and remittances/transfers in credible institutions such as MFIs (e.g. Reliance, Supersonicz) and NACCUG's credit unions, and by conditioning savings to access matching grants funds, farmers will be empowered to better sustain their productive assets without the project's continued sponsorship, more particularly for maintenance and replacement, and possibly access short-term loans for working capital needs. Financial inclusion that allows a more formal and secure access to liquidity will improve farmers' capacity to cope with urgent financing needs, hence improving resilience. To sustain rural financial services beyond the project lifespan, the project will support financial literacy with the development and delivery of various modules including on credit and saving. In addition, the progressive introduction of innovative finance models, such as the access to crowdfunding platforms, will be an opportunity to raise new investment capital sources, for example from the Gambian diaspora.
7. To speed up all reforms, Policy dialogue and south-south and triangular cooperation will be crucial for the long term sustainability of the project. Finance solution-oriented platforms (more particularly on the VGGTs) for high-level and trust-based policy dialogue between private operators, producers and public authorities.

⁶³ See detailed ToRs for the ITA in the PIM (Annex 8).

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex 12: List of eligible activities to be financed by FIPS

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

Annex 11: List of eligible activities to be financed by FIPS

A. Project ID:

Loan ID: (if applicable)

Preliminary Project Title: Resilience of Organizations for Transformative Smallholder Agriculture Project (ROOTS)

Implementing Lead Agency: Ministry of Agriculture

1. Justification

1. The Gambia is considered a fragile situation country due to environmental, political and economic challenges and eligible to the FIPS. Global indices, such as the Fragile States Index (FSI), put the Gambia on "high warning". The score of The Gambia on the FSI steadily worsened, from 80.6 in 2010 to 89.4 in 2017, before improving to 83.9 in 2019 where it is ranked 47th most fragile of 178 countries. By also ranking 143rd out of 181 countries in the ND-GAIN Index⁶⁴, The Gambia is one of the world's most vulnerable countries to adverse climate change impacts.
2. Politically, The Gambia is a nascent and fragile democracy, transitioning from 22 years of dictatorship and recovering progressively from misrule and diplomatic isolation. This has led to a slow growth, high inequality, unsustainable fiscal balances, due to limited capacity of the public administration. In the agricultural sector, large-scale emigration can be problematic as it drains the country of its most educated and productive rural workers. The country need to develop a clear capacity building strategy to build local capacities and attract skilled people from the diaspora in order to rebuild its agricultural sector and reduce rural poverty and food insecurity. Building on NEMA lessons learnt which has encountered implementation challenges (e.g. start-up delays, disbursement delays, project management recurrent issues), activities proposed to be financed by the FIPS will help ROOTS to start smoothly and in an effective and efficient manner.

2. Criteria

Please confirm the following:

- The pre-financing requires ratification through any legislative body of government?
Yes No
- Are pre-financing activities as described in point nr. 3 likely to be completed by the date of approval of the related loan? Yes No

⁶⁴ Notre Dame Global Adaptation Index.

3. List of activities

Eligible Activities	Amount USD	Procurement Method
Baseline and Feasibility Studies and Targeting Strategy .	150,000.00	Services
Social, Environment and Climate Assessment Related Procedures (SECAP) and Cross-cutting thematic areas	220,000.00	Services
PMU Staff Recruitment	20,000.00	Services
First Annual Work Plan and Budget	20,000.00	Services
Procurement Plan	20,000.00	Services .
Project Implementation Manual	50,000.00	Services.
Establishment of Monitoring and Evaluation System	100,000.00	Services.
Establishment of Fiduciary System, Finance and Administration Manual	100,000.00	Services..
Procurement of Goods and Services required for project start up	20,000.00	Goods and Services.
Total	700,000.00	

See COSTAB for more details.

4. Bank Account Details

The Pre-financing shall be disbursed in one instalment to the following bank account in which funds should be made available once IFAD approves the request. In addition, please provide a copy of the bank certification form from the bank as an evidence of opening of the Designated Account.

BANK NAME AND ADDRESS: CENTRAL BANK OF THE GAMBIA, 1-2 Ecowas Avenue, Banjul, The Gambia.

ACCOUNT NUMBER: 1103002995

IBAN NUMBER: CBGAGMGM

PAYEE NAME AND ADDRESS: ROOTS

Authorized Signatory: _____

Name and Title: Mr. Momodou Gassama Director Nema
Mr. Alhagie Jabang, Financial Controller Nema

Date:

B. Procurement:

1. As provided in Section 7.05 of the General Conditions, procurement activities required under this Pre-financing shall be carried out in accordance with the provisions of the Borrower's procurement regulations, to the extent such are consistent with the IFAD Project Procurement Guidelines.
2. The Fund shall review and provide its no-objection to the Procurement Plan, which shall include as a minimum:
 - b. A brief description of each procurement activity to be undertaken during the period by each and every Project Party;
 - c. The estimated value of each procurement activity;
 - d. The method of procurement or selection to be adopted for each procurement activity; and
 - e. An indication as to whether the Fund shall carry out prior or post review in respect of each and every procurement activity.
 - f. Consistency with IFAD Project Procurement Guidelines and Project Procurement Handbook.
3. Any amendments to the Procurement Plan shall be subject to the Fund's 'no objection'.

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex: Annexe 13 ESMF GAMBIA

Document Date: 15/10/2019
Project No. 2000001065

West and Central Africa Division
Programme Management Department

The Gambia

**Resilience of Organizations for Transformative Smallholder Agriculture Project (ROOTS) No.
2000001065**

Environmental and Social Management Framework (ESMF)



May 2019

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2.3 Components and expected outcomes	Error! Bookmark not defined.
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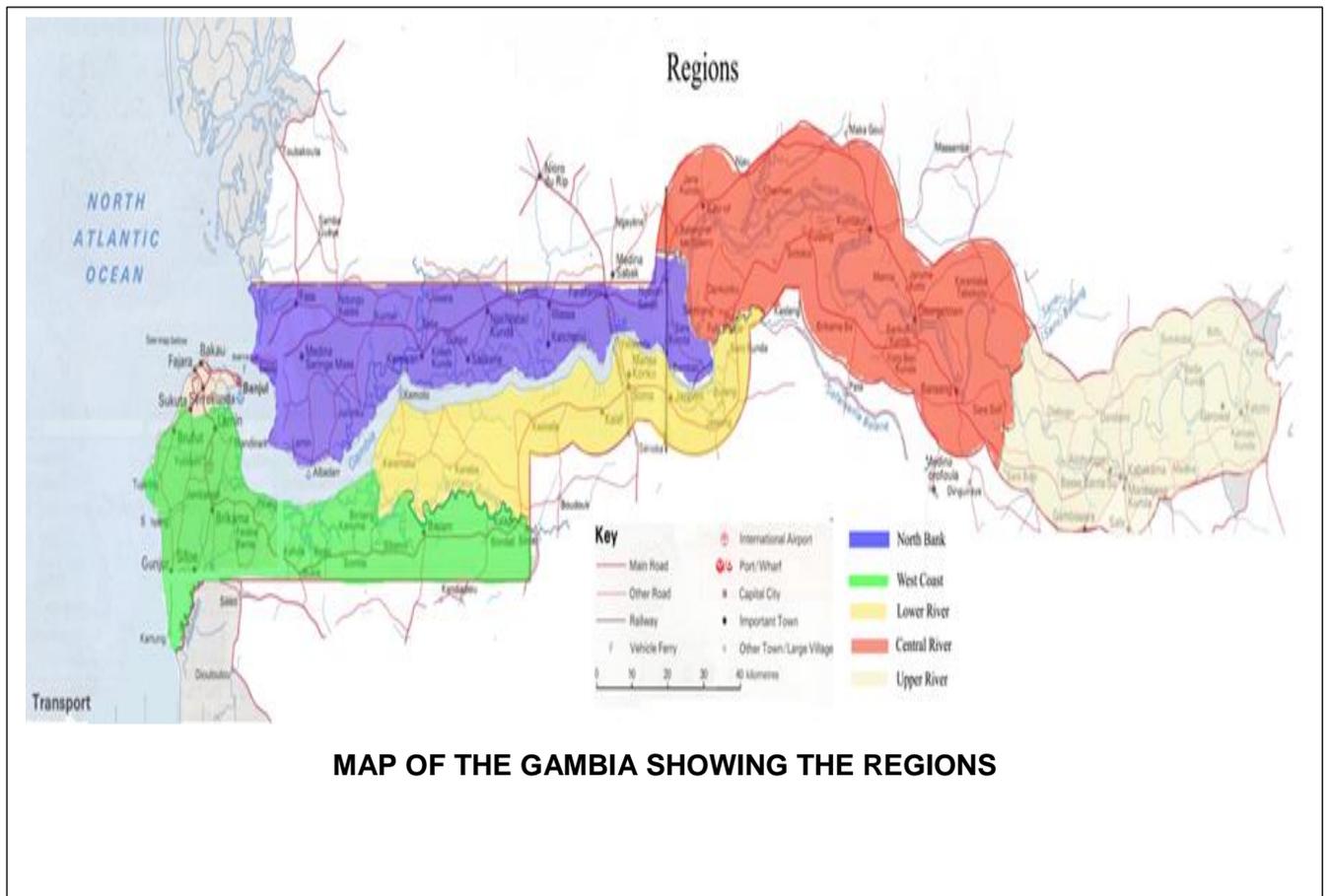
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Abbreviations and acronyms

4P	Public-Private Producers' Partnerships
AfDB	African Development Bank
ANR	Agriculture and Natural Resources Policy
AWPB	Annual Work Plan and Budget
COSOP	Country Strategic Opportunities Programme
EIRR	Economic Internal Rate of Return
ESMF	Environmental and Social Management Framework
FFS	Farmer Field School
FIRR	Financial Internal Rate of Return
FO	Farmers' Organization
GALS	Gender Action Learning System
GHG	Greenhouse Gas
GNI	Gross National Income
GoTG	Government of The Gambia
HH	Household
IFAD	International Fund for Agricultural Development
IITA	International Institute of Tropical Agriculture
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
KM	Knowledge Management
KM	Knowledge Management

KMC	Knowledge Management And Communication
LDC	Least Developed Country
LGA	Local Government Area
LULUCF	Land Use Change and Forestry
M&E	Monitoring And Evaluation
MoA	Ministry of Agriculture
MT	Metric Ton
NEA	National Environmental Agency
NEMA	National Agricultural Land and Water Management Development Project
PBAS	Performance Based Allocation System
PCU	Programmes Coordinating Unit
PLAR	Participatory Learning and Action Research
PME	Planning, Monitoring and Evaluation
PSU	Project Support Unit
RIMS	Results and Impact Management System
ROOTS	Resilience of Organizations for Transformative Smallholder Agriculture Project
SECAP	Social, Environmental and Climate Assessment Procedures
VC	Value Chain



Executive Summary

Introduction

1. The Gambia is a country in transition from extreme fragility to greater resilience to shocks but many development challenges remain after 22-year legacy of authoritarianism. In this challenging context, the new authorities are addressing the main drivers of country fragility, namely unsustainable fiscal deficits, the limited capacity of the public administration, high rates of population growth and outmigration, limited access to resources, regional instability, and structural vulnerabilities and shocks such as climate change and environmental degradation. These drivers of the country fragility are resulting in intensely negative socio-economic and environmental effects particularly in the agricultural sector. At present there are insufficient financial resources and technical capacity to build the resilience of organizations for transformative smallholder agriculture.
2. The Gambia is among the poorest countries in the world. Approximately 57.2 per cent of the population are “multidimensionally” poor while an additional 21.3 per cent live near the multidimensional poverty line. Rural poverty, food insecurity and malnutrition are closely associated with low productivity, particularly in the rain-fed sector. Poverty levels remained essentially unchanged, and the estimated annual 3.5 percent GDP growth rate is not sufficient to meaningfully reduce poverty.
3. Agriculture is the principal source of livelihood for the rural population and for the majority of households below the poverty line. It provides employment for approximately 70% of the population but contributing only 24% of the GDP. The agricultural sector is characterised by low productivity, limited access to markets; limited access to financial services and products especially for young people and women, inefficient and limited farming technologies; lack of gainful employment opportunities off season and off farm, which spurs youth migration and decreases labour availability during the production season; local land access and user rights that require official recognition and results in gender disparities; unclear systems of succession which discourage on-farm investments; climate shocks, high rural illiteracy rates that impede adoption of improved technologies low availability of financing for family farming; and lack of capacity to efficiently deliver essential rural services such as extension advice and land registration and management.
4. The new Government of the Gambia's (GoTG) has adopted a medium-term strategy namely the National Development Plan (NDP) 2017-2020. The NDP envisions a transition to a green economy driven by SME private sector investment and delivering sustainable and inclusive benefits through the inclusion of youth and women as key economic actors. The plan expresses a clear desire to transform the agriculture sector in order to reduce poverty, food insecurity, malnutrition while creating jobs opportunities for youth and women in rural areas. These commitments are translated into the Agriculture and Natural Resources Policy (ANR 2017-2026), The Gambia National Gender Policy (2010-2020) and National Youth Policy (2009-2018). Although the need to increase agricultural productivity and transition towards develop market value chain with public and private partnerships approaches is well recognised, a paradigm shift is required to build the resilience of farmers’ organisations under changing climate conditions.
5. The proposed Resilience of Organizations for Transformative Smallholder Agriculture Project (ROOTS) is aligned on the 2019-2024 IFAD COSOP and capitalizes on IFAD experiences in reducing poverty in The Gambia by supporting resilient, women- and youth-inclusive and nutrition-sensitive value chains. ROOTS builds on NEMA's contribution to the rice and horticulture development, and seeks to consolidate and scale up climate resilience in rice farming (upland and low land farms) and community vegetable gardens. It will do so by gradually adding new villages identified from the poverty analysis and pursuing activities that benefit farmers’ organisations/cooperatives to create sustainable conditions for developing the targeted value chains.

Targeting and Implementation

6. ROOTS will be implemented in the five regions: (i) Central River Region (CRR); (ii) North Bank Region (NBR); (iii) Lower River Region (LRR); (iv) West Coast Region (WCR); and (v) Upper River Region (URR). IFAD funded activities under ROOTS will be implemented in 39 districts of which 6 are in WCR (Kombo North, Kombo South, Kombo Central, kombo East, Foni Berefet, Foni Bintang Karania, Foni Kansala, Foni Bondali and Foni Jarrol); 6 in LRR (Kiang East, Kiang Central, Kiang West, Jarra East, Jarra Central and Jarra West); 7 in NBR (Lower Nuimi, Upper Nuimi, Jokadu, Lower Badibou, Central Badibou, Upper Badibou and Saba Sanjal); 5 in CRR/N (Lower Saloum, Upper Saloum, Nianija, Niani and Sami), 5 in CRR/S (Niamina West, Niamina Dankunku, Niamina East, Lower Fuladu West, Upper Fuladu West); and 7 in URR (Jimara, Basse, Tumana, Kantora, Wulli East, Wulli West and Sandu). These districts are known as very poor, least developed and highly vulnerable to climate change effects such as floods, salinity and drought. The 36 Districts have been selected on the basis of some indicators related to poverty, vulnerability, remoteness and quality and scale of infrastructure, account harmonization with other donor-supported programs.
7. The project target group comprises the population in these catchment areas, in particular smallholder farmers, micro-entrepreneurs, and poor rural Youth and Women. It is estimated that 40,000 households (HH), about 320,000 people (over 10% of the population) will benefit from the project. Due to the targeted value chains and the nature and the core producers of rice and vegetable who are women, the current demographic structure at local level, it is anticipated that 60 percent of beneficiaries will be women and 25 percent will be youth. ROOTS will support increasing access to project activities for women and youth to productive assets (land, water), financing, knowledge as well as their participation in project implementation, community representation and decision making.
8. Selection criteria will be developed and validated with communities. These criteria include: (i) poverty and food insecurity; (ii) community interest and demand; (iii) synergies with other donor-supported projects; (iv) site potential (including downstream effects, physical cultural resources, hydrogeological potential and saline-water intrusion dynamics in rice production schemes); (v) proximity to markets/lumos and linkages with off-takers, and; (vi) land size of group members (not exceeding five hectares of land under rice/vegetables). The project targeting strategy, including gender equality and women's empowerment.

Risk category, classification and key environmental, climate and social issues

9. In line with IFAD's Social, Environmental and Climate Change Assessment Procedures (SECAP), ROOTS is classified as a **Category B Program** and fall under **category B** of the Gambia's EIA Guidelines and Procedures, implying that ROOTS is likely to cause limited environmental and social impacts which can be successfully managed by appropriate preventive actions and/or mitigation measures provided both in the ESMF and updated ESMP of NEMA. Key risks to environmental and social management are: poor governance and lack of institutional, technical and organizational capacity, implementation capacity by services providers for infrastructures; which will be addressed through the effective implementation of the ESMF/ESMP. Infrastructure will be subject to feasibility studies/ESIA and approval by NEMA. The project will not result in involuntary resettlement, or impact on physical cultural resources.
10. The EX-ACT carbon balance analysis shows mitigation potential of 16,900 t CO₂-eq over 20 years. Based on IFAD's climate risk categorization, **ROOTS is classified 'high'**.

Environmental management and monitoring plans

11. Pertinent national legal, institutional and regulatory frameworks were reviewed to set in context the Environmental and Social Management Framework (ESMF) for the ROOTS. The environmental, climate and social context and present challenges for the regions were reviewed. Some of the mitigation and adaptation plans recommended in the ESMF include:
 - ✓ capacity building of multiple actors in technical, management and governance aspects, and strengthening of women's and farmers organizations,

- ✓ upgrading of vegetable gardens with solar powered irrigation pumping systems, intercropping, systematically introducing nutrient and vitamin-rich crops, agroforestry, promotion of sustainable land and water management practices and youth training support/youth incubation including on sustainable management of natural resources.
- ✓ Infrastructure investments (roads, causeways) will be subject to feasibility studies and license approval by the relevant institutions to ensure that there is minimal social and environment impact but also the infrastructures withstand to climate change impacts (floods, salinity...).
- ✓ Ecosystem preservation activities as the rehabilitation of 1,300ha of mangroves and 3,850ha of community forests.
- ✓ creation of solution-oriented inclusive platforms for high-level policy dialogue between private operators, FOs and public authorities and access to land and credit. .
- ✓ support climate resilient infrastructure in the targeted areas to expand arable land and water management productivity and reduce poor people's vulnerability to natural hazards, food insecurity and nutrition, the nature of risks and exposure to climate change.
- ✓ Sustainable land use and forest ecosystems will contribute to reducing GHG emissions. Climate resilient infrastructure (land and water development) and upgraded gardens will lead to secure production and reduce the risk of low yields while contributing to expanding the period of production from the 3 months of the rainy season to 6 to 9 months within the dry season.
- ✓ Good climate resilient agricultural practices in rice and horticulture will be promoted to address drought, flooding, salinization, locusts effects and harsh environments (land degradation).
- ✓ Development of a capacity building strategy, the project will address the limited knowledge of climate change impacts on smallholder agricultural value chains and landscapes and effective adoption and implementation of adaptation interventions.
- ✓ development of new modules on climate resilient agriculture, waste management and renewable energy for the Songhai training Centre.
- ✓ Improve collaboration with Gambia National Meteorological Agency to ensure production and dissemination of key agro-climatic information to farmers at regular intervals.
- ✓ As much as is possible, discourage cultivation in areas that are very close to the major river systems to minimize overflow during normal flow seasons
- ✓ Improve collaboration with research institutes to introduce early maturing/short duration and flood resistant rice varieties to the farmers to reduce flood impacts
- ✓ Support and strengthen Seed Labs to be able to carry out rigorous tests on seeds to ensure that only genuine foundation seeds are used by farmers
- ✓ Collaborate with regulating agencies to ensure that agrochemicals, soil fertility systems meet the approved FAO/WHO standards; training and certification of 'spraying gangs' to eliminate agrochemical misapplication; public health and safety concerns and soil and water pollution
- ✓ Support Value Chain actors in conversion of rice wastes to briquettes and vegetable stalk to animal feeds
- ✓ Improve community security arrangements by supporting dialogue and understanding between farmers and pastoralists to reduce resource conflicts . Support to strengthening existing informal and formal existing grievance redress mechanisms proposed in NEMA ESMP and establishing new ones where they don't exist. Such systems will address concerns that may be raised associated with other project activities.
- ✓ Avoid farming along recognized grazing routes and demarcated grazing reserves
- ✓ Support promotion of land governance and efficient land management as adaptation
- ✓ Contractors will be required to comply with national and state regulations governing the environment, public health and safety and labor practice.

Funding the Environmental and Social monitoring plans

12. A total of **USD 2,938, 889** has been estimated for the environmental and social monitoring for the ROOTS. About **USD1,145,069** is expected to be expended at the base year while the rest is spread across the 2nd to 6th year. The fund covers environmental and social monitoring plans including:

- Site specific studies for rehabilitation and new infrastructure (including roads, causeways, markets infrastructures etc.), will be conducted
- Training including 'spraying gangs', draining of rice paddies, and construction of water harvesting structure for dry season irrigation;

- Support for conflict resolution including stakeholders' dialogue on conflict management and land governance
 - Health and Safety including Health insurance for agro-entrepreneurs.
13. A successful mainstreaming of ESMF into implementation of the ROOTS project also requires adequate sensitization and the strengthening of institutional capacities through capacity building programs. The sum of **USD 538,889** has been estimated for additional capacity building activities. In total, both the Environmental and Social Monitoring costs and capacity building cost account for **USD 2,938, 889** to enhance environmental, climate and social opportunities as well as and address any potential adverse impacts.

INTRODUCTION

Background

1. The Gambia is the smallest country on the African mainland with a surface area of 10,689 km² and a population of 2.1 million that is expected to double in the next 20 years, due to an annual growth rate of 3 percent (World Bank, 2017). At 174 persons per km², it is the eighth most densely populated country on the continent. More than half of the population is young: the share of below 15 years old in the population is about 40 percent, while the 15 and 25 years old represent 25 percent¹. Youth rural-urban migration and overseas emigration are key facets of the population dynamics as 40 percent of Gambians live in rural settings and about 3.1 percent of the rural population migrate annually (2019-2024 COSOP). Gambian overseas represent more than 4 percent of the total population with an estimated community of 90,000 emigrants (IOM, 2019).
2. Real Gross Domestic Product (GDP) growth has increased during the past five years (from negative 0.9 percent in 2014, to 0.4 percent in 2016 to 6.6 percent in 2018), mainly driven by private consumption, government investments, remittances inflows², exports and re-exports of goods and services (textiles, food and beverages). The service sector (mainly tourism) contributes 60 percent of the GDP, the industrial sector (construction and agro-processing) 12 percent and agriculture 18 percent (EIU, 2018).
3. The Gambia is considered a fragile situation country due to environmental, political and economic challenges. Global indices, such as the Fragile States Index (FSI), put the Gambia on “high warning”. The score of The Gambia on the FSI steadily worsened, from 80.6 in 2010 to 89.4 in 2017, before improving to 83.9 in 2019 where it is ranked 47th most fragile of 178 countries. By also ranking 143rd out of 181 countries in the ND-GAIN Index³, The Gambia is one of the world’s most vulnerable countries to adverse climate change impacts.
4. **Food security and nutrition (SDG 2).** High levels of poverty translate into tenuous food security and malnutrition. In the 2018 Global Hunger Index (GHI) established by IFPRI, Gambia ranks 75th out of 119 countries (scoring 22.3) and suffers from a level of hunger that is considered as “serious”. The country is also on the verge of a nutrition emergency. National stunting and wasting rates were recorded at a “critical high” of 25 and 11 percent (GHI, 2018), while undernourishment and anaemia impacted 20 and 60.3 percent of pregnant women and women in reproductive age, respectively (EU, 2017).
5. **Smallholder agriculture and rural development context.** The agricultural sector is characterized by subsistence farming that contributes 50 to 60 percent of the country’s total cereal requirements (FAO GIEWS, 2018). The sector is defined by small-scale and mixed crop production (mainly rice, millet, maize, sorghum and cassava), traditional livestock rearing, semi-commercial production (groundnut, cotton, sesame), horticultural production and a vibrant fisheries sub-sector.
6. Agriculture employs 70 percent of the labor force, contributes two thirds of youth⁴ employment and provides around 75 percent of total household incomes. Small and Medium Enterprises (SMEs), which are responsible for generating most of the growth required to meet the SDGs⁵, create income for over 50 percent of the Gambian population, employ 40 percent of youth, contribute 20 percent of GDP and represent 99 percent of the private sector. In the agriculture sector, they contribute to employment in on farm-production services, input supply, food processing and supplying produce for urban markets.
7. **Strategies and policies.** Under its medium-term National Development Plan (NDP 2018-2020), the Government of the Gambia (GoTG) envisions a transition to a green economy driven by SME private sector investment, the use of sustainable Climate Smart Agriculture (CSA) technologies

¹ ROOTS Project Concept Note, 2019.

² Remittances represents 20.5 percent of the GDP (World Bank, 2018) and grows by more than 10 percent yearly since 2009.

³ Notre Dame Global Adaptation Index.

⁴ 18–35 years-old

⁵ http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/brochure_ITC-Gambia%2010_web.pdf

and the inclusion of youth and women as key economic actors in this transition. Under the NEPAD- and ECOWAS-led CAADP process, the country is currently preparing a new phase of the Gambia National Agriculture Investment Plan, Food and Nutrition Security (GNAIP-FS, 2017-2026) to serve as the strategic framework to improve food and nutrition security and effective management of the environment. Relevant strategies and policies include:

- (i) the Agriculture and Natural Resources policy (ANR 2017-2026);
- (ii) the Gambia Environment Action Plan;
- (iii) the National Climate Change Policy,
- (iv) the National Adaptation Plan;
- (v) The Gambia Sustainable Land Management Investment Framework (GAMSIF, 2016-2020);
- (vi) the National Nutrition Policy 2010-2020;
- (vii) the National Youth Policy 2009-2018;
- (viii) the Gender Policy 2010-2020; and
- (ix) The Gambian Diaspora Strategy. The Gambia has signed the Paris Climate agreement and submitted its Intended Nationally Determined Contributions (INDC) to conditionally reduce its GHG emissions.

Special aspects relating to IFAD's corporate mainstreaming priorities

8. **Youth.** Poverty disproportionately affects youth, with 60 percent of the poor under the age of 20. Youth, particularly rural youth, have low levels of education (0.372 education index⁶) and vocational training (3 percent) compared with regional comparators and leave school earlier than their urban counterparts. They have very limited access to productive resources and capital to establish farming enterprises. As a consequence, youth unemployment in rural areas is as high as 37 percent⁷, as compared to 12.9 percent nationally (World Bank, 2018). Youth exodus has important implications for agriculture labor and services, as well as capacity since youth receiving vocational training for rural employment frequently migrate. Conversely, 40 percent of the rural households receive financial transfers from a relative in Gambia or abroad (70 percent). Personal international remittances doubled from USD 110 million in 2013 to 223 million in 2018 providing a safety net for rural households and showing, to a certain extent, an opportunity for investments from the diaspora.
9. **Gender.** The Gambia is a patriarchal society with cultural values and roles constraining female participation in society and leadership. According to the 2015 Gender Inequality Index, The Gambia ranked 148 out of 159 countries. Women represent 70 percent of the agricultural labor force, produce 70 percent of the output and perform 50 to 70 percent of the agricultural tasks. They have, however, minimal control over their own land, income and access to credit, and are vulnerable to climate change. The labour hours of women farmers in The Gambia are disproportionately high in comparison with men both at household level and in the field. In education, there is gender parity at the preschool, primary, and secondary levels, but inequality remains in tertiary and vocational training. In the Gambia, gender-based violence remains a problem and the new government is committed to High prevalence of gender-based violence through a zero tolerance.
10. The literacy rate for women is low at 40 percent compared with 64 percent for men. Recent data indicates that female-headed households are less vulnerable to food insecurity than male-headed households, and poverty is more prevalent in male-headed households (50.9 percent) than in female-headed households (38.3 percent)⁸.
11. **Nutrition.** The Gambia's deep poverty and inadequate social services and infrastructure are manifested in poor nutritional status of the population. According to the World Bank, 20 percent of infants are born with low birth weights; some 28 percent of children under five years are stunted, increasing the risk of impaired cognitive development. More than one third of child deaths are due to undernutrition from increased severity of disease. Anemia affects more than 75 percent of

⁶ UNDP, Human Development Report, Education Index, 2017)

⁷ UNDP, National Human Development Report, 2014.

⁸ WFP-CFSVA, 2016, and The Joint Gambia Government/FAO/CILSS and WFP Preharvest Assessment, 2018.

pregnant women and preschool aged children and Vitamin A deficiency is also wide spread.

Rationale and Objectives of the ESMF

12. The Gambia is one of the world's most vulnerable countries to adverse climate change impact, ranking 143rd out of 181 countries according to the ND-GAIN Index. The Gambia is facing pronounced risks of higher temperatures, lower and more erratic rainfall, increased frequency of droughts and floods, significant loss of soil fertility and potential for submersion of large land areas given rising sea levels. Land degradation, salinization, coastal erosion, land quality reduction, and low agricultural productivity are serious threats to national food security. Mean annual temperature has increased by 1.0°C since 1960. Linear trends indicate that wet season rainfall has decreased significantly between 1960 and 2006. Climate change projections predict an increase by 1.1 to 3.1°C by the 2060s, and 1.8 to 5.0°C by the 2090s (UNFCC,2016). The country is likely to experience increased incidence of drought and lengthened dry spells. Combined, these factors are serious threats to agricultural productivity and national food security. By its nature, the project will contribute to meeting IFAD's corporate commitment on mainstreaming areas which are environment and climate (25% of investment climate focused); nutrition (50% PoLG nutrition sensitive), gender (25% gender sensitive), youth (50% youth focused).
13. In line with IFAD's Social, Environmental and Climate Change Assessment Procedures (SECAP), ROOTS is classified as a **Category B Program** and fall under **category B** and with '**High**' Climate Risk. The most vulnerable areas from a climate change perspective will be the lower-central part of the country where saline water meet freshwater, the balance of which is determined by rainfall conditions and, increasingly, sea level rise. However, other regions are also vulnerable. In the Western part of the country, which is more densely populated, lowland rice and horticulture are vulnerable to saline ground water resources and short return periods for low rains and heavy rains that will worsen land degradation in the uplands. In the Eastern part of the country, rainfall variability threatens both droughts and floods, and here too temperature increases will be felt more keenly⁹.
14. The main objectives of the ESMF as per the terms of reference of this study, are to:
 - Define the principles, rules, guidelines and procedures framework to develop the Environment and Social Management Framework Methodologies (ESMPs) with adequate budgets to guide the implementation team of ROOTS
 - Finalize the Environment and Social Management Framework Methodology
15. Approach and Methodology and Stakeholders Consultation This ESMF builds on the Social Environment and Climate Assessment Procedure (SECAP) note developed for the AF. The objectives of the SECAP was to: evaluate the impact of current and future trends of climate change and environment on the programme's objective to reduce rural poverty and build the resilience of target groups; and propose adaptation/mitigation options for climate and natural resources management (NRM) issues with positive outcomes on target groups. The SECAP note and a Climate Risk Analysis were prepared following consultations with stakeholders in line with the current environmental, social and climatic realities.
16. The PDR and SECAP note have classified ROOTS as environmental and social category '**B**' based on the adverse environmental effects which can be readily remedied by appropriate mitigation measures; and a '**High**' Climate risk classification indicating the need for an in-depth climate risk analysis to be conducted. The SECAP recommended an ESMF be developed to inform the design of ROOTS.

⁹ IFAD, *Strengthening climate resilience of the national agriculture land and water management development project – Chosso, 2015b*, IFAD West and Central Africa Division

The SECAP noted environmental and social risks mainly from: productive infrastructures and market infrastructure, conflict and lack of ownership, unsustainable agricultural practices, land development.

17. In terms of the technical scope, the ESMF reviewed environmental, climate and social impacts, focusing on unsustainable agricultural practices, land development, likely impacts from land development (including irrigation infrastructure) climate change, and human conflicts and insecurity issues. It also reviewed several institutional, legal and policy documents and frameworks related to agriculture, environment, climate, access to land, and gender issues in The Gambia. The IFAD's Social, Environment and Climate Assessment Procedures (SECAP), IFAD's new environment and climate strategy 2019-2025, the Gender Equality and Women's Empowerment, Targeting and Sexual Exploitation and Abuse policies were also consulted in developing this ESMF document. Consultations were made with stakeholders in the 5 regions of the country during the design of the project.

Disclosure of ESMF

18. IFAD's Policy on the Disclosure of Documents (2010) requires full disclosure to the public, and includes information notes on projects being developed for Board presentation, agreements for approved loans and grants, and project/program design documents. This ESMF will therefore be disclosed on IFAD's official website (<http://www.ifad.org>). In addition, the ESMF will be disclosed on the Ministry of Agriculture's official website (<http://www.moa.gov.gm>)

Challenges and Assumptions

19. The challenges in preparing the ESMF include: The availability of the feasibility studies at the time of the design; change in the selection of the 39 districts already identified in the 5 regions of the country identified later after the design consultation with national authorities; (i) Central River Region; (ii) North Bank Region; (iii) Lower River Region; (iv) West Coast Region; and (v) Upper River Region.

Report Structure

20. Chapter 1 describes ROOTS, and the objectives and targets of the ROOTS, rationale and objectives of the ESMF, approach and methodology including stakeholders' consultation and challenges and assumptions for the ESMF. Chapter 2 describes the ROOTS project area and target groups, project objectives and impact indicators, implementation structure, potential partners, and environmental and social category, lesson learned on climate, environment and social risks and key issues identified for environmental and social risk. Chapter 3 reviews some of the legal, institutional and regulatory framework for ESIA and agri-business in The Gambia as well as the IFAD guidelines and how they affect the ROOTS. Chapter 4 describes in detail the environmental, climate change and social contexts of the ROOTS and summary across the states. Chapter 5 reviews in detail the potential positive and negative environmental, climate and social impacts of the project. Chapter 6 describes the Environmental and social Management Plan for ROOTS and the Stakeholder Engagement, Community Sensitization, Expectation and Grievances management mechanisms. Chapter 7 presents a review of Environmental, Climate, Social Impacts of ROOTS Sub-Projects and the Environmental and Social Management Framework (ESMF) for Agricultural Value Chain Stages. Chapter 8 describes the framework for Environmental and Social Screening of Sub-Projects. Chapter 9 presents the Environmental and Social Impacts monitoring plans and cost, and Chapter 10 itemizes the capacity building and training for mainstreaming the Environmental and Social Management and Monitoring Plans.

DESCRIPTION OF THE PROPOSED PROJECT

Project Area and Target Group

21. ROOTS will be implemented in the five regions: (i) Central River Region (CRR); (ii) North Bank Region (NBR); (iii) Lower River Region (LRR); (iv) West Coast Region (WCR); and (v) Upper River Region (URR). IFAD funded activities under ROOTS will be implemented in 39 districts of which 6 are in WCR (Kombo North, Kombo South, Kombo Central, kombo East, Foni Berefet, Foni Bintang Karania, Foni Kansala, Foni Bondali and Foni Jarrol); 6 in LRR (Kiang East, Kiang Central, Kiang West, Jarra East, Jarra Central and Jarra West); 7 in NBR (Lower Nuimi, Upper Nuimi, Jokadu, Lower Badibou, Central Badibou, Upper Badibou and Saba Sanjal); 5 in CRR/N (Lower Saloum, Upper Saloum, Nianija, Niani and Sami), 5 in CRR/S (Niamina West, Niamina Dankunku, Niamina East, Lower Fuladu West, Upper Fuladu West); and 7 in URR (Jimara, Basse, Tumana, Kantora, Wulli East, Wulli West and Sandu). These districts are known as very poor, least developed and highly vulnerable to climate change effects such as floods, salinity and drought. The 36 Districts have been selected on the basis of some indicators related to poverty, vulnerability, remoteness and quality and scale of infrastructure, account harmonization with other donor-supported programs.
22. The project target group comprises the population in these catchment areas, in particular smallholder farmers, micro-entrepreneurs, and poor rural Youth and Women. It is estimated that 40,000 households (HH), about 320,000 people (over 10% of the population) will benefit from the project. Due to the targeted value chains and the nature and the core producers of rice and vegetable who are women, the current demographic structure at local level, it is anticipated that 60 percent of beneficiaries will be women and 25 percent will be youth. ROOTS will support increasing access to project activities for women and youth to productive assets (land, water), financing, knowledge as well as their participation in project implementation, community representation and decision making.
23. The **goal of the project** is to improve food security, nutrition and smallholder farmers' resilience to climate change in The Gambia.
24. The **Project Development Objective** (PDO) is to increase agricultural productivity and access to markets for enhanced food security and nutrition, and the resilience of family farms and farmer organizations.
25. **Theory of Change.** To achieve its objective, the project will support targeted investments in infrastructure, technical and organizational capacities of farmers' organizations particularly youth and women and other stakeholders along the rice and horticulture value chains. For these value chains, accessible markets exist domestically and regionally and productivity gains for food security and nutrition are achievable through the adoption of proven climate-smart technologies and practices and better access to markets. ROOTS will scale-up achievements from NEMA, while building synergies with other partners' work geared towards increasing climate change resilience and value-chain development. The approach will be based on: (i) consolidation of NEMA's investments; (ii) sustained investments and support to women's organization, youth producers and farmers' organizations; (iii) supporting value chain interaction platforms to enable Public-Private Producers' Partnerships (4Ps); (v) better access to financing; and (vi) mainstreaming environmental and climate, gender and nutrition in the interventions.

Components and expected outcomes

26. Component 1. Agricultural productivity and adaptation to climate change: The expected outcome is "Improved smallholder farmers' productivity through the adoption of sustainable and climate-resilient and nutrition-sensitive technologies and practices".

27. Sub-component 1.1 will: (i) consolidate 1,300ha of existing tidal irrigation; (ii) develop 2,800ha of new tidal irrigation on existing agricultural lands¹⁰; (iii) develop 200ha of new wet-season valley water control cascaded dykes; (iv) develop 800ha of new micro-catchments runoff control dykes; (v) establish and strengthen Water User Management Units; and (vi) upgrade 20km of causeways¹¹ to access 800ha of rice-growing swampy areas. In addition, the project will upgrade 40 vegetable gardens and develop 30 new ones. Around the production sites, ecosystem preservation activities such as the rehabilitation of 1,300ha of mangroves and 1,400ha of community forests will be financed.
28. Sub-component 1.2 will support (i) the access to various agricultural services (extension, input provision, financial education) with a focus on the promotion of farmers' field schools for rice and vegetables; (ii) the emergence of 240 youth-led businesses that mainly focus on the provision of services to the value chains; and (iii) capacity development of grassroots farmers' organisations (FOs), so that they develop services for their members.
29. Component 2. Access to markets: The outcome of this component is "inclusive commercial partnerships between strengthened FOs and buyers through public-private producers' partnerships".
30. Sub-component 2.1 will focus on value chain and market linkages. It will finance: (i) agricultural value-chain interaction platforms (AVIPs)¹²; (ii) capacity development of the National Coordinating Organization for Farmer Association in The Gambia (NACOFAG) as well as the national commodity organizations of food processors, rice and vegetable growers; and (iii) the construction of markets and roads infrastructure.
31. Sub-component 2.2 will support business ideas of public-private producers' partnerships (4P), focused on post-harvest and value-addition. The project will seek to ensure that: (i) FOs and SMEs prepare high-quality business plans; (ii) matching grant resources are efficiently mobilized and utilized;¹³ and (iii) post-investment business support is available to sustain the 4Ps, through linking the SMEs to specialized business development services including certification and food safety standards.
32. Component 3: Project management, institutional development, and citizen engagement. The objective is to facilitate (i) efficient coordination and monitoring and evaluation of project activities; (ii) knowledge management, communication and learning; (iii) stakeholder awareness and participation through timely and transparent communication of results and consistent citizen engagement; and (iv) policy dialogue and South-South and Triangular Cooperation .
33. **Costs and financing**. The total cost of the Project is US\$80 million for six years. Project costs by component are as follows: (i) Component 1: US\$53.3 million; and (ii) Component 2: US\$18.4 million. The management and coordination expenses are US\$8.3 million or about 10 per cent of the project costs. The project financing includes: (i) an IFAD grant in accordance with the Debt Sustainability Framework for US\$17.016 million (21.3 per cent); (ii) an IFAD loan for US\$4.254 million (5.3 per cent), including US\$700 000 for the FIPS; (iii) a GEF grant for US\$5.3 million (6.6 per cent); (iv) an OFID loan for US\$10 million (12.5 per cent); (v) Agence Francaise

¹⁰ average plot size of community land between 25 to 75ha for tidal irrigation

¹¹ each segment about 3km

¹² one rice AVIP and one vegetable AVIP will be established in each region targeted by the project with key value-chain stakeholders (producers, processors, traders, transporters). In addition, the voice-based market information system introduced by NEMA will be scaled-up.

¹³ As a pilot, and after the mid-term review, matching grant funds will be blended with potential private capital from the Gambian diaspora.

de Developpement (AFD) grants of US\$11.2 million (14.0 per cent); (vi) the Government of the Gambia for US\$5.4 million from tax exemptions (6.8 per cent); and (vii) beneficiaries for US\$6.2 million (7.8 per cent). The financial gap is estimated at US\$20.6 million (corresponding to 25.75 per cent of the project costs) and could be covered from the IFAD12 allocation (subject to availability of funds, to financial conditions to be determined, and to internal procedures) or from other financiers to be identified.

Key issues identified on social and environmental management

34. Some specific risks identified in the SECAP include:

- climate shocks –including flood and drought
- security and conflicts – including communal clashes, farmers-herdsmen conflicts, and armed robbery, banditry and kidnapping;
- inadequate participation of women especially in leadership positions in VCs
- farmers' unwillingness to participate in the learning workshops;
- inadequate adoption of improved agricultural practices;
- market infrastructure – access impeded by poor roads;
- Hijacks - elite hijacks of project infrastructure; pressure from the government and/or local elites on the project coordinating units to locate roads to non-VC linked or priority areas
- Exclusions – Unemployed youth group and poor women unable to contribute matching grants;
- Grievances – intra-group disputes
- Others - theft/ pilfering, fire outbreak

35. Other potential identified environmental risks/impacts associated with irrigation include:

- Market infrastructure construction that are not sustainable – noise and vibrations,
- soil erosion and flooding vulnerability and landscape change.
- Salinization

Environmental and Social category

36. The potential environmental and social risks posed by the ROOTS project are limited and constrained to farm production (including land development), construction of market infrastructure including market connected feeder road rehabilitation, small scale irrigation infrastructure development and water supply systems (causeways, dykes less than 3 km). Most of these impacts could be readily remedied and or considerably reduced with appropriate mitigation plans. The project will not have any severe negative impacts such as the involuntary taking or restriction on the use of land resulting in physical or economic displacement. It is not envisaged to negatively affect indigenous peoples or sites of historic, religious or cultural significance. The project is rated as a '**Category B**' project. However, with respect to Social Risk, the project has a **Medium** Social risk. Although no formal Environmental and Social Impact Assessment (ESIA) will be required, but further analysis of the conflict dimensions and environmental and social management plans will, however, be mainstreamed throughout project implementation. Citizen engagement combined with an environment plan will address potential conflict. The creation of solution-oriented inclusive platforms for high-level policy dialogue between private operators, Fos and public authorities and access to land and credit will facilitate the interaction between all actors.

Table 1: Project targets

Interventions	Beneficiaries	Size of the land
- Infrastructure development	Community (between 200-500)	25-75 ha
- Roads	All communities – traders- buyers	-
- Vegetable gardens	Farmers groups (< 100 people)	3 to 5 ha
- Financing	SMEs- Smallholder farmers-FOs	Variable up to 75 ha

- Capacity building	All groups- Smallholder farmers	-
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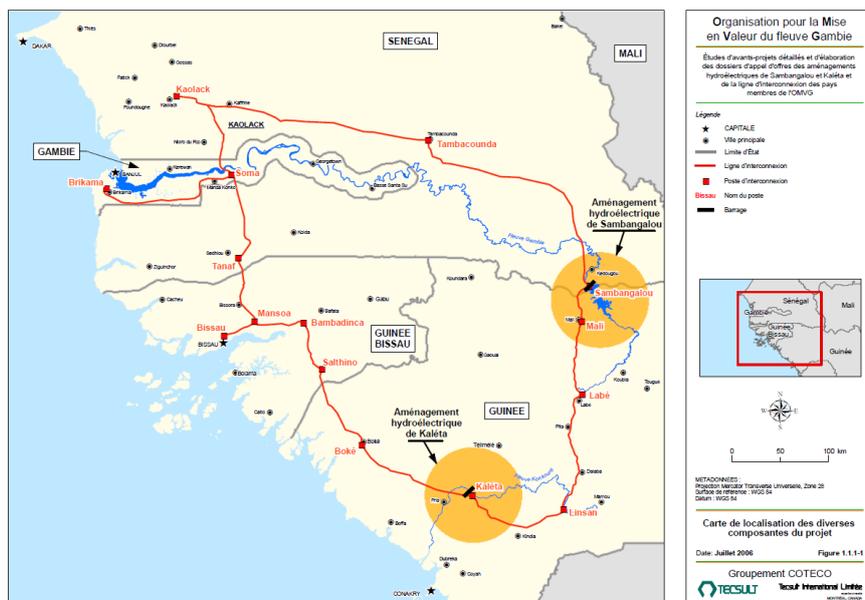
Table : Threshold Length on water infrastructures and rural roads (SECAP)

Infrastructures	length
Causeways	3 km each segment
Rural roads	Average length between villages and main roads (3 km)- shortest
	Length between village main roads (8 km)- longest

37. In terms of Climate Risk Assessment, the project is classified **High**. The target group of the sub-project is substantially dependent on climate-sensitive natural resources especially rainwater-fed agricultural plots, a large part of the sub-project area been subject to flooding in the most recent past; climate variability including unexpected dry spell occasioned by unpredictable rainfall and temperature can affect the sub-project impact, sustainability and return on investment. However, the project has the potential to integrate climate resilience measures without extensive additional costs through capacity building programs in climate smart agricultural strategies and strong collaboration with extension and weather and climate monitoring agencies to receive regular agro-climatic information and use of the right/appropriate cultivars or varieties.

38. The future Sambangalou dam located 930 km at the border of Guinea on The Gambia River in Senegal will push the salt waterfront about 100 km upstream However, the impact will be limited in the selected targeted areas, which are far from the dam The location of the targeted areas are suitable and various water infrastructures development help farmers to withstand to potential salt intrusion A specific ESMP has been developed https://www.pe-omvg.org/sites/default/files/2019-01/PGES%20Interconnexion_Gambie_0.pdf

39. This ESMF has been prepared to address any potential environmental and climate impacts



LEGAL, INSTITUTIONAL AND REGULATORY FRAMEWORK FOR ESIA AND AGRI-BUSINESS IN THE GAMBIA

Legal Framework

40. Constitution of the Republic of the Gambia (1997)

The Constitution, as the national legal order, recognizes the importance of improving and protecting the environment and makes provision for it. Relevant sections include:

- a. The constitution clearly stipulates that “The state shall pursue a policy of protecting the environment of the nation for posterity; and co-operation with other nations and bodies to protect the global environment.”
- b. Chapter XX sub chapter 220j states that one of the duties of the citizen shall be to protect and conserve the environment.¹⁴

Land Legislation¹⁵

- a. Land [Provinces] Act of 1995:
 - i. Chapter 103 states that “it is expedient that the existing customary rights of the indigenous inhabitants of the Provinces to use and enjoy the lands of the Provinces and the natural fruits thereof should be preserved” and that “the existing customary law regarding the use and occupation of such land should be as far as possible preserved”. It vests authority over customary tenure systems in district authorities.
 - ii. Chapter 103[4] states that “the occupation and use of Provinces’ land by indigenes shall be governed and regulated by the customary laws obtaining in the localities in which such lands are situated”.
- b. State Lands Regulations of 1991:
 - i. They provide for granting state lands or granting leases of state lands and for using such lands.
 - ii. The 46 regulations relate to: applying for a grant of state land for a residential purpose; applying for a grant of state land for a non-residential purpose; applying for a lease by a deemed lessee; covenants in all leases; additional covenants in specific leases; and the contents of a lease.
 - iii. The Land Administration Board shall register and review applications for a grant of state lands in accordance with eligibility criteria prescribed in Schedule II.
 - iv. A “deemed lessee” may apply for a lease of land held under the customary tenure or year to year tenancy.
 - v. Regulation 23 prescribes additional conditions for the lease of agricultural land.

Environmental Impact Assessment (EIA) Regulations (2014)

41. The EIA Decree provides guidelines with to respect any change that the project may cause in the environment, including the effect of such change on health and socio- economic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes,

¹⁴ **CONSTITUTION OF THE SECOND REPUBLIC OF THE GAMBIA**

Adopted on 8 August 1996, entered into force in January 1997, last amended in 2001

¹⁵ http://www.fao.org/gender-landrights-database/country-profiles/countries-list/national-legal-framework/en/?country_iso3=GMB

or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, and any change to the project that may be caused by the environment, whether such change occurs within or outside The Gambia.

42. The EIA Regulations, 2014, state exactly which projects require EIA, the procedure, responsibilities of stakeholders and fees. Furthermore, Section 3 (1) (b) of the EIA Regulations, 2014, states that the Regulations apply “to any major repairs, extensions, alterations, or non-routine maintenance for any existing project” such as electricity generation, transmission and distribution. Projects are classified „A” meaning a full EIA study is required; temporarily „B” when more information is required to make a decision; and „C” where a full EIA study is not required although approval may be with conditions.. The main reason is that the limited potential negative impacts that are inevitable, can be mitigated through implementation of this ESMP. This Projects EIA Screening Form will be submitted to NEA for consideration whilst the ESMP is being reviewed to start the screening process.¹⁶

Water Supply and Sanitation

43. Provision of water services by public utilities or commercial organizations; water supply for domestic, industrial or other purposes; right to safe and clean drinking water and basic sanitation; quality of piped water; sewerage is overseen by the following legal instruments;
- a. National Water Resources Council Act, 1979.
 - b. Gambia Public Utilities Regulatory Authority Act, 2001.
 - c. PURA Enforcement Regulations 2007.
 - d. National Water Resources Council Act, 1979.
 - e. Gambia Public Utilities Regulatory Authority Act, 2001.

The Convention relating to the creation of the Gambia River Basin Development Organization was also signed at Kaolack, on 30 June 1978.

Institutional Framework

The Ministry of Environment, Climate and Natural Resources

44. The Mission of this ministry is to promote long-term environmental sustainability through collaborative planning, public awareness campaigns and capacity building of stakeholders. It aims to mainstream climate change into the economic development process and promote food security for the Gambia by provision of timely and accurate climate information. It also has the mandate to promote biodiversity conservation by increasing terrestrial, inland water, coastal and marine protected areas and strengthen management effectiveness of existing and planned Pas.
45. The main function of the Ministry revolves around the following environmental areas of policy awareness, enforcement and intervention:
- a. desertification and deforestation;
 - b. pollution and waste management;
 - c. climate change;
 - d. flood, erosion and coastal management (shoreline protection);
 - e. environmental standards & regulations.
46. The National Environment Management Act (NEMA) was created to provide the legal framework to handle specific environmental issues. The NEA mandate is to ensure an environmentally sustainable economic and social development in The Gambia. The mandate involves largely coordination, advice and consultation, overseeing compliance and providing technical services. Under the NEMA, 1994. NEA is empowered to take direct implementation action in matters dealing with environmental impact assessment, establishing environmental quality and monitoring standards, and controlling the importation and use of pesticides and hazardous chemicals. In the

¹⁶ Government of The Gambia, *EIA Regulations, 2014*

area of environmental quality (mainly pollution control), the NEA has the mandate to enforce compliance with national standards and has the legal authority to seek redress whenever there is non-compliance under the guidance of the Polluter Pays Principle. The NEA operational activities are organized into two networks such as the Technical Services Network, Intersectoral Network and a Finance Department. These institutional structures coordinate participating institutions and the Working Groups to which the institutions belong. The Working Groups follow a programmatic approach, but their membership is broad-based constituted by members drawn from institutions with different but complementary mandates in the programme areas being dealt with within the respective working groups.¹⁷

Ministry of Local Government and Lands

47. The MOLGL is the main agency for local government planning and land development in the Gambia. The sales of Property are approved at the physical planning department. The Mission of this ministry is to achieve equitable and efficient distribution of state land resources for Gambia; make sure that land use plans and maps accessible countrywide; and ensure production of a development systems and control policy. It also has the mandate to ensure properly structured LGA administrative systems and effective local government; ensure access to development resources by the people to facilitate socioeconomic development for poverty reduction; and also improve the capacities of local organizations and other groups safeguard sustainable development. The Lands Commission whose Secretariat is the Department of Lands and Surveys which is a department under the MOLGL is responsible for land administration is established under the Lands Commission Act, 2007:

It states that the Commission shall:

- a. Advise the Secretary of State on policy matters relating to land administration to ensure strict adherence to those policies and transparency in land allocations;
- b. Investigate disputes on land ownership and occupation in any area in The Gambia;
- c. Assess land rent and premium for properties within any area in The Gambia;
- d. Monitor the registration of properties and inspect land registries and records;
- e. Be responsible for all matters relating to national boundaries, including monitoring and reporting to the Secretary of State;¹⁸

The National employment Policy and Action Plan 2010-2014

48. The policy acknowledges that one of the Policy challenges for the country is the high rates of unemployment and underemployment. The stable macroeconomic growth has not translated into the generation of adequate employment opportunities nor has it spread other benefits of economic growth for most of the population. The main objectives of the employment are to:

- stimulate economic growth and development, reduce the coincidence of poverty and improve the level of living by minimizing the rates of unemployment and underemployment;
- promote well educated, trained, skilled versatile, self-reliant and enterprising labor force with the view to increasing employment;
- improve and strengthen the existing labor administrative system for promotion of decent work, worker participation in decision and an efficient industrial conflict resolution mechanism in the labor market.

Policies

The Program for Accelerated Growth and Employment (PAGE)

49. The Program for Accelerated Growth and Employment (PAGE) is The Gambia's development strategy and investment program for 2012 to 2015. Based on Vision 2020 and various sector

¹⁷ <https://moeccww.gov.gm/National-Environmental-Agency>

¹⁸ <http://www.accessgambia.com/information/local-government-lands.html>

strategies succeeding the Poverty Reduction Strategy Paper II, it was developed drawing on lessons learnt from the execution of past strategies to consolidate the country's achievements. The national priorities expounded in the PAGE revolve around sustainable environmental management and exploitation of the natural resources, and to consolidate the gains registered in the health and education sectors.

The Gambia Environmental Action Plan (GEAP, 2009-2018)

50. The Gambia Environmental Action Plan (GEAP) has been the first integrated environment and natural resources management policy document of the country. It provides the framework for environmental policy planning and natural resources management on a continuous basis. It is now in its second phase of implementation (GEAP II -2009 -2018). An important achievement of the GEAP implementation process has been the institutionalization of an environment and natural resources management framework, and specifically the establishment of the Environmental Impact Assessment (EIA) process in the country under the purview of a multi-sector Environmental Impact Assessment Working Group housed at the NEA headquarters. However, a major GEAP challenge has been the dormancy of the National Environment Management Council (NEMC), in that it does not meet as regularly as required, and the members have not always been kept abreast with the GEAP coordination and implementation process. This has resulted in considerable loss of political mileage and support for NEA, and consequently reduction in financial and material support over the years which further impacts negatively on GEAP implementation¹⁹

Vision 2020

51. The Vision 2020, which was formally launched in May 2006, seeks to transform The Gambia into a dynamic middle income country, socially, economically and scientifically over a 25-year period. The vision set out some objectives for agriculture and natural resources (ANR).

These are to:

- a. increase ANR output of both domestic and exports produce in order to ensure food security and generate earnings of foreign exchange to finance other aspects of the development process;
- b. create employment and generate income for the majority of the rural population who are largely dependent on ANR;
- c. diversify the ANR base to facilitate the production of a wider range of food and export produce in order to reduce the fluctuations and uncertainties associated with rural household incomes and export earnings;
- d. reduce disparities between rural–urban incomes as well as between men and women, curb rural–urban drift and accelerate the pace of development in the rural sector;
- e. provide effective linkages between ANR and other sectors of the economy such that developments in the non-agricultural sectors, particularly manufacturing and tourism, are founded on a firm and diversified ANR base capable of progressively releasing both labour and financial capital to other sectors of the economy; and
- f. create a sustainable and balanced mix between rain-fed and irrigated agriculture, thus ensuring an optimal use of natural resources, of surface and ground water, animal, aquaculture and crop production as well as between chemical and organic inputs and the use of agricultural by-products.²⁰

National Youth Policy²¹

52. The National Youth Policy 2009-2018 is the third 10-year policy that has been formulated for the

¹⁹ National Planning Commission, *Final Report of the Mid-term review of Poverty Reduction Strategy Paper (PRSP II) 2007 – 2011*, March 2010

²⁰ National Planning Commission, *Final Report of the Mid-term review of Poverty Reduction Strategy Paper (PRSP II) 2007 – 2011*, March 2010

²¹ http://www.youthpolicy.org/national/Gambia_2009_National_Youth_Policy.pdf

Youth of the Gambia. This Policy defines Youth within the age bracket of 15-30 and specifically targets out of school youth, unemployed, rural youth, young people with disabilities and HIV/Aids victims as well as emphasizing the needs of female youth. This target group is still relevant and is a key strength of this policy. Moreover, the policy has in-built flexibility to deal with young people who fall without its main age bracket. This Policy Framework is the result of intense national consultations involving all seven regions of the Gambia and all major stakeholders. Youth as a sector and as a crosscutting issue makes it important for this present policy to consolidate on the gains of the last policy whilst clearly moving into a new direction in terms of restructuring the coordination mechanisms and policies within the sector. It is poised to address the lack of effective coordination and monitoring which has been a major factor in the failure to achieve some of the key objectives of the last policy. The issues of employment, skills training, access to loans, leadership, participation and peace continue to be important issues for Gambian Youth.

53. The policy focuses on the fact that employment remains number one in all the regions, followed by access to skills training and access to grants, credit and loans. The policy assists the Ministry of Youth and Sports to restructure and revisit its coordination mechanisms in order to register concrete success in its processes to achieve overall success in the area of investing in Youth for sustainable development. The Policy contains recommended objective strategies to address the following challenges: Economic Development, Skills and other relevant training, Capacity Building on Participation and Leadership, Mentoring, Advocacy, Financing and Partnerships. The 7 role of the different arms of MOYS and its partners in the implementation of the policy is also highlighted, as well as creating a framework for monitoring and evaluation. The aspects of the National Youth Policy and Strategy relevant to ESIA and agri-business include those that address gainful employment and entrepreneur development as well as the environment.

Forest Policy of the Gambia²²

54. The policy orientation embraces strategies advanced by the medium term plan, strategy for poverty alleviation and growth, and other sub-sector policy frameworks. Rather than revenue generation and input delivery oriented, it is impact driven. While being user friendly and pro-poor, it further advances in the following four areas:
- a. research and development;
 - b. programme development;
 - c. institutional/organizational development;
 - d. decentralization and synergy.

The main thrust of the policy engages in partnerships and networking in order to strengthen national resource base. The policy has been developed considering these two levels of policies:

- i. Macro policies which in general terms, guide the conduct in creating the right environment that attract private sector, civil society organizations and communities to engage in viable resource management programmes;
- ii. Micro policies which are specific to various actors in natural resource management, and are designed as a code of guidelines that ensures efficiency and diligence in the attainment of policy objectives.

The Gambian National Environmental Action Plan (NEAP)

55. The NEAP which was supported by the World Bank was developed as a framework to assist in the analysis, evaluation, and discussion of the interdependence between the environment and the economy. It also seeks to provide an assessment of The Gambia's environmental priorities and an identification of options for mitigating the impact of environmental degradation. Its implementation gave rise to the World Bank assisted Environmental Management Project (EMP) and helped in strengthening Environmental Agencies at Federal and State levels. It also helped to catalyze the study on costs/benefits of biodiversity conservation, enactment of Environmental

²² https://moeccww.gov.gm/sites/default/files/Final%20Forest%20Policy%20%282010%20-%202019-%20%20%20The%20Gambia_0.pdf

Impact Assessment (EIA) legislations and the setting up of environmental standards. The implementation of NEAP was also supported by United Nations Development Programme (UNDP) through the Environment and Natural Resources Management Programme for The Gambia in the form of capacity building and institutional strengthening of Federal and State Environmental Protection Agencies.

National Climate Change Policy²³

56. The National Climate Change Policy is grounded in the country's national development and poverty reduction frameworks, including the Government of The Gambia's Vision 2020 and the 2012-2015 Programme for Accelerated Growth and Employment (PAGE). It sets out comprehensive and crosscutting policy directions to implement national development strategies in a climate resilient manner, drawing on all sectors of the population in a spirit of partnership and collaboration. The Policy sets in place enhanced institutional arrangements for coordination and mainstreaming, outlines a new integrated approach to resource mobilization, and develops a clear policy direction for human resource development. It focuses attention on policy priorities in four key thematic clusters, and emphasizes the links between climate change adaptation and disaster risk reduction. Lastly, it outlines the approach to be followed to develop the implementation framework for the Policy, through the subsequent National Climate Change Response Strategy and Action Plan.

National Adaptation Programme of Action on Climate Change²⁴

57. The Gambia's NAPA interacts and overlaps to some extent with its flagship environmental management and poverty reduction programmes. However, the NAPA is distinguished in some ways. The NAPA dispels the notion that climate is unchanging or inherently benign, integrates climate change and variability explicitly in its diagnostic analysis and blends different stakeholder values in a coherent and transparent manner that leads to solutions to known and emerging problems. Crucially, the NAPA stimulates a critical re-examination of the role of climate on societal and natural systems; agriculture (crops and livestock), fisheries, wildlife, energy, health, water resources and forests/woodlands.

Gambia's Intended Nationally Determined Contribution (2015)²⁵

58. The intended nationally determined contribution (INDC) 2015 document indicates that livelihoods of Gambia's poorest farmers are already at risk from climate change. Rising temperatures, too little rain or too much rain, thriving pests all lead to crop losses. In the short-term, for The Gambia to transition to a low-emissions and climate resilient development pathway, Government intends to adopt specific enabling conditions which must consist of national regulations, policies, subsidies and incentives, as well as international market and legal infrastructure, trade and technical cooperation. This will be achieved through intensive and extensive education, awareness raising and development and implementation of socioeconomic research as it relates to climate change.

59. In the medium- and long-term, the Government continues the mainstreaming of climate change into national development frameworks as achieved for the medium-term strategy – the Programme for Accelerated Growth and Employment (PAGE) and some sectorial policies and strategies (the Agriculture and Natural Resources Policy, the Forest Policy and the Fisheries Strategic Action Plan) by adjusting all national and sectorial policies to take climate change into consideration. With appropriate changes in the policies, including fiscal policy, the fostering of public investments to green key sectors (agriculture, energy, water resources, waste management, etc.); employment of new market-based instruments; greening public procurement; improving environmental rules and regulations, as well as their enforcement; improving trade and aid flows; and fostering greater international cooperation can be easily achieved.

²³ <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/laws/8109.pdf>

²⁴ <https://unfccc.int/resource/docs/napa/gmb01.pdf>

²⁵ <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Gambia%20First/The%20INDC%20OF%20THE%20GAMBIA.pdf>

60. Specific examples of short-term and medium-term activities that The Gambia plans to include in

her proposed Low Emissions Climate Resilient Development Strategy (LECRDS) and National Climate Change Action Plan (NCCAP) to implement the LECRDS include but not limited to:

- a. Improve the Climate and Climate Change Resilient urban and peri-urban infrastructure of the Gambia;
- b. Adapting the Agriculture System to Climate Change in The Gambia;
- c. The mainstreaming of climate change in all national development frameworks;
- d. The planning, development and implementation of an effective disaster preparedness and response strategy in support of climate change adaptation and loss and damage;
- e. Build and strengthen national capacities to promote and facilitate medium and long term climate change adaptation planning and implementation;
- f. Climate-proofing of the Urban and peri-urban infrastructure;
- g. Enhancing Resilience of coastal and estuarine/riverine economies and livelihoods of the districts in the coastal zone by reducing their vulnerability to sea-level rise and associated impacts of climate change;
- h. Climate Change Adaptation through large scale ecosystem restoration of the River Gambia Watershed;
- i. Development and Implementation of the National Climate Policy and Strategy of The Gambia
- j. Establishment of the National Climate Change Fund of The Gambia.

IFAD policies/strategies/procedures

SECAP

61. The IFAD'S ten Environmental and Social Values and Principles are relevant to the ROOTS project.²⁶ These social values and principles are:

- Address the vulnerability and adaptation needs for the rural poor;
 - Promote the sustainable use of natural resources and protection of key ecosystems;
 - Focus on partnership-oriented initiatives for improved social and environmental quality;
 - Address environmental and social impact assessments of agricultural and non-agricultural activities in an integrated manner;
 - Incorporate externalities and minimize social costs;
 - Implement participatory approaches, with special emphasis on the role of women;
 - Promote the development of Indigenous Peoples and other marginalized groups (pastoralists, hunters and gatherers);
 - Promote environmentally sound agricultural and manufacturing processes;
 - Ensure systematic environmental and social monitoring;
 - Undertake Strategic Environmental Assessments.
- IFAD has a Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures. For more information, visit the IFAD webpage: <https://www.ifad.org/web/guest/accountability-and-complaints-procedure>"; and **IFAD SECAP Procedure**²⁷.

62. The objectives of the Environment and Social Impact Assessment Study in the IFAD's SECAP procedure are to:

- identify key linkages between rural poverty and environmental management and assess the potential environmental and social impacts of the proposed project on the natural resource base and livelihoods of communities in the target areas;
- explore and identify key options for advancing environmental and social sustainability; and

²⁶ <https://www.ifad.org/documents/10180/a5e3ffcc-0ed7-4bc6-b523-39c25dc1edd8>

²⁷ <https://www.ifad.org/documents/10180/a36f992c-5e31-4fac-8771-404bea02796b>

- recommend key opportunities to influence IFAD support towards environmental sustainability and climate smart development.
63. This ESMF is intended to provide options that would inform and thus improve decision making of the ROOTS project design. The key environmental, climate change and social issues to be addressed include: (i) challenges faced to meet its rural development and food security goals; (ii) the major environmental, climate change and social issues that have a bearing on IFAD operations in the country; (iii) the direct impact and multiplier effect the mentioned issues have on the resilience of ecosystems and productivity of land and crops, natural resource management and rural livelihoods; (iv) the scale of volatility and risks resulting from climate variability and change; and (v) regulatory frameworks which are related to rural development and environmental issues.
64. The results of the ESMF and subprojects ESIA are: (i) an assessment of the environmental (and social/economic/institutional) issues particularly in the agricultural and rural development sector; (ii) the identification of links with relevant ongoing initiatives; (iii) the provision of specific measures, recommendations including opportunities to optimize adaptation, environmental management and resource use; in the project area. These results will shed light on the important opportunities available to build resilience and adaptive capacity in the program/project under development.
65. The Key Principles to guide the ESMF and the subproject ESIA are to:
- Look beyond the traditional ‘do no harm’ safeguards approach to mitigating environmental, climate change and social risks towards ‘doing good’ through greater focus on sustainability and management of environmental (rehabilitating degraded lands, seizing adaptation/mitigation opportunities and transforming the underlying inequalities that undermine inclusive development, etc.) and social impacts and risks;
 - Begin the ESIA with a scoping exercise with the objectives of identifying as much as possible the relevant social, environmental, and climate change issues, so that baseline data collection and impact assessment can focus on them;
 - Place strong emphasis on identifying opportunities and develop an appropriate management plan to enhance results and impact;
 - Identify and compare alternative scenarios to recommend realistic proposals for design mission consideration;
 - Identify capacity needs required to effectively implement the environmental and social management plan;
 - Produce a realistic monitoring plan, including appropriate change management processes;
 - Engage affected communities and other interested stakeholders throughout the ESIA process, from scoping to review and comment on the final draft report prior to decision-making.

The IFAD Climate Change Strategy (2010)²⁸

66. The IFAD’s climate change strategy calls for IFAD to systematically respond to increasing demands from clients for technical support and innovation to better respond to climate change. This means analyzing and addressing climate change challenges during the early stages of program and project design to build resilience and adaptive capacity. The strategy goal and purpose are to:
- To support innovative approaches to helping smallholder farmers build their resilience to climate change
 - To help smallholder farmers take advantage of available mitigation incentives and funding
 - To inform a more coherent dialogue on climate change, rural development agriculture and food security
67. The main strategy output is a more ‘climate-smart’ IFAD, where climate change – alongside other risks, opportunities and themes – is systematically integrated into core programmes, policies and activities:

²⁸ https://www.ifad.org/topic/tags/climate_change/2154532

- On operations, climate change can be – and in many cases already is – factored into IFAD’s operating model. This means incorporating it into our toolkit for the early stages of country programme and project design and for implementation.
- On knowledge, innovation and advocacy- IFAD will explore new arrangements for sourcing climate-related expertise, share ground-level experiences to ensure their application throughout IFAD-supported programmes, and continue our work to shape the global dialogue on climate change for smallholders.
- On resource mobilization, the focus is to make IFAD’s expanding overall portfolio climate-smart. Increased supplementary climate funds will continue to be sought to deepen the integration of climate change into IFAD’s core programmes and to cover the increased cost this implies.
- On internal organization, IFAD will make greater use of existing in-house skills and people, and will implement a new organizational structure that brings together and increases its staff capacity on climate and the environment. It will also continue to demonstrate the values of environmental awareness internally.

The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy²⁹

68. Sustainable environment and natural resource management (ENRM) lies at the heart of delivering poverty reduction for rural people. Poor rural people face a series of interconnected natural resource management challenges. They are in the front line of climate change impacts; the ecosystems and biodiversity on which they rely are increasingly degraded; their access to suitable agricultural land is declining in both quantity and quality; their forest resources are increasingly restricted and degraded; they produce on typically marginal rain fed land, with increased water scarcity; energy and agricultural input prices are on a rising long-term trend; and declining fish and marine resources threaten essential sources of income and nutrition.
69. Environmentally damaging agricultural practices are a major driver of these challenges. There is growing concern over inappropriate approaches that drive excessive use of fertilizers and pesticides, pollution of waterways and aquifers, build-up of salt in the soil, water scarcity in major river basins, declining levels of groundwater and loss of crop biodiversity. Large parts of Africa rely on rainfed agriculture with little or non-existent use of organic or inorganic fertilizers, soil erosion and poor access to seed varieties. Weak governance, damaging policies and changing consumption patterns lie at the heart of this environmental degradation: poor rural people, including smallholders, are often disempowered and thus unable to sustainably manage natural resources; a lack of clear land access and tenure rights removes incentives to maintain natural assets; distorting trade policies and fossil-fuel and other subsidies are key drivers. The response requires an ‘evergreen revolution’, powered by sustainable agriculture that balances crop/livestock, fisheries and agroforestry systems, so that surplus inputs are avoided and soil fertility and ecosystem services are not compromised, while production and income are increased. Building on a growing body of evidence of the success of sustainable agriculture investments, there is a huge opportunity to further scale up multiple-benefit.
70. IFAD’s ENRM stresses that project designs present new opportunities to improve systematic integration and scaling up of ENRM of the portfolio. Such integration can help IFAD to engage in new and strengthened partnerships with specialized entities for enhanced and effective responses to issues associated with natural resources and, climate variability and change. ENRM is at the core of delivering IFAD’s poverty reduction and sustainable agriculture mandate because its target groups rely directly on the environment and natural resources for their livelihoods, and client demand for support for ENRM is increasing.
71. Sexual Harassment/Sexual Exploitation and Abuse Policy: IFAD prioritises no tolerance for SH/SEA in its supported operations. Ensure that appropriate precautionary and remedial measures to identify/receive/remedy/report (proportionate to level of risk) any occurrences of potential SH/SEA risks/complaints are incorporated in both the project design and PIM (see IFAD policy on SEA).

²⁹ https://www.ifad.org/topic/resource/tags/climate_change/2096936

The Gambia Country Strategic Opportunities Programme 2019-2024³⁰

72. The results-based country strategic opportunities programme (COSOP) will cover the period 2019-2024 and be anchored to the National Development Plan (NDP) 2017-2020. The NDP envisions a transition to a green economy driven by small and medium-sized sector investment, and delivering sustainable and inclusive benefits through the involvement of youth and women as key economic actors. The use of climate-smart agricultural technologies figures prominently in the NDP as do innovative technologies to increase labor productivity and decrease menial labor, particularly for women. The Plan underlines the importance of improved relations with Senegal and other regional states and development partners. The COSOP has two strategic objectives:
- a. Enhance the productivity and resilience of family farms through sustainable management of natural resources and adaptation to climate change, with a focus on youth and gender impacts
 - b. Improve the management capacity and inclusiveness of professional farmers' organizations/cooperatives, and enhance farmers' access to communal assets, markets, and profitable agricultural value chains
73. The programme targets smallholder family farmers who are members of farmers' organizations or cooperatives, youth and women. The programme works primarily in the rice and horticultural value chains where the overwhelming majority of farmers are women; other crops with the potential to contribute to the profitability, resilience and adaptation of diversified farming systems and nutrition security are also being promoted. The watershed development approach pioneered by IFAD is also scaled up. The IFAD programme during the 2019-2024 COSOP period has a single large project. The programme maximizes the utilization of grants from global climate and environment funds – such the Global Environment Facility – and grants focused on policy dialogue and South-South and Triangular Cooperation to increase the impact of the project investment.

Table : Comparison between IFAD's SECAP Assessment Process and Gambia's EIA Guidelines and Procedures

IFAD's SECAP	EIA Procedures in Gambia
<p>Assessment under SECAP is divided into 8 steps:</p> <ol style="list-style-type: none"> 1. Screening and classification 2. Environmental assessment studies if required 3. Climate risk assessment if required 4. Consultation and review 5. Loan negotiation 6. IFAD's Board approval of project proposal including EIA report 7. Project supervision and implementation 8. Project completion and ex post ESIA evaluation 	<p>Technical steps 1, 2, 4, 6 and 7 are similar.</p> <ol style="list-style-type: none"> 3. Climate risk assessment is implied 5. Loan negotiation not applicable as procedures are general for all projects types and proponents 8. Routine monitoring takes place after project completion as long as activities continue
<p>Project classification:</p> <ol style="list-style-type: none"> A – Full blown studies B – Limited analysis mainly with ESMP C – No assessment necessary 	<p>Project classification:</p> <ol style="list-style-type: none"> A – Full blown studies B – More information required to make a decision on the environmental and social risks C – No assessment necessary; immediate approval, with conditions, if there are no likely impacts, or rejection if the project is totally not in line with Gambian law

³⁰ <https://webapps.ifad.org/members/eb/126/docs/EB-2019-126-R-19.pdf>

Climate risk classified as high, moderate or low	None specified for climate risk
Climate change given high importance with the need for separate climate risk assessment	Environmental assessment is expected to include climate just like any other environmental issue
SECAP developed in 2014 and revised in 2017 with considerations to guide management of emerging environmental and social issues	<p>2017 Strategic Environmental Assessment Gambia Policy developed and pending adoption.</p> <p>EIA Regulations adopted in 2014 as legal instrument, and structured more for enforcement than guidance.</p> <p>EIA Guidelines and EIA Procedures both of 1999 may need review.</p>
<p>SECAP includes 13 Guidance Statement notes on IFAD's main intervention areas:</p> <ol style="list-style-type: none"> 1. Biodiversity and protected area management 2. Agrochemicals 3. Energy 4. Fisheries and aquaculture 5. Forest Resources 6. Rangeland-based livestock production 7. Water (agricultural and domestic use) 8. Dams, their safety 9. Physical Cultural Resources 10. Rural roads 11. Development of value chain, microenterprises and small enterprises 12. Rural Finance 13. Physical and Economic Resettlement 14. Community health 	<p>EIA Guidelines on 7 main sectors in The Gambia</p> <ol style="list-style-type: none"> 1. Manufacturing 2. Mining and on-site mineral processing 3. Road infrastructure 4. Solid waste management 5. Agriculture 6. Fisheries and aquaculture 7. Tourism development

DESCRIPTION OF THE ENVIRONMENTAL, CLIMATE AND SOCIAL CONTEXT

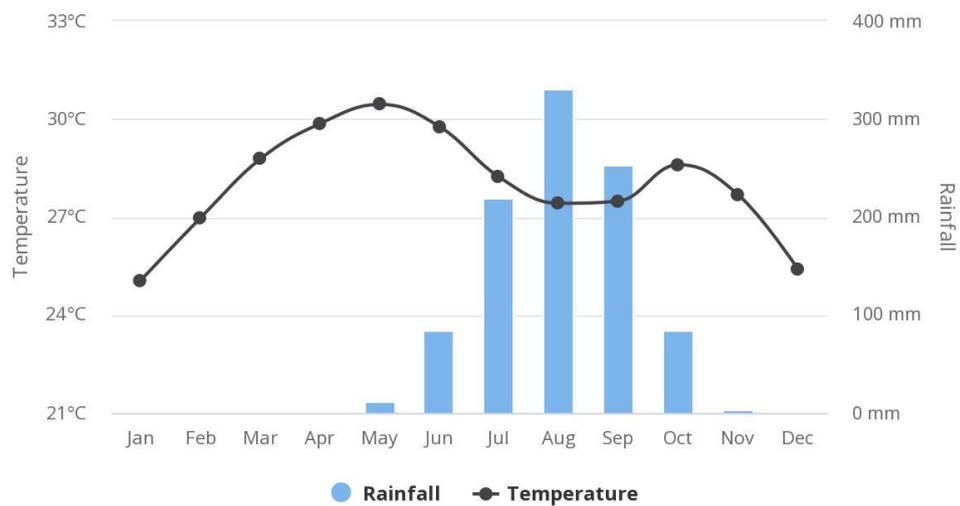
Environmental Context

74. The Gambia is endowed with rich and varied agro-ecological systems despite its small size (closed and open woodlands, trees and shrub savannah, wetland ecosystems, grassland savannah, marine and coastal ecosystems and agricultural ecosystems.) The River Gambia, which is over 1,130 km long, originates in the Fouta Djallon highlands in Guinea and flows the length of the country before emptying into the Atlantic Ocean and define the production systems.
75. The three major biological regions of the country are: i) The marine and coastal zone along the western coast, ii) the area along the River Gambia and related freshwater and estuarine ecosystems, and iii) the terrestrial ecosystems behind the coastline and to the north and south of the river – 20% biodiversity that is globally significant, as well as biodiversity and natural resources of great significance at national and local levels. Wetland ecosystems cover almost 20% of the total land area, consisting primarily mangrove forests (64%), uncultivated swamps (7.8%) and cultivated swamps (3.2%).
76. The Gambia has designated 3 RAMSAR Sites and is on the verge of designating additional sites. ROOTS is not planning to work in any RAMSAR site. The country's total forest area, including mangroves, is estimated to be 505,300 hectares or 43% of the total landmass of the country. At present, no forest areas are classified as protected forest. State forestlands account for 78% of the total forest area; approximately 7% of the total forest area is included in the 66 gazetted forest parks. Community and private forest areas constitute only 17,487 ha, but are expected to increase as more state forestland is brought under these management systems.
77. The Gambia has three primary agro-ecological production zones: The Sudano-Sahelian Zone or Riverine Zone: characterized by savannah woodland, covers a great part of the country (492,999 ha); 76% of this zone is cultivated and it accounts for more than 60% of national agricultural production. The main agricultural production in this area is early millet, groundnuts, sorghum, maize, cotton, upland rice and irrigated rice.
78. The Sahel-Savannah Zone or Semi-Arid Zone: covers approximately 147,684 ha; only 44% of the area is cultivable and the area only accounts for about 12% of national agricultural production. This zone has relatively low rainfall (below 900 mm) and concentrates on the cultivation of early maturing cereals such as maize, early millet, upland rice and "Findi grass"; the zone also has a fairly large livestock population that puts significant pressure on natural resources.
79. The Guinea-Savannah Zone or Humid zone: located along the coastline, has high and moderately reliable rainfall (1000 mm and above), and covers an area of 179,790 ha, of which 66% is cultivable. Major cereals produced in this zone are primarily late varieties such as late millet, sorghum, and upland rice; the zone also has a large cattle population and extensive use of animal traction in agricultural production.

Climate Change Context

80. The Gambia experiences a Sahelian climate, characterized by a long, dry season (November to May) and a short, wet season (June to October). Average temperatures in Gambia range from 18°C to 30°C during the dry season and 23°C to 33°C during the wet season. In La Niña years, temperatures tend to be cooler than average throughout the year. The long-term mean annual rainfall of 860 mm is largely determined by July, August and September rainfall, where mean

monthly rainfall varies between 150 mm (in the northern extremes) and 300 mm (in the southern



extremes)

Figure 1: Average Monthly Temperature and Rainfall of Gambia (1991-2016)

Temperature

81. In The Gambia, mean annual temperatures have increased by 1.0°C since 1960, an average rate of 0.21°C per decade. The rate of increase has been most rapid in the months of October, November and December, at 0.32°C per decade. The mean annual temperature in The Gambia is projected to increase by between 1.1°C to 3.1°C by the 2060's and by between 1.8°C to 5.0°C by the 2090's. The projected rate of warming is faster in the interior regions of The Gambia than in those areas closer to the coast. All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in current climate.



Figure 2: Projected Change in Monthly Temperature for Gambia for 2040-2059

Precipitation:

82. Linear trends indicate that wet season (July, August and September) rainfall in The Gambia has decreased significantly between 1960 and 2006, at an average rate of 8.8 mm per month per decade. The length of the rainy season has also been decreasing with increasing variability in inter-annual rainfall. Projections of mean annual rainfall averaged over the country from different models in the ensemble project a wide range of increases and decreases in precipitation for the Gambia, but tend towards decreases, particularly in the wet season (July, August and September).

83. Projected annual precipitation changes range from -23 to +18% by the 2090's, with ensemble means between 0 and -3% and with increasing occurrence of heavy rainfall events. Projected July, August and September changes ranges from -53 to +74% by the 2090's, with ensemble means between -7 and -20%. The range of projections from different models in the ensemble includes both increases and decreases in all seasons.

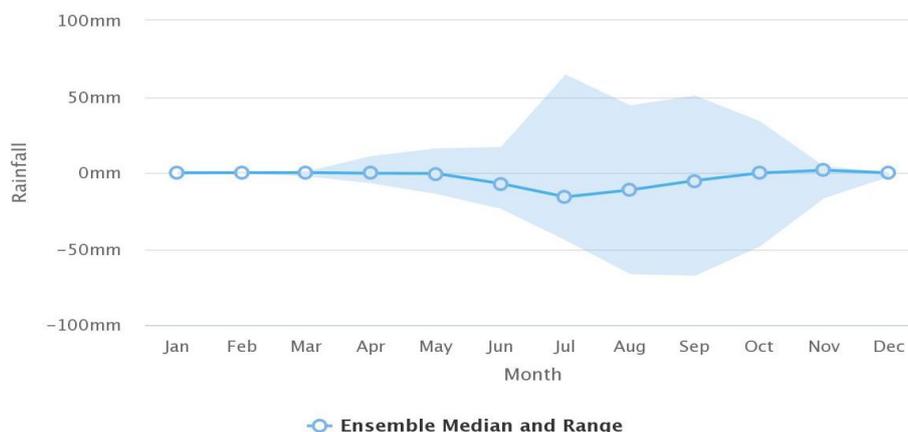


Figure 3: Projected Change in Monthly Rainfall for Gambia for 2040-2059

Social-economic and cultural context

84. The Republic of The Gambia is one of the smallest countries in West Africa surrounded by the Republic of Senegal on the northern, eastern and southern sides, and bounded on the Atlantic Ocean. The Gambia is less than 48.2 km wide at its widest point, with a total area of 11,295 km² and a generally flat terrain, with the highest point only 53m above sea level. The Gambia has an estimated population of 1.88 million of which nearly half is rural and has greater incidence of poverty (2013 census). The Gambia is one of the most densely populated countries in Sub-Saharan Africa (population density in 2013 was 176.1 per km²). The population is expected to nearly double in 21 years with a growth rate of 3.1% per year and dominated by youth.

Overall poverty situation

85. Notwithstanding a 10 percent reduction of poverty in the last ten years, The Gambia remains among the poorest and unequal countries in the World. The country is classified by the UN as a Least Developed Country (LDC) with a Gross National Income (GNI) per capita of USD 450 in 2017 (UNDP, 2018). The Human Development Index (HDI), valued at 0,460 in 2018, puts The Gambia in the low human development bracket (174 position) and reflects the “multi-dimensional” aspect of poverty, with low literacy and education levels, poor health indicators and weak government infrastructure and services. Sixty-two percent of the Gambians live with less than USD 3.1 per day and 48 percent live below the national poverty line of USD 1.25 per day. Poverty is more pronounced in rural than urban areas as 74 percent of Gambians below the national poverty line live in rural areas (World Bank, 2017)³¹.
86. The rural poor are essentially engaged in agricultural production on average land holdings of 2 hectares per household. Poor women headed households are slightly more prevalent than poor male headed households. Farmers remain the poorest socio economic group and represent more than 60% of people living below the poverty line. The contribution of the agricultural sector to the creation of wealth and the acceleration of growth remains below the potential of the sector. The low productivity of the agro pastoral sector, exacerbated by the climate crises and frequent natural disasters (drought, flooding, sand storms, and locusts, among others), has made the

³¹ World Bank. 2017. World Development Indicators. Washington, D.C: World Bank. Available at: <http://data.worldbank.org/>

conditions of the poorest rural households (women and youth) even worse, leaving a large part of the population in situations of chronic vulnerability.

Gender

The Gambia is a highly patriarchal society with cultural values and roles constraining female participation and leadership in society. According to the 2015 Gender Inequality Index, The Gambia ranked 148th out of 159 countries. Some progress has been achieved in attaining gender equality but much remains to be accomplished. In education, there is gender parity at the preschool, primary, and secondary levels, but inequality remains at the tertiary level and in vocational training. The literacy rate for women is low at 40 per cent compared with 64 per cent for men. According to a Demographic and Health Survey, the percentage of women who reported having experienced gender-based violence was 41 per cent in 2013. The Gambia sexual and gender based violence remains a problem and the new government is committed to high prevalence of gender-based violence through a zero tolerance with new policy and regulations.

87. While women make up 70 per cent of the agricultural labour force, produce 70 per cent of the output and perform 50 to 70 per cent of the agricultural tasks, they have minimal control over their own land, income and access to credit, and are extremely vulnerable to climate change. They mainly grow vegetables, groundnuts, rice, millet and maize for both household consumption and for sale. Unpaid work which is at the foundation of the Gambia society includes preparing food, collecting fire wood and fetching water; childcare; rearing small animals and poultry; and petty trade. Closing the gender gap in agricultural would increase crop productivity and increase the GDP. The project will support the scaling up of upgraded market-oriented integrated vegetable gardens for women; resilient rice farming for women associations during the dry season and capacity building to enter into win-win commercial partnerships.

Youth

88. According to recent United Nations report, 64 per cent of the population is below the age of 25 and 42 per cent below the age of 15. Poverty disproportionately affects youth, with 60 per cent of the poor under the age of 20. Youth, particularly unemployed rural youth, have very low levels of education and vocational training relative to regional comparators and leave school earlier than their urban counterparts. They have very limited access to productive resources (e.g. land and credit) to establish farming enterprises. This accentuates rural to urban migration and creates on-farm labour shortages during planting and harvesting time.
89. In the Gambia, few young people see a future for themselves in agriculture or rural areas. Attracted by modernity and opportunities, rural Gambian millennials from families that are highly dependent on agriculture are migrating from rural areas to cities and abroad at an astounding rate. Rural youth that have migrated to cities are generally unemployed, in poor health, socially excluded and living in inadequate conditions. They are also highly vulnerable to sex tourism and human trafficking or are tempted to join extremist groups in the Sahel. Rural transformation requires making smallholder agriculture sustainable, profitable and attractive to youth. Therefore, the project will be promoting agro-preneurial training and development with the support of the Songhai Centre as an incubator for a new generation of youth and women agri-preneurs and farmers in the Gambia. Rural Youth Awards will be supported and used as a tool to attract youth in agriculture.

Nutrition

90. High levels of poverty translate into tenuous food security and malnutrition. In the 2018 Global Hunger Index (GHI) established by IFPRI, Gambia ranks 75th out of 119 countries (scoring 22.3) and suffers from a level of hunger that is considered as “serious”. The country is also on the verge of a nutrition emergency. As of August 2016, an estimated 551,000 people were food insecure, with 60,726 suffering from extreme food insecurity. Malnutrition is widespread, being most prevalent in the local government areas (LGAs) of Kuntaur, Janjanbureh, Basse and Kerewan (all

above 10 per cent). According to the World Bank, 20 per cent of infants are born with low birth weights; some 28 per cent of children under five years are stunted, increasing the risk of impaired cognitive development. More than one third of child deaths are due to undernutrition from increased severity of disease. Anemia affects more than 75 per cent of pregnant women and preschool-aged children and vitamin A deficiency is also widespread. Therefore, the project will introduce systematically nutrient and vitamin rich crops, such as the orange sweet potato to boost nutrition impacts, and integrate poultry farming (eggs and broilers) within gardens to diversify income and household diet sources and, where appropriate, establish partnerships with the World Food Programme (WFP) School Feeding Program and nutrition capacity building.

REVIEW OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS IN THE GAMBIA

Potential Environmental Benefits

91. The greatest overall positive benefits from Rice and Horticulture (vegetable) production perhaps lies in the ability to convert their waste to useful products. Rice waste are excellent for briquette making which can serve as alternative source of fuel for heating in rural households. This will reduce the pressure on firewood and forest degradation. The harvested rice and vegetable straws could also be excellent for hay/silage to feed animals. However, without the conversion knowhow and resources, the waste from Rice and Horticulture become a nuisance with their concomitant effects on human health.

Potential negative environmental impacts in the agricultural sector

92. Although the project is B with limited environmental impacts, a number of potential negative environmental impacts have been experienced in the Gambia. ROOTS has already planned some interventions that may benefit to other project and country environment management.

93. Other issues are the low productivity, limited access to markets; limited access to financial services and products especially for young people and women, inefficient and limited farming technologies and unsustainable practices (deforestation, shifting cultivation) ; lack of gainful employment opportunities off season and off farm, which spurs youth migration and decreases labour availability during the production season; local land access and user rights that require official recognition and results in gender disparities; unclear systems of succession which discourage on-farm investments; climate shocks, high rural illiteracy rates that impede adoption of improved technologies low availability of financing for family farming; and lack of capacity to efficiently deliver essential rural services such as extension advice and land registration and management.

Climate change issues

94. The Gambia ranks as one of the country's most vulnerable to climate change based on the GAIN index, ranking 146 out of 181 countries, (or 16th most vulnerable). The food security vulnerability to climate change, which is measured in terms of food production, food demand, nutrition and rural population, is 177th out of 186 ranked countries. The indicators for the score include projected change of cereal yields, projected population growth, food import dependency, rural population, agriculture capacity and child malnutrition. (IFAD, 2015b). The most vulnerable areas from a climate change perspective will be the lower-central part of the country where saline water meets freshwater, the balance of which is determined by rainfall conditions and, increasingly, sea level rise. However, other regions are also vulnerable. In the Western part of the country, which is more densely populated, lowland rice and horticulture are vulnerable to saline ground water resources and short periods for low rains and heavy rains that will worsen land degradation in the uplands. In the Eastern part of the country, rainfall variability threatens both droughts and floods, and here too temperature increases will be felt more keenly (IFAD, 2015b).

Agriculture and climate change

95. Agricultural production in the Gambia is largely dependent on rain-fed subsistence farming which is inhibited by numerous climate factors including rainfall variability, increased temperatures and sea level rise. For instance in 2011, decline in yield owing to unpredictable rainfall patterns was

high at 79% for upland rice, 54% for millet and 67% for groundnuts compared to 2010 records on the same crops³². Since 1960, the Gambia has experienced increasingly erratic rainfall patterns, higher intensity storms, intra-seasonal drought and increasing average air temperatures, accompanied by periodic cold spells and heat waves³³. Available literature points to an increased average temperature between 3 and 4.5° C, bringing with it an increase in potential evapotranspiration by 2075. With respect to projected rainfall, GCM model outcomes vary widely between -59% and +29% of the 1951-1990 average of 850 mm per annum. It is also reported that the low-lying topography of the country coupled with a 1 m rise in sea level could potentially inundate over 8% of the country's land area. This includes over 61% of current mangroves, 33% of swamps, and over 20% of current lowland rice growing areas³⁴.

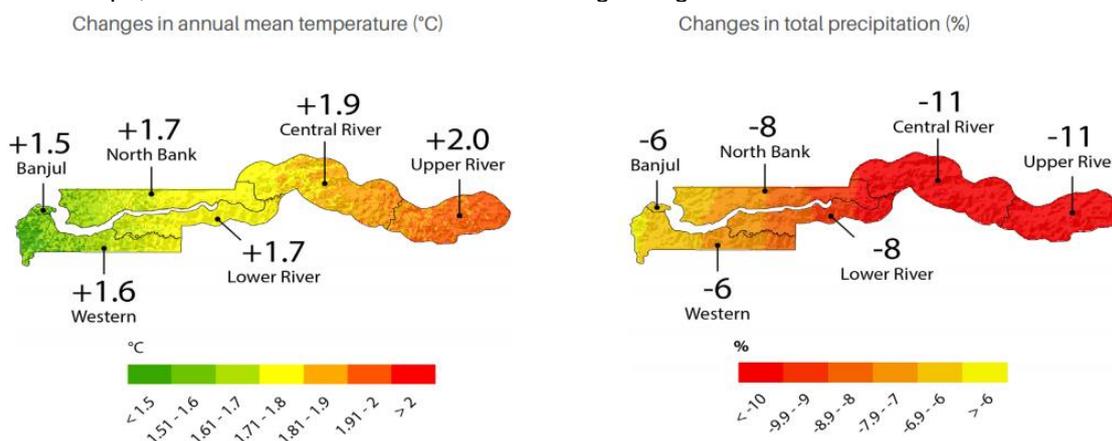


Figure 4: Projected changes in temperature and precipitation in the Gambia by region by 2050

Agricultural greenhouse gas emissions

96. Although the Gambia is one of the countries least responsible for climate change, it has ratified the United Nations Framework Convention on Climate Change (UNFCCC) and has committed to engage in the development and implementation of many of the actions of the framework. He Gambia's current total GHG emissions stand at 7.2×10^{-7} Mt Co₂ eq as at 2013. Sectorally, the highest emissions (79%) came from agriculture while the energy sector contributed about 10%. Minimal emissions from waste management (0.5%) and other sources are also reported. With respect to the agriculture sector, about 65% came from the livestock sub-sector where enteric fermentation contributed to about 36% of methane emissions while manure left on pastures constituted about 26% of emissions from methane and nitrous oxide³⁵.

Climate change adaptation

97. In the Gambia, there are already farming systems practices being undertaken by smallholder farmers that conform to the principles and strategies of sustainable agriculture. The practices can generally be categorized as follows:

- a. **Soil and nutrient management** – where farmers use compost from manure and crop residues, legumes for natural nitrogen fixation or as green manures planted in intercropping systems as part of a scheme of crop rotation or in agro-forestry systems. Using these methods and practices markedly reduce the need of synthetic fertilizers which, apart from their high costs contribute to GHG emissions.

³² GoTG. 2009. Agriculture and Natural Resources (ANR) Policy (2009-2015).

³³ Urquhart, P. 2016. National Climate Change Policy of the Gambia Final Report: Final Draft Policy

³⁴ Yaffa, S. 2011. Assessment of the Impacts of Climate Change on Gambian Smallholder Food Crop Production and Livelihood Conditions, ActionAid the Gambia.

³⁵ GNAIP. 2015. Republic of the Gambia National Agricultural Investment Plan (GNAIP). Banjul, the Gambia.

- b. **Water harvesting and use:** Improved water harvesting and retention (such as pools, dams, pits, retaining ridges, etc.) and irrigation systems are fundamental for increasing production and addressing the increasing irregularity of rainfall patterns. Common irrigation facilities in the Gambia are pump and tidal systems and boreholes with different distribution facilities such as reservoir tanks and overhead drip systems. Water catchment tanks are also used in some schools to harvest rain water that is used for irrigation in vegetable gardens and orchards. There are also soil and water conservation structures in the form of dikes, bunds and spillways that facilitate water retention and combat salinity.
- c. **Pest and disease control:** There is evidence that climate change is altering the distribution, incidence and intensity of animal and plant pests and diseases as well as invasive and alien species. Control measures from the CSA perspective and which are common in the Gambia include traditional and physical approaches. The integrated pest management approach is also widespread following its introduction by the Pest Management Unit of the Ministry of Agriculture.
- d. **Resilient ecosystems:** Improving ecosystem management and biodiversity can provide a number of ecosystem services, which can lead to more resilient, productive and sustainable systems that may also contribute to reducing or removing greenhouse gases. In the Gambia agroforestry systems such as alley farming, farm border planting as well as the use of energy-efficient equipment such as improved cooking stoves are carried-out in many communities.
- e. **Genetic resources:** The National Agricultural Research Institute (NARI) of the Gambia continues to release new crop and animal breeds suitable for climate change adaptation. These include early maturing, high yielding and drought resistant crop varieties suitable for the changing climate. Similarly, there are diversified and sustainable livestock husbandry systems that have marked improvements on food security and nutrition for farmers.

Potential social benefits

98. The programme will directly benefit 40,000 households³⁶, involving about 320,000 people³⁷. The primary target groups are: (i) women farmers who have existing formal or informal associations (*kafos*); (ii) female and male youth under the age of 35 years, and; (iii) cooperatives societies and SMEs engaged in 4P arrangements for commercialisation and value addition. Due to the targeted value chains, it is expected that 80 percent of direct beneficiaries will be women and 25 percent will be youth as most of the rural areas are depopulated, and 50 percent nutrition sensitive. By its nature, more than 30% of the project activities are climate-focused, mostly youth. It is expected to reduce unemployment especially among the youth, reduce poverty and create wealth and income, improve the food security situation, improve access to social (health and education) and financial services and reduce travel time especially among the teeming rural population. Rehabilitation of rural feeder roads and farm tracks will improve the life and livelihoods of more indirect beneficiaries of the project through savings in transport cost, post-harvest losses and access to the market. Hundreds more will directly benefit through short term labour, as contractors, and as construction supervisors.

Potential negative social impacts

99. Poverty affects an estimated 60% of the Gambia's population; while extreme poverty is mainly rural and affects more women and youth. The rural poor are essentially engaged in agricultural production on average land holdings of 2 hectares per household. Poor women headed households are slightly more prevalent than poor male headed households. Farmers remain the poorest socio-economic group and represent more than 60% of people living below the poverty line. The

³⁶ See disaggregation of beneficiaries in the results framework.

³⁷ Based on the average of 8 persons per household.

contribution of the agricultural sector to the creation of wealth and the acceleration of growth remains below the potential of the sector. The low productivity of the agro-pastoral sector, exacerbated by the climate crises and frequent natural disasters (drought, flooding, sand storms, and locusts, among others), has made the conditions of the poorest rural households (women and youth) even worse, leaving a large part of the population in situations of chronic vulnerability.

- **Targeting:** has been a key challenge to reach the most vulnerable people in communities. Recent supervisions projects of IFAD revealed that the targeting tool needs to be strengthened with that all relevant indicators, disaggregated data by sex, age and ethnic minority, the head of household, small and medium-sized enterprise owner or group leader
- **Nutrition:** One study in 2013 estimated that at least 370,000 people are in need of either immediate humanitarian assistance or remain vulnerable and require some sort of support to strengthen their resilience to future crises³⁸. Malnutrition is widespread, being most prevalent in the Local Government Areas (LGAs) of Kuntaur, Janjanbureh, Basse and Kerewan (all above 10%).

100. **Gender equality and women's empowerment:** Gender inequality remains a challenge that hinders efforts to achieve inclusive human development and economic growth. Women in the Gambia form a large proportion of the labour force in the agricultural and non-agricultural sectors and are responsible for guaranteeing their family's nutrition and food security. The gender gap in agricultural productivity is linked to unequal access to essential agricultural inputs such as land, labour, techniques and seeds, but also social institutions and norms. These gender gaps is still very significant and that traditional gender norms remain tenacious, (the result being that women and girls are at a disadvantage in both the public and private spheres), including land ownerships. This limits opportunities for investments.

- **Youth:** In the Gambia, few young people see a future for themselves in agriculture or rural areas. Attracted by modernity and opportunities, rural Gambian millennials from families that are highly dependent on agriculture are migrating from rural areas to cities and abroad at an astounding rate. In most cases, once they reach their destination, they are forced to face unemployment, poor health conditions, social exclusion and inadequate living conditions in slums. They are also highly vulnerable to radicalization by sex tourism, extremist groups and human traffickers, especially in the Sahel with Boko Haram. Rural-urban migration can also be highly gender-biased. However, because of the size of the country, agriculture could be very attractive to the bulge of youth living in cities and working in rural areas or vice versa.
- **Resource Conflicts:** Clashes between communities and pastoralists leading to heightened human insecurity remains one of the threats that should be considered This needs to be managed through stakeholder engagement and strengthening of existing informal and formal grievance redress systems to build confidence and understanding and address any complaints raised in a fair, responsive and timely manner. ROOTS should also pursue land governance and sustainable land management that guarantees land capitalism and security of tenure as a mitigation option to land conflicts.
- **Unsafe and Non-Healthy Working Conditions:** Working conditions across sectors are generally poor in the rural areas due to weak extension systems, and limited awareness of and non-compliance with health & safety standards. In the agricultural sector, the drudgery faced by most farmers makes them more vulnerable to agro-chemical toxins from wrong methods of handling and overuse of fertilizer and pesticides. In addition, due to the high level of poverty, children often help in the production and/or processing of agricultural commodities. Although cases of water-borne diseases among rice farmers are not common in the project area, concerted efforts should be made to ensure that appropriate Personal Protective Equipment (PPE) are used while engaging in these activities.

³⁸ Based on projections of food insecurity situation following an October 2013 assessment conducted by the Prevention and Management of Food Crises Network (PREGEC), as well as other factors such as increases in commodity prices; resurgence of epidemics; prevalence of natural disasters; chronic shortages and limited access to basic social services.

- **Managing expectations and Conflicts resurgence:** Agriculture is now in the front burner of issues discussed in the country. In the last couple of years, there has been an increase in the awareness about agriculture and this has increase the expectation levels of the beneficiaries. In managing expectations, the project should ensure that the beneficiaries are enlightened and sensitized about the various project and the activities. It is also important that information pertaining the ROOTS programme is disseminated through credible persons or media.
- **Elite and Political Capture:** Weak and non-transparent governance structures as well as exclusionary and divisive politics poses the risk of the ROOTS being hijacked or captured by the political and administrative elite to benefit only their cronies with significant impacts on the target beneficiaries. However, this has been taken care of by ROOTS in the approach to targeting and profiling of Fos. This approach which ensures that prospective beneficiaries are selected based on laid down criteria should be implemented in the new states.

The Long Term Solutions and Opportunities on Agriculture Development and Rural Poverty.

101. To address the identified challenges and threats and achieve the SGDs, The Gambia must continue to improve its capacity to manage the environment and natural resources, particularly as the level of economic activity controlled by the private sector and potential environmental impacts increase. However, a number of barriers exist to implementing this consolidation and strengthening of the country's sustainable development efforts, as described below.
102. Inadequate land use and land right policies and lack of institutional capacity for land use planning: In The Gambia, government policies on, and definition of, ownership and user rights of natural resources are unclear, and there is a wide divergence between the perceptions of state agents and those of local communities on these issues. To improve the performance of the sector, the country should address the drivers of land degradation in an integrated manner, are fragmented along various sectors, and as a consequence, land use conflicts between various groups and sectors persist and land uses in many instances are not compatible with land capacities. If left unaddressed, implement proper land reforms aligned on the National Adaptation Plan and the Climate Change Strategy, address adequately address wetland conservation and livelihood issues, and to facilitate the designation of more RAMSAR Sites in order to enhance biodiversity conservation. With regard to capacities, both institutional and human level, the country must invest in mainstreaming environment, climate and social inclusion issues into national planning processes, budget and investment and build the technical capacities of all actors
103. Absence of planning processes and local capacities / support to enable integrated application of sustainable natural resource management measures: The manipulation of fragile ecosystems for human habitation and other uses has increased the incidence of floods in both the rural and urban areas, and poor land use planning and management is identified as a critical factor contributing to this problem. The absence of insurance coverage for commercial operators in many sectors has increased the impact of natural and man-made disasters. Community capacities to participate in planning, implementation, and monitoring related to land use and management are extremely limited, compounded by low literacy rates and resource constraints, including the absence of basic facilitates and poor communication. The problem of access to basic ecological and socio-economic information and models for innovative practices is a constraint to adopting sustainable land management and land use planning practices, made worse by difficulties in accessing information concerning regulatory texts by the affected principal rural actors. Finally, adoption of sustainable land use practices and compliance with environmental laws and regulations will greatly depend on the awareness of the public of their environmental rights and responsibilities.
104. Lack of experience and models for integrated natural resources use planning, climate change management that reduces negative impacts on key ecosystems and biodiversity habitat from adjacent productive landscapes: The rotational grazing and decreased stocking rates in regions adjacent to protected areas is limited due to the lack of any landscape-level planning / management processes that address both productive and protected landscapes; a lack of

experience and tested approaches for such processes; and inadequate infrastructure and technical capacities. The lack of climate information's systems and infrastructures limit people awareness on climate information's for crop calendar and planning. This also limits the development of the insurance industry in the country to mitigate losses after droughts, heats and diseases. Proven Integrated business models which combine sustainable agriculture, livestock and are still not well disseminated and adopted. Training and financing programs remain limited as well inadequate financing, limited park facilities and infrastructure, and the failure to implement a systemic approach for biodiversity conservation and management of protected areas. Existing system of protected areas is not sufficiently connected by ecological corridors, and key areas remain entirely unprotected.

105. Inadequate protection of marine and coastal ecosystems and lack of experience and capacity for MPA management: At present, there are no MPAs in The Gambia, and those PAs that are located along the coastline (Niimi NP, Tanbi Wetland NP, and Tanji Bird Reserve) focus almost entirely on the conservation of terrestrial ecosystems. As a result, critical ecosystems including seagrass beds and coral reefs, and the biodiversity that they harbor, are not included in the national protected areas system at all, while other ecosystems such as mangroves, lagoons and coastal lakes are under-represented (contributing to the very high rates of mangrove loss in the country and the on-going degradation of coastal water bodies from sand mining and infrastructure development). Given the intense pressure on these vulnerable ecosystems, it is important to establish and operate marine protected areas, whether in coastal or offshore (e.g. submarine canyons) environments especially in a context of oil and gas development. If these barriers are tackled, the country could boost its agricultural sector in an integrated way with more targeted interventions in each sub sector.

Agricultural sector

106. Opportunities: Along the Gambian river, higher temperature might enable farmers to grow one more crop in a year than before. The Gambia's conventional long-term agricultural structure and patterns have changed due to climate warming, making it possible to develop multi-cropping systems in middle/high latitude regions. Compared with the cropping systems in the 1950–2000 and because of the move of isohyets towards the south, the cropping system has significantly changed and shift from the north to the South and East. Regardless of crop varieties and changing socio-economic conditions, grain yield per hectare could increase twice if the single cropping system changed to an integrated farming (more crop, livestock and fishery)
107. Challenges: Rice, maize and millet are the top three crops grown by the Gambian farmers. The introduction of new crops not well known and culturally absent in the diet may take time unless it is a cash crop (i.e Cashew). The particular crops that have been most affected by climate change and should be respectively Millet and Maize in Semi-arid areas and Rice along the River. South Est remain the most vulnerable region to climate change while the North Bank, Western and Lower Bank may face environmental challenges with the oil exploration and saline intrusion

Forestry sector

108. **Opportunities:** In the context of global and regional warming, Tree cash crops such as cashew could provide higher income to small holder farmers. *Mangroves* are also critical to habitat for many species of fish and wildlife and source of livelihood for people. Largescale implementation of the Ecosystem-based Adaptation (EbA) approach in participation with vulnerable rural communities in Community Forests (CFs) and Community Protected Areas (CPAs) are potential solutions under this new investment
109. **Challenges:** Higher temperatures have a detrimental effect on the mangrove forests, and some forest species. The occurrence cycles of pests and diseases have shortened; their distribution ranges have expanded

Livestock sector

110. **Opportunities:** With climate change and degradation of natural resources, the Gambia could modernize its livestock and animal husbandry through integrated farming systems with modern farms and species and breeds with short cycles of production, animal genetic resources management and pastoral sedentarisation.
111. **Challenges:** Although livestock contributes to the emission of CO₂, the current population of livestock in the Gambia and the rearing systems contribute less to global emissions. Higher temperatures have a detrimental effect on the production system (meat and milk) and increases the cycles of pests and diseases and animal epidemics.

Disasters

112. The Gambia is among one of the most disaster-prone countries in the region as agro-meteorological natural hazards (drought, locust invasions, floods) impact millions of smallholders. Such meteorological disaster loss translated into average annual grain losses and provoked direct economic losses and spurred migration of many young people.

Institutional analysis

113. Country responses to climate change and environmental degradation are compounded in the following policies and fully aligned on the National Development Plan (2018-2021). These are: The national climate change policy of the Gambia; National Adaptation Plan (NAP) process in the Gambia; National Policies on Climate Change, Agriculture and Natural Resources; The Nationally Determined Contribution; Forestry sub-sector policy 2010-2019; Anti-littering regulations; Hazardous chemicals regulations and Environmental impacts assessment regulations.
114. Other plans include the Gambia Environment Action Plan (GEAP), the National Environmental Management Act (NEMA), the Agriculture and Natural Resources (ANR) policy, the National Biodiversity Strategy and Action Plan (NBSAP), the Fisheries Policy, and the Forestry Policy. In turn, all of these policies fed into the medium-term national development strategy and investment plan known as the Programme for Accelerated Growth and Employment (PAGE) developed in 2012, which aims to improve livelihoods and food security, and reduce the poverty of populations that depend on the Gambia's natural resources (including rangeland, forests, fisheries, and wildlife) through sustainable management and use of these resources.
115. At the institutional level, the mandate of the National Environment Agency (NEA) is largely one of coordination, advice and consultation, including overseeing implementation of the GEAP, as well as overseeing environmental quality and monitoring standards and controlling the importation and use of pesticides and hazardous chemicals. The Ministry of Agriculture and the Ministry of Environment have traditionally had the most direct role in land-use and management, and are responsible for policies, plans and programs that ensure sustainable land management. The National Agricultural Research Institute (NARI) manages an agricultural research system that develops appropriate technologies (i.e. integrated pest management, biological pest control mechanisms, soil fertility amendment strategies etc.) for farmers. The Department of Parks and Wildlife Management (DPWM) is the government agency responsible for the protection and the management of the nation's wildlife resources, and has jurisdiction over wildlife both within and outside of wildlife protected areas. The Department of Forestry is mandated to manage 30% of the total land area under forest with a view to enhancing environmental protection through minimizing soil degradation and erosion, maintaining river bank stability, protecting wetlands and improving, conserving and preserving biodiversity. Other agencies with responsibilities relevant to the proposed project include the departments of Community Development, Livestock Services, Water Resources, Agricultural Services, Fisheries, and Physical Planning, as well as the National Disaster Management Agency (NDMA) and the Gambia Bureau of Statistics (GBOS). The National Environment Management Council (NEMC) has the overarching role of overseeing environmental governance.

Nationally Determined Contribution

116. In its NDC, the Gambia offers to conditionally reduce its greenhouse gas emissions, excluding the land use, land use change and forestry (LULUCF) sector, by 1.4 MtCO₂e in 2025 compared to business-as-usual (BAU). The Gambia is offering to reduce emissions by 0.08 MtCO₂e in 2025 (or 2.4%) below BAU unconditionally; A 44% emissions cut by 2025, compared to business as usual projections, and a 45% cut by 2030. The targets exclude land use and forestry. Two of 12 sectoral mitigation schemes, with associated emissions reduction targets, are unconditional. The rest are conditional on international financial support and technology transfer. Includes section on adaptation. The Gambia's NDC also includes abatement in the LULUCF and agriculture sectors: it plans to unconditionally abate 0.28 MtCO₂e by 2025 and 0.33 MtCO₂e by 2030 through afforestation as well as 0.69 MtCO₂e in 2025 and 0.67 MtCO₂e in 2030 by replacing flooded rice fields by dry upland ones, and by using efficient cook stoves reduce the overuse of forest resources, conditional on international support.
117. Agriculture is a key element in the Gambia's NDC. Adapting the Agriculture System to Climate Change in The Gambia will strengthen diversified and sustainable livelihood strategies for reducing the impacts of climate variability and change in agriculture and livestock sectors of The Gambia. Through the NDC, the Gambia intends to mainstream climate change adaptation priorities into national agriculture and livestock policies, plans and programmes; promote value addition of products to complement and support crop diversification; improve vulnerability and risk assessment tools and agro-climatic monitoring and early warning for food security; promote climate information services to the agriculture sector and dissemination to wider rural communities; diversify livelihoods and sources of income for vulnerable communities; enable sustainable crop intensification by introducing innovative crop improvement and management practices; improve implementation of poultry, small-ruminants and cattle production at the local level; and expand and intensify sustainable livelihoods and soil and water management interventions to improve vegetative cover and to sustain livelihoods of livestock dependent communities.

ENVIRONMENTAL, CLIMATE AND SOCIAL MANAGEMENT PLAN FOR ROOTS Introduction

118. The environmental, climate and social management plans (ESMPs) presented below are relevant to the entire ROOTS project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known. However, for these subprojects, a separate screening as outlined in chapter 8 is still required. The outcome of this screening and subsequent review may lead to the development of more detailed, location- and project-specific ESIA.

Responsibilities

119. The Ministry of Agriculture (MOA), will steer programme planning and implementation including the implementation of the ESMF. The Project Support Unit (PSU) will continue to manage the implementation of activities and provide technical support to and undertake coordination of programme activities, including the implementation of the ESMF at the national level. The Regional Coordination Units in the 5 regions will implement the programme in partnership with Regional Governments, Local Governments and private sector partners. In the designation of responsibility both the PSU and RCU Officers, Ministry of Agriculture, Environment, Women and Youth, Service providers, farmers' organization and individual farmers are involved in the implementation of the ESMF.

Outline of the Management Plans

120. Tables 6.1 and 6.2 present the environment and climate and social management plans. For each of the potential overall impacts described in chapter 5, the plans indicate a significance rating and (geographical) extent/prevalence of each impact, recommend mitigation measures, identify who is responsible for implementation of the mitigation measures, how implementation can be verified, and how frequently. The plans have been developed with input from a broad range of government ministries, department and agencies and other stakeholders consulted during the

ESMF field mission within the 5 regions. The recommended mitigation measures mostly apply to all the regions. It is important to re-emphasize that these management plans are relevant to the entire project, including the agri-enterprise and related (market) infrastructure sub-projects whose locations are not yet known. For these subprojects, a separate screening as outlined in chapter 8 is still required.

121. A copy of the environmental and management plans should be made available to all program staff, participating institutions and other key stakeholder representatives as well as used in community sensitization (i.e. awareness– raising and training) activities.

Table 6.1: Environmental (incl. Climate Change) and Social Management Plan

Parameter	Activity	Monitoring Indicator	Responsibility for monitoring	Monitoring means	Recommended frequency of monitoring
ENVIRONMENTAL MONITORING					
Infrastructure	Feasibility study for roads and causeways, dykes	Baseline on status of the environmental conditions in selected communities	PCU / contractor/ Ministry of infrastructure	ESIA reports Adherence to laid legal and policy requirements (Category B)	Once, at beginning of project
Environmental baseline	Conduct a baseline assessment to obtain baseline values of key environmental parameters in selected communities	See environmental indicators mentioned from next row	PCU/ National Environment Agency	Field survey	Baseline, once at beginning of project
Land and soil degradation	Monitor quality of soil and other biological conditions	Soil micro-organism count Soil organic matter count	PCU	Field measurement, incl. soil sample analysis	Annual (or after cropping cycle)
Surface and subsurface water quality	Monitor quality of surface and subsurface water at sample sites	Water quality	PCU	Field measurement and Laboratory test	Annual (or after cropping cycle)
Degradation of Forest and wetland	Monitor quality of forest and wetlands	Changes in forest and wetland area	PCU	Remote sensing and field assessment	Baseline, Mid-Term, End- Term
Erosion and gully	Monitor quality of land	Changes in area of bare surfaces	PCU	Remote sensing and field assessment	Baseline, Mid-Term, End- Term
Bush and pipeline fire	Monitor quality of vegetation	Changes in vegetal cover	PCU	Remote sensing and field	Annual

				assessment		
Loss of biodiversity	Monitor quality of biodiversity	Changes in abundance of biodiversity	PCU	Field survey	Annual	
Waste proliferation	Monitor quality of land, water and air	Changes in soil, air and water quality	PCU	Field measurement and laboratory test	Annual	
Use of agrochemicals	Monitor quality of plant, soil and water	Changes in quality of plant, soil and water	PCU	Laboratory test	Annual	
Flooding	Monitor quality of land	Extent of land inundation	PCU	Field survey and remote sensing	Quarterly	
GHG emissions	Monitor quality of air	Preponderance of GHG in the air	PCU/ National Environment Agency	Field measurement	Annually	
Socio-economic conditions	Conduct a combined sustainable livelihood analysis (SLA) / resilience assessment, providing baseline status of key socio-economic conditions in selected communities	Food security, assets, employment, income, production methods and volumes, access to markets and finance, social inclusion, disaster preparedness	PCU	Field survey Field measurement (update)		
Community conflict (internal)	Monitor the effectiveness of grievance redress mechanism	Occurrence of violent conflicts within selected communities	PCU/ Ministry of social affairs and local development	Community visit		

Youth violence (militancy and cultism)	Monitor youth violence situation	Occurrence of youth violence within selected communities	PCU/Ministry of Justice	Community visit	Quarterly	
Resource-based conflict (farmers – pastoralists)	Monitor conflict situation	Occurrence of violent conflicts between selected communities and external parties	PCU	Community visit	Quarterly	
Loss of (access to) agricultural land	Monitor land access and ownership	Change in land access and ownership for women and youth	PCU	Community visit	Annually	
Social exclusion	Monitor inclusion of women and youth in decision-making	Percentage of women and youth represented in community-level decision-making committees, associations and meetings	PCU/ Ministry of Justice	Community visit	Annually	
Elite capture	Monitor (political) interference, conflicts of interest, corruption	PCU	PCU/ ministry of agriculture	Community visit	Annually	
Unsafe and non-healthy working conditions	Monitor health impacts and child labour	Number of cases reported and suspected of health impact due to use of agro-chemicals, accidents due to use of production and processing machinery and related faulty wiring, and use of child labour	PCU/ Ministry of Health	Community visit	Annually	
Gender-based Violence including Sexual Exploitation, Abuse	raise awareness or interventions on SEA	Percentage of people sensitized	PCU/ Ministry of Justice/ Gender and women	Community visit	Annually	
Financing	Subscribe to the principles of	Number of MFIs partners that have	PCU	Community visit	Annually	

	sustainable environmental and social management in the financing of business plans	integrated sustainability into their financing				
Infrastructures	Feasibility studies	Reports	PCU/ Ministry of infrastructures	Community visit	First year	

Table 6.2

Sector	Adaptation mechanism	Description
Forestry	<i>Establishment and expansion of community natural forests, plantations, national parks and forest parks</i>	As an adaptation measure with mitigation co-benefits, the proposed action should enhance the resilience of forest ecosystems including provisioning functions in support of sustainable livelihood of direct beneficiaries. The activity will empower communities with the legal security, skills and knowledge necessary to rationally utilize their natural resources and conserve the remaining biodiversity.
	<i>Expansion and intensification of agro-forestry and re-forestation activities</i>	This adaptation measure which targets specific areas across the country will enhance the contributions of restored forest ecosystems to forest-based poverty alleviation, and, more broadly, to other national economic goals. The measure is expected to achieve the following:
	<i>Mainstreaming climate change in forest policies and plans</i>	In order to be fully responsive to the challenges of climate change, forestry sector policies and programs need to incorporate the realities of climate change.
Rangelands	<i>Development and implementation of effective policies on integrated natural resources management</i>	The negative impacts of climate change on rangelands can be attenuated through formulation and implementation of effective policies that seek to improve production and also take into consideration the needs of other natural resources-based sectors of the economy.
	<i>Restoration of rangeland</i>	This adaptation option includes the manipulation and monitoring of animal stocking rates, institutionalization of strict

Sector	Adaptation mechanism	Description
	<i>landscape</i>	grazing controls and management of the vegetation and soils.
	<i>New management strategies</i>	New strategies consist of a combination of measures including active selection of plant species, and stimulation of livestock economy to encourage owners to supply livestock and meat products on local/regional markets. .
Health	Vector control program	Health impacts from malaria will need investment in social mobilization and education, prevention techniques such as mosquito repellents, insecticide treated nets, (ITN) low-cost anti-malarial drugs. Use of ITNs in particular has been shown to reduce malarial morbidity and mortality in The Gambia.
	Continuous public health education and awareness creation program	Health education and awareness-raising are conducted at community level to help audiences in their decision-making on thematic issues. Health education and promotion programs should therefore incorporate elements of climate
	Integrated disease surveillance and response	Disease surveillance is a fundamental building block of infectious disease control program. In this regard, there is a clear need to create or improve on the design of health databases, and strengthening of the integrated disease surveillance program of MOHSW.
	Nutritional support to vulnerable groups	The National AIDS Secretariat with support from the global fund assists the ministry by providing nutritional support to vulnerable groups and their family members
	Public health infrastructure	Proper waste disposal should be promoted to prevent pathogenic and toxic contamination during floods. There are numerous tools and technologies that can be used to reduce the impacts of climate variability on the health of vulnerable human populations. In Kanifing Municipal Council (KMC), these include promotion of healthy housing environment and enforcement of building regulations. In areas where people depend on untreated water, reliable and safe drinking water as well as the use of simple measures such as proper storage of drinking water in narrow-mouthed vessels, filtering drinking water and use of use of chlorine tablets.
	Vaccination programme	Under its Expanded Programme of Immunization, The Gambia has one of the highest coverage of immunization in the West Africa sub region. Vaccination campaigns for all possible diseases need to be supported. Yellow fever vaccine is administered at the age of 9 months in all RCH clinics throughout the country. Meningitis vaccine is given only to Muslim pilgrims prior to the annual hajj and when an outbreak of the disease threatens.
Agriculture	Technical adaptation measures	Selection of drought-, pest- disease-, and salinity-resistant, high-yield crop varieties under local conditions. For this purpose the genetic potential of local crop species must be investigated and specimens stored in seed banks;
		Change in planting dates and replacement of long-duration upland and lowland rice varieties with short-duration

Sector	Adaptation mechanism	Description
		varieties
		Demonstration, promotion and diffusion of improved post harvest technologies. This will have the long-term effect of reducing extensive cultivation of marginal lands
	Regulatory measures	Discouraging cultivation on marginal areas
		Cooked food waste reduction
		Diversification of eating habit (change from rice to other cereals)
	Livestock	Increase fodder production from intensive feed gardens
		Promote crop/livestock integration;
		Improve feed conservation techniques and access to supplements
		Engage with other institutions, for example, the International Trypanotolerance Centre (ITC), to explore the potential of intensive livestock production systems in different areas in The Gambia
		Further explore opportunities for selective/cross-breeding of Ndama cows with higher milk-producing breeds
Infrastructures	Roads, dams, bridges, lands; irrigation systems, oil plans	Conduct all feasibility studies that address potential environmental and social issues and ensure adherence to SECAP, The Gambia EIA guidelines and adhere to international sustainability standards, a detailed ESMF with ESMP with attached budget was developed. For each of the potential environmental and climate impacts per site and along the entire value chain, the plans indicate a significance rating and (geographical) extent/prevalence of each impact, recommend mitigation measures, identify who is responsible for implementation of the mitigation measures, how implementation can be verified, and how frequently and with which budget
Climate Change	Climate risks preparedness reduction, and risk transfers	Introduce crop/livestock insurance policies; Sustainable renewable to energize the agricultural value chain ;Weather forecasts are broadcasted on private local radio stations; set up early warning systems on climate-related natural hazards; <u>e</u> enhanced research and awareness building and training on CC

Stakeholder Engagement, Community Sensitization and Expectation Management

122. Experience with previous IFAD and other economic and social investment projects indicate that stakeholder engagement and sensitization are of critical importance to project success. In the absence of clear communication with relevant stakeholders and appropriate sensitization of local communities, rumors, misinformation and speculation thrive, and accusations and tensions easily boil over into (violent) conflict within and between communities. Therefore, for many of the potential environmental and social impacts, the management plans recommend the development of a stakeholder engagement plan with a clear communication strategy and the organization of community sensitization activities on a regular basis.

A stakeholder engagement plan (SEP) should include at least the following components³⁹:

- a) Principles, objectives and scope of engagement
- b) Regulations and (institutional) requirements
- c) Summary of previous stakeholder engagement activities
- d) Stakeholder mapping and analysis
- e) Strategies of engagement
- f) Key messages and communication channels
- g) Grievance mechanism (see also section 9.6 below)
- h) Resources and responsibilities
- i) Monitoring and evaluation

123. Community sensitization (i.e. awareness-raising and training) activities need to be clear, timely and culturally appropriate; this means that key messages need to be communicated in a format and language that is easy to understand, preferably by someone who speaks the local language and is familiar with local customs and sensitivities, and during a time that is convenient and sufficient for all key community groups, particularly women and youth. To ensure appropriate community entry and reach target groups most effectively and efficiently, it is advisable to also involve those civil society organizations that are already active in and trusted by the selected communities.

Grievance Management

124. Whenever a project causes negative environmental or social impacts there will be grievances (complaints) from people who are affected. "Having a good overall community engagement process in place and providing access to information on a regular basis can substantially help to prevent grievances from arising in the first place, or from escalating to a level that can potentially undermine project performance⁴⁰. In order to reduce conflicts, a robust grievance / complaints mechanism that meets at least the following 'effectiveness' criteria should be instituted⁴¹:

- a) *Legitimate*: enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes;
- b) *Accessible*: being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access;
- c) *Predictable*: providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation;
- d) *Equitable*: seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms;

³⁹ Adapted from IFC (2007) *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets* (IFC: Washington, D.C.), pp.164-168

⁴⁰ IFC (2007) *Stakeholder Engagement*, p.69 and p.72

⁴¹ Office of the High Commissioner on Human Rights (OHCHR) (2011), *UN Guiding Principles on Business and Human Rights* (OHCHR: Geneva), pp.33-34

- e) *Transparent*: keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake;
- f) *Rights-compatible*: ensuring that outcomes and remedies accord with internationally recognized human rights;
- g) A source of *continuous learning*: drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms;
- h) Based on *engagement and dialogue*: consulting the stakeholder groups for whose use they are intended on their design and performance, and focusing on dialogue as the means to address and resolve grievances.

125. IFAD has established a Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an independent process. Although IFAD normally addresses potential risks primarily through its enhanced QE/QA process and by means of project implementation support, it remains committed to: (i) working proactively with the affected parties to resolve complaints; (ii) ensuring that the complaints procedure is responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions⁴².

126. The ROOTS Project will as much as possible utilize every available grievances redress mechanisms including: stakeholders (conflict resolution and management committees), associations (including farmers' associations/organizations) traditional/local authorities, community square engagement (consisting of representatives of men, women and social groups), community general assembly, the project PSU, etc.

⁴² IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

REVIEW OF ENVIRONMENTAL, CLIMATE, SOCIAL IMPACTS OF ROOTS SUB-PROJECTS

Potential Impacts and Recommended Mitigation for Agri-Enterprise Projects

127. Rice and Horticulture (Vegetables) are the major value chain crops being supported by ROOTS. Their production, processing and marketing are supported by the program with additional value chains including transportation, agrochemical applications, waste conversion and reuse.

Rice Cultivation and Processing

128. Rice is fast becoming the most important staple food in The Gambian homes with its imports substantially accounting for about USD50 Million annually⁴³. Rice paddies are becoming a common sight across the states of The Gambia and especially in the selected regions with floodplains and major inland valleys. lowland rice is extensively cultivated along the tidal swamps along the river banks, which flood during the high tide in most of the regions.
129. Although wetland rice is naturally suited to the flood plains and major river valleys, Flood is the major environmental and climate impact on rice. In recent past, several rice farms have been lost to floods across the regions. In some cases, droughts and dry spells have also been responsible for additional replanting costs as the plant wilted from low water and high temperature. Both floods and dry spells effects are often aggravated by lack of agro-climatic information on key parameters including onset and cessation of the rains and duration and time of dry spells. These impacts can be mitigated through strong collaboration with the The Gambian Meteorological Agency to prepare and disseminate place-specific forecasts for farmers.
130. Rice cultivation also requires clearing of land and removal of virtually all the trees and wetland plants to provide enough sunshine for the rice paddy. Rice production may also impact on biodiversity, especially birds and rodents' population that feed on rice grain. It also leads to forest and woodland degradation through selective cutting of trees for rice parboiling by local rice processors. Rice waste, which can constitute a nuisance to the environment, has the potential of being converted into briquette for rice parboiling and household cooking and heating purposes. Local farmers that cultivate Yam and other tuber crops have also found a use for rice waste in mulching. The harvested rice stems can also be used for feeding cattle. Rice cultivation requires agrochemicals and pesticides that can easily pollute surface and ground water bodies and environment. Rice is also vulnerable to pest infestations including stem borers which may lead to considerable loss of investment if not checked on time. The planted seed is also important to the expected yield per hectare. Bad seeds can lead to substantial loss of investments. Thus seed quality control is imperative to maintain the expected return on investment.
131. Emission of greenhouse gases (especially methane) from rice paddies remains a strong impact on climate. Although GHG emissions from rive fields can be reduced by periodically draining the rice paddies, farmers need to be trained in doing this. Higher temperatures can make rice sterile with low productivity. Resource conflicts between farmers and pastoralists driven by climate change and poor land governance regimes poses significant threats to investments and human security in some of the project area. Most of the regions are tackling this by building mutual understanding and confidence between the two social groups – farmers and pastoralists. This is done through expanded community security and traditional committee that include representatives from the Farmers and Fulani pastoralists. However, mitigation measures including avoid farming on grazing routes and fencing of farms with crops that are repellent to grazing livestock are critically important.
132. Some of the recommended mitigation measures for rice farming include:
- Encourage the farmers to take risk transfer as loss mitigation measures – encourage and assist farmers to sign on to climate risk (including flood and drought) insurance with competent Agricultural Insurance institutions.

⁴³ <http://thepoint.gm/africa/gambia/article/gambias-annual-rice-import-bill-stands-at-us50m>

- This will also mitigate possible losses from farm destruction occasioned by grazing livestock. A number of the projects implemented by some development partners in the regions are currently experimenting with this, but at limited scale.
- Improve collaboration with the Gambia MET agency to ensure production and dissemination (using existing extension vehicles and on smart android devices) of key agroclimatic information to farmers in local languages and at frequent intervals. The agency may be empowered through setting up at least one mini-meteorological station in each participating LGAs to improve the density of their climate stations and forecasts. Such climate station may be set-up to include flood gauge and monitoring systems in the LGAs along the river banks
- As much as is possible, discourage cultivation in areas that are very close to the major river systems to minimize overflow during normal flow seasons. Avoid deforestation and cultivation in r areas of high biodiversity/critical habitats/wetlands significance
- Improve collaboration with research institutes (such as IITA, Cereal Research Institutes, etc.) to introduce early maturing/short duration rice varieties to the farmers. This may make the peak flooding season coincides with post-harvest season rather than pre-harvest season as have witnessed in recent times
- Support for Seed lab – Equip and Strengthen seed labs to be able to carry out rigorous tests on seeds to ensure that only genuine foundation seeds are used by farmers to reduce loss or poor return on investment
- Ensure training and certification of ‘spraying gangs’ on what to apply, at what stage, and in what density, and human impacts (including need to wear protection gear) to safeguard the health of crops, soils, water and the people
- Collaborate with chemicals regulatory agencies to ensure that agrochemicals are genuine (eliminate expired and banned chemicals) and in training of spraying gangs and farmers
- Encourage the use of organic manure in farms as much as possible
- Make provision for conversion of rice wastes to briquette in all the rice processing units
- Train-of trainers (TOT) for extension workers to step down training of farmers on methods for draining rice paddies in mid-season to reduce GHG emission;
- Make provision for improved modern bird scaring-equipment on farms to reduce birds impact on rice farms and maintain avian population viability
- Synchronized production timing for efficiency in bird management
- Improve community and neighborhood security arrangements by supporting dialogue and understanding between farmers and pastoralists to reduce resource conflicts
- Avoid farming along recognized grazing routes and demarcated grazing reserves
- Promote efficient land management as adaptation - Collaborate with other organizations such as USAID, FAO and government committees on Land Reform to support policy dialogue with the Regional Governments and processes to improve on land governance by instituting land regimes that ensures efficient land management and administration with agricultural land cadastration and security of tenure and ensure land capitalism through a systematic land titling and registration process.

Potential Impacts and Recommended Mitigation for (Market) Infrastructure Projects

140. The following are some of the (market) infrastructure projects likely to be embarked upon by the project;

1. Construction and rehabilitation of causeways and spillways
2. Construction and rehabilitation of causeways and spillways
2. Construction and rehabilitation of culverts and roads
3. Construction and rehabilitation of processing facilities
4. Land development activities
5. Construction of small scale (earthen) dams and irrigation schemes

Some of the potential impacts of market infrastructure development include:

Land Access

133. Market infrastructure will require the availability of land resource for their provision. The arrangement made for land will go a long way in determining sustainability of market infrastructure. Land development, irrigation activities and road construction all require large expanse of land. In total about: 4 processing facilities are expected to be constructed, 4

market/commodity stores/village bulking centers constructed, 5120ha irrigated farmlands rehabilitated or constructed to support during the dry season food production. Some preconditions for market infrastructure include assurance that government or the community has guaranteed the lease of land to the beneficiaries during the program life, and the development of strategies for the maintenance and sustainability of the infrastructure by the concerned parties.

Dust, Vibration and Noise

134. The degree to which individuals perceive dust to be a nuisance depends on the frequency, intensity and duration of a dust-generating event. Farmers usually engage in a variety of activities that uses equipment or practices that create dust. Most land clearing equipment generates some dust. Dust may also be generated as fugitive dust when fine particulates are lifted from fields, roads, buildings and yards via air turbulence. The main mitigation measures recommended for mitigating dust including dust protection masks for machine operators and the spraying of water to reduce the level of dust during construction and/or transport activities.

135. Heavy equipment used for road construction create ground movement such that cracks can occur in adjacent buildings. These can also create some form of discomfort to inhabitants of the surroundings. An assessment of surrounding buildings would be carried out to ascertain the level of susceptibility to cracks because of ground movement. The buildings are to be strengthened and compensation paid for damages where it is unavoidable. Noise from the use of equipment is also a major concern. Operators should only use construction equipment that produces a moderate decibel level and consider the times when people will experience less discomfort (i.e. day-time only). Road construction and rehabilitation contractors will be expected to produce Environmental and social Management Plans for road construction and conduct environmental screening for the construction of farm tracks.

Deforestation

136. The removal of vegetation cover and trees during construction can lead to deforestation, and should therefore be avoided as much as possible. Where tree removal is unavoidable, this should be compensated by tree and vegetation replanting along the constructed roads. Trees removed from farm during land preparations should be compensated by planting trees in addition to hedges along the farm boundaries.

Surface and Ground Water Contamination

137. Unchecked and unmonitored surface and underground exploration, for example during dams' construction, can lead to ground water contamination. Appropriate impact studies/assessments should be conducted prior to the construction of dams and irrigation structures.

Flooding/ Erosion

138. Flooding and erosion can occur because of poor judgment and poor design and construction practices. This is very evident during the stakeholders' discussion for this ESMF. Adequate drainage should be provided for surface water run-off in all the roads to be constructed or rehabilitated. Geotextiles and Vegetation cover should be provided for slopes and indigenous grasses and shrubs with proven ability to stop erosion (e.g. Mahukachi) should be planted in areas undergoing erosion. Unnecessary dug- outs and/or excavation of soil from its natural terrain should be avoided to reduce flooding. Replacement of dug out soils should be carried out when necessary.

Environmental and Socio-Economic Management Framework (ESMF)

139. Table 7.1 provides a framework for managing the likely impacts of the various activities expected to be implemented during the key parts in the agricultural value chain, i.e. production, processing, marketing, transport (and supply). It is important to emphasize that these management plans are relevant to the entire ROOTS project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known.

Table 7.1 Environmental and Social Management Framework (ESMF) for ROOTS Agricultural Value Chain Stages

Part in value chain	Key issue affecting	Potential impact		Economic	Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional			
<i>Production</i>	<ul style="list-style-type: none"> <input type="checkbox"/> Land preparation – land clearing, cultivation and other issues <input type="checkbox"/> Use of earth-moving machines, e.g. tractors for clearing <input type="checkbox"/> Use of agro-chemicals <input type="checkbox"/> Use of pesticides 	<ul style="list-style-type: none"> <input type="checkbox"/> Forest and Woodland loss <input type="checkbox"/> Land & soil degradation <input type="checkbox"/> Water and soil pollution <input type="checkbox"/> Flooding <input type="checkbox"/> Erosion <input type="checkbox"/> Bush fire <input type="checkbox"/> Biodiversity loss <input type="checkbox"/> Waste management issues <input type="checkbox"/> GHG emission 	<ul style="list-style-type: none"> <input type="checkbox"/> Increased youth, women and men employment directly and indirectly <input type="checkbox"/> Increased sense of pride and responsibility by participating youth and women <input type="checkbox"/> Resource conflicts <input type="checkbox"/> Possible agitation from youth not presently included in the programme <input type="checkbox"/> Social exclusion - women and youth and PLWD • Use of child labour ▪ Possible loss of cultural 	<ul style="list-style-type: none"> • Increased household income and reduced poverty <input type="checkbox"/> Increased youth employment and social well-being <input type="checkbox"/> Improved nutrition and food security <input type="checkbox"/> Increased ability of women and youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development <input type="checkbox"/> Increased import substitution especially of rice <input type="checkbox"/> But increasing associated environmental and social costs 	<ul style="list-style-type: none"> <input type="checkbox"/> As much as possible, discourage the opening of virgin forests <input type="checkbox"/> Train farmers in sustainable land management practices and agrochemical management <input type="checkbox"/> Deliver training and agricultural inputs to farmers on-time to enable them to adjust and adapt their planting and harvesting methods and timing <input type="checkbox"/> Adopt and enforce health, safety and environment rules at production sites <input type="checkbox"/> Encourage full exploration of the value chain including soil testing and agrochemical services <input type="checkbox"/> Develop a clear and simple Stakeholder Engagement Plan (SEP), incl. grievance mechanism to manage 	<ul style="list-style-type: none"> <input type="checkbox"/> Number of farmers that received training on sustainable land preparation <input type="checkbox"/> Change in forests area <input type="checkbox"/> Results from periodic soil and water analysis <input type="checkbox"/> Health, safety and environment manual <input type="checkbox"/> Number of value chain enterprises around soil testing and agrochemicals management <input type="checkbox"/> Stakeholder Engagement Plan <input type="checkbox"/> Conflict resolution committee meetings <input type="checkbox"/> Lists of approved projects and their beneficiaries <input type="checkbox"/> A greement on land access for women and

Part in value chain	Key issue affecting	Potential impact		Economic	Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional			
Processing	<input type="checkbox"/> Use of processing machine Parboiling of Rice	<input type="checkbox"/> Waste generation <input type="checkbox"/> Air, water and land pollution <input type="checkbox"/> GHG emission from machines <ul style="list-style-type: none"> • Use of wood for heating/parboiling 	<input type="checkbox"/> Unsafe and non-healthy working conditions <input type="checkbox"/> Possible use of child Labourers <ul style="list-style-type: none"> • Migration influx to processing sites 	<input type="checkbox"/> Increased sales and household income <input type="checkbox"/> Increased youth employment and social well-being <input type="checkbox"/> Improved processing capacity, value additions and value chain development <input type="checkbox"/> Improved nutrition and food security <input type="checkbox"/> Increased ability of youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development <input type="checkbox"/> Increased import substitution of Rice <input type="checkbox"/> But increasing associated environmental and social costs	<input type="checkbox"/> Encourage the use of renewable and low-carbon energy sources during processing operations <input type="checkbox"/> Adopt health, safety and environment rules at processing sites <input type="checkbox"/> Train farmers in sustainable agro-processing practices to reduce environmental impacts <input type="checkbox"/> Step up knowledge management and information dissemination to showcase the achievement of the project	<input type="checkbox"/> Number of operators adopting renewable low carbon technologies <input type="checkbox"/> Number of enterprises established focusing on processing <input type="checkbox"/> Number of entrepreneurs adopting sustainable processing operations <input type="checkbox"/> Knowledge management /communication plans, stakeholder meeting reports, communication project flyers/leaflets

Part in value chain	Key issue affecting	Potential impact		Economic	Standard Mitigation Measures	Monitoring & indicators
		Environmental	Social & Institutional			
<i>Marketing</i>	<input type="checkbox"/> Construction of market infrastructure	<input type="checkbox"/> Dust, smoke, noise, ground movement / vibration <input type="checkbox"/> Deforestation <input type="checkbox"/> Water pollution <input type="checkbox"/> Flooding and erosion from poorly constructed culverts, roads, etc.	<input type="checkbox"/> Better access to market <input type="checkbox"/> Better access to production and processing sites by supervisory agencies <input type="checkbox"/> Improved access to rural communities <input type="checkbox"/> Conflict over land and demand for compensation where infrastructure is to be constructed	<input type="checkbox"/> Improved market penetration <input type="checkbox"/> Access to market information and market linkage and support services <input type="checkbox"/> Strengthened market value chain, with more profitable enterprises <input type="checkbox"/> Improved storage and reduced waste and postharvest losses	<input type="checkbox"/> Use construction equipment with moderate decibel during construction <input type="checkbox"/> Develop/adopt and enforce health, safety and environment rules at construction sites <input type="checkbox"/> Lawful and willing consent of community/or individuals on land site for market infrastructure Roads must be constructed with drainages Develop contingency plans for dykes/spillways to manage unexpected circumstances. <ul style="list-style-type: none"> • 	<input type="checkbox"/> Observation of construction equipment for dust, noise, smoke, vibration, etc. <input type="checkbox"/> Work inspection report on the environmental quality of market infrastructure <input type="checkbox"/> Health, safety and environment plans <input type="checkbox"/> Copy of consent of community /individuals on market infrastructure land site
<i>Transportation</i>	<input type="checkbox"/> Use of motorized and heavy transportation machines	<input type="checkbox"/> GHG emission from transportation	<input type="checkbox"/> Influx of rural Migrant workers to agri- enterprise sites and processing areas <input type="checkbox"/> Increased number of service providers, which boost the	<input type="checkbox"/> Increased ownership of motorized and other transport system <input type="checkbox"/> Increased number of service providers <input type="checkbox"/> Increased GDP <input type="checkbox"/> But increasing associated environmental and social costs	<input type="checkbox"/> Organize transport entrepreneurs into an association for easy management <input type="checkbox"/> Develop a code of conduct, and health, safety and environment regulation for transport operators	<input type="checkbox"/> Code of conduct for transport operators <input type="checkbox"/> Minutes of meetings of transport operators' association

Analysis of Alternatives

140. The traditional approach to Rice and Horticulture (Vegetables) in The Gambia is to reuse inputs and make use of available cultivar with little concern for quality control. Based on the analysis of the approach thus far, the outcome has been to focus on high-yielding varieties. Farmers will be encouraged to abandon the predominant agronomic practices to improved, efficient and climate-smart agronomic practices as enumerated on Table 7.2.

Commodity Value chain	Predominant Practice	Climate Smart Agriculture practices
Rice	<ul style="list-style-type: none"> • Recycling of paddy and use of untested seeds • Wrong application of soil amendments and agrochemicals • Use of low yield and long gestation varieties • Fertilizer spreading • Tillage operations remove all trees • Use of inorganic crop protection chemicals • No risk transfer measures to mitigate losses • No draining at mid-season increases methane emission • Farming activities not guided by agro-climatic information • Waste poorly managed and constitute nuisance • Wood for parboiling causing woodland and forest degradation • Limited to rainy season farming • Use wood for parboiling 	<ul style="list-style-type: none"> • Encourage paddy transplanting and tested seeds from certified seed producers/suppliers • Encourage soil sample analysis for appropriate agrochemical applications • Train and certify spraying gangs • Encourage the adoption of improved, pest resistant and early maturing varieties • Encourage deep application of urea at 6cm-10cm depth • Encourage minimum or zero tillage • Encourage the use of organic crop protection solutions like Neem oil • Encourage carbon sequestration activities • Fence farms with hedges and trees to reduce animal intrusions • Encourage farmers to sign-on to agric insurance for no greats and risk transfer • Strengthen collaboration to ensure Farming activities is guided by agro-climatic information for better timing • Train farmers to drain paddies at mid-season to reduce methane emission • Value chain to be created for waste conversion to briquette • Parboiling to be done with briquettes and other alternative efficient energy sources • Construct small dams and irrigation scheme for dry season farming • Train farmers on construction of water harvesting structure to retain water for dry season farming • Encourage farmers to use briquettes and clean cooking

		stoves
Vegetables	<ul style="list-style-type: none"> • Use of spent and low quality stems • Wrong application of soil amendments and agrochemicals • Use of low-yield varieties and long gestation • Fertilizer spreading • Tillage operations remove all trees • Use of inorganic crop protection chemicals • Waste poorly managed and constitute nuisance in environment • No risk transfer mechanism • Production activities not guided by agroclimatic information • Trees and woods on land totally removed • Poor application of technology for erosion and flooding control 	<ul style="list-style-type: none"> • Encourage outgrower schemes • Encourage soil sample analysis • Encourage the adoption of improved varieties • Encourage ring application at 6cm-10cm depth • Encourage minimum or zero tillage • the use of organic crop protection solutions like neem oil • Encourage carbon sequestration activities • Value chain to be created around waste conversion to animal feed • Waste water to be properly channeled from to reduce odour • Farmers to be encourage to sign on to agric insurance for no regrets and risk transfer mechanism • Strengthen collaboration to ensure Farming activities is guided by agro-climatic information for better timing • Encourage agroforestry to maintain tree on farms, and replant trees along farm borders • Adopt techniques including terracing, bunding and contouring to control erosion and flooding in inland areas

ENVIRONMENTAL AND SOCIAL SCREENING OF SUB-PROJECTS

Introduction: Screening and Review

141. The Environment and Social Risk Category of ROOTS is 'B' which means that 'some adverse impacts can be readily remedied by appropriate preventive actions and/or mitigation'⁴⁴. However, to remain a 'B' Category Project serious attention has to be paid to land development (because of its huge potential for deforestation and its secondary effects), and development of market infrastructure including construction of feeder roads and small dams and irrigation development. Loss of investments to floods is also very high across the regions. By far the most important social risk is the resource-induced clashes between farmers and pastoralists. All the project areas have the potential of being impacted by this risk.
142. During implementation, it is essential that all sub-project proposals be screened, first on eligibility on the basis of the 'letter of interest' / application form (see Annex 1), and secondly on the basis of environmental, climate and social impacts using the more detailed screening forms (see Annex 2). Project Screening for Environmental Impacts will ensure that sub-projects with high and irreversible impacts on the environment or people that cannot be readily mitigated are not eligible for support by ROOTS. It is very important to ensure that before land is developed for any cluster or farmer organization, they should take the responsibility of planting trees at the perimeter of the land area and nurturing them.
143. Sub-project proposals with medium (manageable) environmental and social impacts should include the following basic elements in the application and contain in the project-specific ESMP:
- A summary and description of the possible adverse effects that specific sub-project activities may occur;
 - A description of any planned measures to avoid or mitigate adverse impacts, and how and when they will be implemented;
 - A system for monitoring the environmental and social effects of the project;
 - A description of who will be responsible for implementing and monitoring the mitigation measures; and
 - A cost estimate of the mitigation measures, which should be included in the sub-project proposal.
144. The scope of any environmental and/or social review and related mitigation measures will be determined by the relevant (environmental/climate change) PSU staff in consultation with technical experts where needed, via the sub-project screening and approval process. Sub-project proposals with only minor or no adverse impacts do not need a separate review (or ESMP).

Screening for Eligibility

145. The ROOTS PDR provides a detailed description of the targeting and selection process for beneficiaries. Annex 1 provides the proposed format for the letter of interest / application form, which should be completed by each intended beneficiary and will be used as the primary tool for screening for eligibility.

Screening for Environmental and Social Impacts and Climate Impacts

146. Based on relevant SECAP guidelines, two separate environmental and social screening forms have been developed: for agri-enterprise (Annex 2) and related (market) infrastructure subprojects (Annex 3), and climate screening form for sub-projects (Annex 4).The intended

⁴⁴ Source: IFAD (2016) Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) (IFAD: Rome), p.18

beneficiaries are only required to complete the intention/application form in Annex 1 while the screening is done using the form in Annex 2, 3 and 4 by the PSU Environmental/Climate Change Officer (assisted by any Service Provider for that purpose).

147. Annex 5 provides an environmental and social guideline for contractors especially those handling the construction of market infrastructure such as the construction /rehabilitation of market-connected rural feeder roads, irrigation facilities, dam's construction, production platforms, etc. Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design. The guidelines include the site selection, prohibitions, construction management measures, safety during construction, community relations, chance finds procedures and environmental supervision during construction.

Impact Significance Rating

148. In order to determine the significance of impacts, the likelihood of an impact occurring is considered against the consequence or magnitude of the impact if it was to occur. Likelihood is defined as the frequency of an impact occurring.

Table 8.1 Definitions of Consequence

Consequence	Definition
No Impact / No change	No impacts on biophysical and social environments / livelihood / health / gender No public concerns No legal issues
Negligible	Low/minor impact on environment / livelihood / health / gender Minor social impacts No legal issues
Intermediate	Some level of impact on environment / livelihood / health / gender Social issues apparent May have legal implications
Severe	High level impacts on environment / livelihood / health / gender High public concerns or perceptions Legal non- compliance
Unknown	Extent of the impact cannot be determined at this point Apply precautionary principle

149. Projects that have low significance impacts may not require a new ESMP; in that case the standard ESMP and ESMF in this report will suffice. In the case of project with medium significance, the development of appropriate plans, in addition to the standard ESMP and ESMF may suffice to manage the severity of the impacts. In the case of projects with impacts of high significance, a separate ESIA is almost always required.

MONITORING OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS

Introduction

150. The overall objective of environmental and social monitoring is to ensure that recommended mitigation measures are incorporated, and that activities carried out during sensitization (i.e. training and awareness-raising) and infrastructure construction/maintenance are environmentally and socially acceptable, and therefore sustainable.

Key Performance Indicators

151. The key impact indicators for ROOTS are that:

- Estimated corresponding total number of household members - C.I. 1.b
- Corresponding number of households reached - C.I. 1.a
- Persons receiving services promoted or supported by the project (out of which 10% will be people with disabilities) - C.I. 1
- Number of people with greater resilience including people with Disabilities
- Households reporting an improved access to markets and a 30% income increase (percentage) - C.I. 1.2.2

152. The key monitoring indicators/variables from the ROOTS logframe include:

- Number of persons/households reporting adoption of new/improved inputs, technologies or practices - C.I. 1.1.2
- Number of hectares of farmland under water-related infrastructure constructed/rehabilitated
- Number of upgraded women-led vegetable gardens
- Number of integrated market-oriented vegetable garden financed through matching grants
- Number of persons trained in production practices and/or technologies - C.I. 1.1.4
- Number of rural producers accessing production inputs - C.I. 1.1.3
- Number of Jobs created (100% youth-led agricultural service businesses) - C.I. 2.2.1
- Number of financial service providers supported in delivering outreach strategies, financial products and services to rural areas - C.I. 1.1.6
- Number of farmers' organizations engaged in formal partnerships/ agreements or contracts with public or private entities - C.I. 2.2.3
- Number of effective agricultural value chain interaction platforms (AVIP)
- Number of rural farmers' organizations supported - C.I. 2.1.3
- Number of 4P businesses supported
- Number of market, r or storage facilities constructed or rehabilitated - C.I. 2.1.6
- Number of agribusiness policy-dialogue (meetings, roundtables) between public, private and producers' stakeholders conducted

153. Various project impacts and aspects relate to these overall performance targets. When the activities and indicators are established, baseline data needs to be collected to serve as a benchmark and against which changes in the identified indicators can be measured. The types of parameters that can be monitored may include mitigation measures or design features, or actual impacts. In some cases, such as drainage structures and soil conservation interventions, monitoring is fairly straightforward and can be done as part of routine or periodic maintenance. However, other parameters, particularly those related to social, ecological and climate change issues can only be effectively assessed over a period of 2 to 3 years.

154. The monitoring plan in Table 9.1 lists the parameters to be monitored, activity that will generate the parameters, monitoring indicator, and responsibility, monitoring means, frequency and the estimated cost.

Table 9.1 Environmental and Social Monitoring Plan

Parameter	Activity	Monitoring Indicator	Responsibility for monitoring	Monitoring means	Recommended frequency of monitoring	Estimated Monitoring Costs (USD)
ENVIRONMENTAL MONITORING						
Site specific ESIA's and Environmental Screening for road construction/rehabilitation, , processing facilities construction, irrigation development, commodity store construction, and drinking water construction/rehabilitation	Environmental Screening and impact assessment	Baseline on status of the environmental conditions	NPMU, SPU, Infrastructure Engineer, Irrigation Engineer, Environmental Officer, Service Providers	ESIA reports Adherence to laid legal and policy requirements (Category B)	Once (project specific)	834,583
Environmental Monitoring - include - baseline and end term survey, biodiversity surveys; monitoring of land water, and soil degradation and agrochemicals; climate, flooding and erosion prediction; pest infestation prediction	Environmental Screening and impact assessment	Baseline on status of the environment and climate conditions, risk and vulnerabilities	NPMU, SPU, Environmental Officer, Service Providers	Baseline reports, Biodiversity surveys report Climate risk and flooding and erosion risk reports Pest infestation prediction report	Baseline and end term Once for specialized reports	134, 722
Risk Transfer - Agric insurance	Climate and conflicts risk transfer	Farmers sign on to agriculture insurance	NPMU, SPU, Environmental Officer, Service Providers	How many agro-entrepreneur that sign on to agric insurance	Annual	250,000
Technical support and backstopping - includes support for GAMBIA MET for agroclimatic weather production and dissemination and setting up mini weather station; Seed labs; and waste valorization	Support for GAMBIA MET to install weather station and produce agroclimatic data for periodic climate monitoring Support seed lab development Support rice and vegetable waste valorization	Number of mini weather station installed Periodic production and dissemination of agroclimatic information Number of equipped seed lab Number of rice and vegetable waste valorization initiatives	NPMU, SPU, Infrastructure Engineer, Environmental Officer, Service Providers	Field observation	Once	583,333
Training-includes training of spraying gangs, draining of rice paddies;	Training of spraying gangs	Number of those trained	NPMU, SPU, Environmental Officer, Service	Field observation	Once	222,362

and construction of water harvesting structure for dry season irrigation	integrated pes and agrochemical management Training of farmers on water harvesting for dry season farming		Providers			
SOCIAL MONITORING						
Support for conflict resolution - include support for stakeholders dialogue on conflict management and land governance	Conflict resolution stakeholders support and land governance dialogue	Activities of conflict resolution committee Organize land governance dialogue	NPMU, SPU, Environmental Officer,	Conflict resolution and land governance dialogue reports	Once	250,000
Other Social monitoring	Include gender and People living with disabilities (PLWD) mainstreaming	Activities of Targeting committee	NPMU, SPU, Gender Officer	Social Surveys, Beneficiaries assessment	Annual	50,000
Health and Safety	Health Insurance and outreach	Number of farmers sign unto health insurance	NPMU, SPU,	SPC Reports	Annual	75,000
						2,400,000

Summary of Environmental and Social Monitoring Costs

Table 9.2 shows the summary of the monitoring costs among the monitoring activities shown on Table 9.1 for year 1 and the years 2-3 of the ROOTS project life cycle.

Table 9.2: Summary of Environmental Monitoring costs

Monitoring Parameter	Average cost per region (in USD)	Total for 5 regions (in USD)	Year 1 (in USD)	Year 2 -6 (in USD)
Site specific ESIA's and Environmental Screenings*	92,731	834,583	386,736	447,847
Environmental Monitoring**	14,969	134,722	72,222	62,500
Risk Transfer - Agric insurance	27,778	250,000	83,333	166,667
Technical support***	64,815	583,333	277,778	305,556
Training ****	24,706	222,362	200,000	22,362
Support for Conflict resolution*****	27,778	250,000	83,333	166,667
Other social monitoring costs	5,556	50,000	16,667	33,333
Health and Safety	8,333	75,000	25,000	50,000
Total monitoring costs		2,400,000	1,145,069	1,254,931

*include roads construction/rehabilitation, processing facilities construction, irrigation development, commodity store construction, and drinking water construction/rehabilitation

** Baseline and end term survey, biodiversity surveys; monitoring of land, water, and soil degradation and agrochemicals; climate, flooding and erosion prediction; pest infestation prediction

*** includes support for GAMBIA MET for agroclimatic weather production and dissemination and setting up mini weather station; Seed labs; and waste valorization

****includes training of spraying gangs, draining of rice paddies; and construction of water harvesting structure for dry season irrigation

*****include support for stakeholders' dialogue on conflict management and land governance

155. As shown on Table 9.2 a total of **USD 2,400,000** has been estimated for the environmental and social monitoring for ROOTS. The detailed overview of the monitoring costs is shown on Annex 6. A total of **USD1, 145,069** is expected to be expended at the base year while the rest is spread across the 2nd and 6th year (end of the project life cycle).

CAPACITY BUILDING AND TRAINING FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

Strengthening Capacity and Improving Resilience

156. A successful mainstreaming of climate change and the ESMF into implementation of the project requires the strengthening of institutional capacities, in particular those of the Agricultural Development Program by setting up mini weather station, Farmers Organization and Women Organizations. Moreover, there is a strong need for context-specific, in-situ training sessions for farmers, and others in the value chain, for example on climate-smart agriculture and climate change adaptation, to improve their resilience to deal more effectively with climate-related weather events.

Training Topics

157. Proposed training topics include, at the very least:
- a. Community and agro-entrepreneur sensitization – including insurance and risk transfer mechanisms
 - b. Requirements of IFAD's SECAP and ERNM, Gender, as well as Climate, Land and Disclosure policies;
 - c. ESMF processes, procedures and institutional arrangements to develop and implement required management plans;
 - d. Agroclimatic data and early warning (including pest infestation) capacity building
 - e. Screening and rating as prescribed in the ESMF;
 - f. Environmental, social and climate impact assessment, and requirements;
 - g. Preparation, implementation and monitoring of ESMPs and ESAs;
 - h. Reporting and monitoring implementation of ESMPs;
 - i. Farmers Field School training on climate smart agriculture, environmental and social best practices, including: Sustainable land preparations, agrochemical application and pest and disease management, sustainable agronomic practices, soil fertility management, low-impact farming methods,
 - j. Conflict resolution and grievance management mechanisms;
 - k. Environmental (EMS 14001) and social audit, and report writing

Target Audience and Approach

158. The target groups for training should include, at least:
- a. Project Steering and Technical Committees; PSU
 - b. RCU Staff
 - c. MoA staff, and EAs
 - d. Service providers

- e. Beneficiaries (i.e. incubators and apprentices)
- f. Farmers Organizations

159. The training topics will be delivered based on the needs of each training target group. As much as possible, Training the Trainers (TOT) will be encouraged, where applicable, to manage resources and effectively reach the target audiences.

Table 10.1: Training Activity and Estimated Cost

SN	Activity	Year			Budget (USD) @365 = 1USD	Remarks
		1	2	3		
1	General Stakeholders and community sensitization using the media and workshop	X			25,000	Local media+1 day workshop in each of the 9 States
2	ToT Capacity building for uptake of agroclimatic information and early warning	X	X	X	125,000	2-day -Train Climate/Environment Officers and selected implementation staff, to downscale to farmers
3	Stakeholders dialogue on risk sharing and transfer mechanism	X	X	X	25,000	1day workshop
	Capacity building in IFADs requirements and ESMF and ESIA processes, procedures, implementation and monitoring and	X	X		125,000	5day training for
6	Farmers Field School training on climate smart agriculture, environmental and social best practices, including: Sustainable land preparations, agrochemical application and pest and disease management, sustainable agronomic practices, soil fertility management, low-impact farming methods	X	X	X	100,000	2day per LGA
7	Stakeholders capacity building on Conflict resolution and grievance management	X	X	X	125,000	2day training in state
8	Environmental (EMS 14001) and social audit and report writing	X		X	13,889	3 day workshop for environmental officers
					538,889	

The total training cost is estimated at **USD 538,889** of the project cost. In total, both the Environmental and Social Monitoring costs and Training cost accounts for **USD 2,916, 528**.

Annex 1 – Eligibility Screening Form

ROOTS PROJECT

**Letter of Interest (Eligibility Screening Form)
Please complete all the required spaces in this form**

1. Name: Surname -----Other Names:-----
Maiden name (for married women):-----
2. Sex: (a) Male { } (b) Female { }
3. Date of birth: -----
4. Highest Education Level: (a) No formal education { } (b) Primary School { } (c) Secondary School { } (d) Vocational school (e) Tertiary Education { }
5. Which community do you belong to: -----
6. How long have you lived in this community: -----
7. How do you belong to this community: (a) by birth { } (b) by marriage { } (c) other (specify):-----

8. Local Government Area (LGA): ----- State: -----
9. What enterprise are you interested in (see list of selected enterprises for the LGA): -----

10. Do you have any experience in this enterprise: (a) Yes { } (b) No { }. If yes, how many years: -----

11. Do you belong to any youth or women organization: (a) Yes { } (b) No { }. If yes, what is the name: -----

12. Do you belong to any cooperative society: (a) Yes { } (b) No { }. If yes, what is the name: -----

13. Do you have access to any land for the enterprise: (a) Yes { } (b) No { }.
14. If yes to question 13, where is the land located-----; and what is the area size of the land? -----
15. What kind of title do you have to the land: (a) Government paper { } (b) Inheritance from parent { } (c) husband or wife's consent { } (d) family allocation { } (e) community's allocation { } (f) Others (specify):-----

Endorsements:

Applicant: I certify that the information provided here is correct

Name: -----

Signature: -----

Date: -----

Community/traditional leader:

Name: -----

Sign: -----

Date: -----

Verifications:

Comments by the Local Government Liaison Office:-----

Name of Officer: -----

Designation: -----

Sign and date: -----

Comments by the RCU Office:-----

Name of Officer: -----

Designation: -----

Sign and date: -----

Screening:

Comments by service providers:-----

-Categorical comments (a) Applicant Eligible { } (b) Applicant Ineligible { }

Annex 2 - Environmental and Social Screening Forms for ROOTS Subprojects

A: Screening Form for Agri-Enterprise Projects

General Information

Project Name:	
Name of incubator / applicant:	
Name of Cooperative: Contact person's details:	
Name of Apex Group: Contact person's details:	
Project Location:	
Project sector (e.g. rice farming, vegetable processing, etc.)	
Estimated Cost:	
Proposed Date of Commencement:	
Expected Project duration:	
Site (estimated area in ha):	
Any equity/contribution brought into the project:	
Any plan for new construction:	

A1. Screening for Environmental and Social Issues

Question	Yes	No	Additional explanation of 'Yes' response
1. Will the sub-project develop any wetlands?			
2. Would the sub-project result in economic displacement ⁴⁵ (loss of assets or access to resources) or physical resettlement			
3. Would the sub-project result in conversion and/or loss of physical cultural resources?			
4. Will the sub-project have significant social adverse impacts (affecting access to and/use rights to land, access to potable water and water for other uses) on local communities or other project-affected parties?			
5. Will the project trigger unsustainable natural resource management practices (fisheries, forestry, livestock, and significant increase in use of agrochemicals) that exceed the carrying capacity?			
6. Does the sub-project include conversion of significant areas (above 50 ha) of natural forests/other wild lands?			
7. Would the project potentially cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. habitat loss, erosion/ other form of land degradation, fragmentation,			

⁴⁵ Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (see SECAP Procedure Guidance Statement 13)

Question	Yes	No	Additional explanation of 'Yes' response
hydrological changes)?			
8. Does the proposed project target area include ecologically sensitive areas ⁴⁶ ; areas of global significance for biodiversity conservation and/or biodiversity-rich area; habitats depended on by endangered species?			
9. Does the project involve fisheries development in situations where little information exists on sustainable yield?			
10. Could the project pose a risk of introducing invasive alien species?			
11. Does the project involve the transfer, handling or use of genetically modified organisms/living modified organisms that may have an adverse effect on threatened biodiversity?			
12. Is the project site close to any oil and gas installation such as flow stations, oil terminal, oil or gas pipeline right of way?			
13. Has oil spill/ or pipeline fire ever been recorded around project site?			
14. Does the project involve land use changes (agricultural intensification and/or expansion of the cropping area) and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods?			
15. Will the project result in increased use of agrochemicals which may affect the natural environment/human health?			
16. Does the project include small-scale irrigation and drainage projects, and water impoundment including small dams (except in wetlands)?			
17. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas?			
18. Do the project activities include rangeland and livestock development?			
19. Does the project involve artisanal fisheries where there is information on sustainable yield?			
20. Do the project activities include aquaculture and/or mariculture?			
21. Do the project activities include watershed management or rehabilitation?			
22. Does the project include large-scale soil and water conservation measures?			
23. Does the project include small and micro enterprise development sub-projects?			
24. Does the project involve credit operations through financial service providers, including credit for pesticide/other agrochemicals, livestock purchasing, irrigation, etc.?			
25. Do the project activities include natural resources-based value chain development?			
26. Would any of the project activities have minor adverse impacts on physical cultural resources?			
27. Would the project have low probability to have physical resettlement or economic displacement?			
28. Does the project include development of agro-processing facilities?			

⁴⁶ 'Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

Question	Yes	No	Additional explanation of 'Yes' response
29. Will the project require a migrant workforce during construction?			
30. Will the project require seasonal workers to plant and/or harvest produce?			
31. Will the construction or operation of the project cause an increase in traffic on rural roads?			

Guidance for sub-project categorization

"Yes" response to any of questions 1-13	Sub-project Environmental and social category is A	ESIA is required for subproject
"Yes" response to questions 14-31	Sub-project Environmental and social category is B	Sub-project to adopt the ESMP in the general ESMF
"No" response to almost all questions	Subproject Environmental and social category is C	No further analysis is required

B: Screening Form for (Market) Infrastructure Sub-Projects

Name of market infrastructure:	
Infrastructure type:	
Location:	
Proposed Date of Commencement:	
Expected Project duration:	
Estimated cost:	
Estimate number of communities to be served:	
Estimated number of entrepreneur to be served:	

B1: Screening for (Market) Infrastructure Sub-projects

Question	Yes	No
1. Will the project activities include construction/rehabilitation of rural roads or other rural infrastructure in protected/sensitive areas ⁴⁷ ?		X All road length < 10 km
2. Does the project include construction of roads or other infrastructure that entail the total area being cleared of 50 ha or above?		
3. Does the project include construction of dam (s)/reservoir (between 5-15 m high with a reservoir exceeding 2 million m ³)?		
4. Does the project involve large-scale irrigation schemes rehabilitation/ development (above 100 ha)?		
5. Does the project involve significant extraction of ground water (significantly above recharge capacity)?		

⁴⁷ 'Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

6. Does the project include water-based (ground or surface) development where it is believed that significant depletion due to climate change or overutilization has occurred?		
7. Does the project involve significant extraction, diversion or containment of surface water?		
8. Does the project include drainage or correction of natural water bodies (e.g. river draining)?		
9. Will the project include construction/rehabilitation of rural roads that pass through oil infrastructure locations such as flow stations, tank farms or oil and gas pipelines?		
10. Would any of the project activities have minor adverse impacts on physical cultural resources?		
11. Does the project include development of agro-processing facilities?		
12. Will the project require a migrant workforce during construction?		
13. Will the construction or operation of the project cause an increase in traffic on rural roads?		
14. Has the government or community guaranteed the lease of the land for the (market) infrastructure?		
15. Is there any plan in place for sustainability of the infrastructure during the project life time?		
16. Does the project include specific measures to protect against dust (such as dust masks and water spraying)?		
17. Has arrangement been made to pay adequate compensation for private property that may be affected by the construction of the project?		
18. Will construction equipment with moderate decibels be used and the timing of use be so that people will experience less discomfort?		
19. Will tree and vegetation replanting be carried out to stabilize slopes and re-green road sides?		

Guidance for categorization

"Yes" response to any of questions 1-9	Environmental and social category is A	ESIA is required
"Yes" response to questions 10-13	Environmental and social category is B	Sub-project to adopt the general ESMP in the ESMF
"No" response to almost all questions 1-13 and 'Yes' to questions 14-19	Environmental and social category is C	No further analysis is required

C: Climate Screening Form for Sub-Projects

To be used with the environmental and social screening forms.

Screening for Climate Issues

Question	Yes	No	Additional Explanation of 'Yes' response*
1. Is the project area subject to extreme climatic events such as flooding, drought, tropical storms, or heat waves?			
2. Do climate scenarios for the project area foresee changes in temperature, rainfall or extreme weather that will adversely affect the project impact, sustainability or cost over its lifetime?			
3. Will the project make investments in low-lying coastal areas/ zones exposed to river flooding and coastal storm surge?			
4. Will the project promote agricultural activity in marginal and/or highly degraded areas that have increased sensitivity to climatic events (such as on hillsides, deforested slopes or floodplains)?			
5. Is the project located in areas where rural			

development projects have experienced significant weather- related losses and damages in the past?			
6. Will the project develop/ install infrastructure in areas with a track record of extreme weather events?			
7. Is the project target group entirely dependent on natural resources (such as seasonal crops, rain-fed agricultural plots, and migratory fish stocks) that have been affected by in the last decade by climate trends or specific climatic events?			
8. Will climate variability likely affect agricultural productivity (crops/ livestock/fisheries) or the associated incidence of pests and diseases for the project target groups?			
9. Would weather-related risks or climatic extremes likely adversely impact upon key stages of identified value chains in the project (from production to markets)?			
10. Is the project investing in climate-sensitive livelihoods that are diversified?			
11. Is the project investing in infrastructure that is exposed to infrequent extreme weather events?			
12. Is the project investing in institutional development and capacity building for rural institutions (such as farmer groups, cooperatives) in climatically heterogeneous areas?			
13. Does the project have the potential to become more resilient through the adoption green technologies at a reasonable cost?			
14. Does the project intervention have opportunities to strengthen indigenous climate risk management capabilities?			
15. Does the project have opportunities to integrate climate resilience aspects through policy dialogue to improve agricultural sector strategies/policies?			
16. Does the project have potential to integrate climate resilience measures without extensive additional costs (e.g. improved crop variety, capacity building; or including climate risk issues in policy processes)			
17. Based on the information available would the project benefit from a more thorough climate risk and vulnerability analysis to identify additional complementary investment actions to manage climate risks?			

Guidance for categorization

"Yes" response to any of questions 1-9	Sub-project Climate risk is High	Climate risk Analysis is required for sub-project
"No" response to almost all questions	Sub-project climate risk is moderate	Sub-project to adopt the ESMP in the general ESMF

Annex 3 - Environmental and Social Guidelines for contractors⁴⁸ (for reference in contractor agreements/contracts)

Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design including the following:

Site Selection

Sites should be chosen based on community needs for additional projects, with specific lots chosen based on geographic and topographic characteristics. The site selection process involves site visits and studies to analyze: (i) the site's, sub-urban, or rural characteristics; (ii) national, regional, or municipal regulations affecting the proposed sites; (iii) accessibility and distance from inhabited areas; (iv) land ownership, including verification of absence of squatters and/or other potential legal problems with land acquisition; (v) determination of site vulnerability to natural hazards, (i.e. intensity and frequency of floods, landslides, etc.); (vi) suitability of soils and sub-soils for construction; (vii) site contamination; (viii) flora and fauna characteristics; (ix) presence or absence of natural habitats and/or ecologically important habitats on site or in vicinity (e.g. forests, wetlands, rare or endangered species); and (ix) historic and community characteristics.

The rules (including specific prohibitions and construction management measures) should be incorporated into all relevant bidding documents, contracts, and work orders.

Prohibitions

The following activities are prohibited on or near the project site:

- Cutting of trees for any reason outside the approved construction area;
- Hunting, fishing, wildlife capture, or plant collection;
- Use of unapproved toxic materials, including lead-based paints, asbestos, etc.
- Disturbance to anything with architectural or historical value;
- Building of fires;
- Use of firearms (except by authorized security guards);
- Use of alcohol by workers.
- Use of all forms of forced labor and child labor
- Unfair treatment and discrimination of workers

Construction Management Measures

Solid, sanitation, and hazardous wastes must be properly controlled, through the implementation of the following measures:

Waste Management:

- Minimize the production of waste that must be treated or eliminated;
- Identify and classify the type of waste generated. If hazardous wastes (including health care wastes) are generated, proper procedures must be taken regarding their storage, collection, transportation and disposal;
- Identify and demarcate disposal areas clearly indicating the specific materials that can be deposited in each;
- Control placement of all construction waste (including earth cuts) to approved disposal sites (>300 m from rivers, streams, lakes, or wetlands). All garbage, metals, used oils, and excess material generated during construction should only be disposed in authorized areas, incorporating recycling systems and the separation of materials.

Maintenance:

- Identify and demarcate equipment maintenance areas (>15m from rivers, streams, lakes or wetlands);

⁴⁸ Adapted from Ministry of Agriculture, Irrigation and Water Development, Republic of Malawi (2015) *Environmental and Social Management Framework for Programme for Rural Irrigation Development in Malawi*, pp.76-80.

- Ensure that all equipment maintenance activities, including oil changes, are conducted within demarcated maintenance areas; never dispose spent oils on the ground, in water courses, drainage canals or in sewer systems;
- Identify, demarcate and enforce the use of within-site access routes to limit impact on site vegetation;
- Install and maintain an adequate drainage system to prevent erosion on the site during and after construction.

Erosion Control

- Erect erosion control barriers around perimeter of cuts, disposal pits, and roadways;
- Spray water on dirt roads, cuts, fill material and stockpiled soil to reduce wind-induced erosion, as needed;
- Maintain vehicle speeds at or below 10mph within the work area, 15mph or below within 200m of the site, and abide by the relevant speed limits at all times to / from the work area.

Stockpiles and Borrow Pits

- Identify and demarcate locations for stockpiles and borrow pits, ensuring that they are 15 meters away from critical areas such as steep slopes, erosion-prone soils, and areas that drain directly into sensitive water bodies;
- Limit extraction of material to approved and demarcated borrow pits.

Site Cleanup

- Establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris.

Safety during Construction

The Contractor's responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all national and local safety requirements and any other measures necessary to avoid accidents, including the following:

- Carefully and clearly mark pedestrian-safe access routes;
- If school children are in the vicinity, include traffic safety personnel to direct traffic;
- Maintain supply of supplies for traffic signs (including paint, easel, sign material, etc.), road marking, and guard rails to maintain pedestrian safety during construction;
- Conduct safety training for construction workers prior to beginning work;
- Provide personal protective equipment (PPE) and clothing (such as goggles, gloves, respirators, dust masks, hard hats, steel-toed and –shanked boots, etc.) for construction workers and enforce their use;
- Post Material Safety Data Sheets for each chemical present on the worksite;
- Require that all workers read, or have read, all Material Safety Data Sheets. Clearly explain the risks to them and their partners, especially when pregnant or planning to start a family. Encourage workers to share the information with their physicians, when relevant;
- Ensure that the removal of asbestos-containing materials or other toxic substances be performed and disposed of by specially trained workers;
- During heavy rains or emergencies of any kind, apply construction safeguards guidelines;
- Brace electrical and mechanical equipment to withstand unexpected events during construction.

Nuisance and Dust Control

To control nuisance and dust the Contractor should:

- Maintain all construction-related traffic at or below 15 mph on streets within 200 m of the site;
- Maintain all on-site vehicle speeds at or below 10 mph;
- To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90db;
- In sensitive areas (including residential neighborhoods, health centers, schools, etc.) more strict measures may need to be implemented to prevent undesirable noise levels;
- Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elderly);
- Phase removal of vegetation to prevent large areas from becoming exposed to wind;
- Place dust screens around construction areas, paying particular attention to areas close to housing, commercial areas, and recreational areas;
- Spray water as needed on dirt roads, cut areas and soil stockpiles or fill material;

- Apply proper measures to minimize disruptions from vibration or noise coming from construction activities.

Community Relations

To maintain cordial community relations, the Contractor should:

- Following the country and ESMP requirements, inform the population about construction and work schedules, interruption of services, traffic detour routes, as appropriate;
- Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures;
- At least five days in advance of any service interruption (including water, electricity) the community must be advised through clearly visible posters at the project site and at central community locations;
- Where possible, particularly for tasks that can also be performed through low-skilled manual labor (such as digging of shallow trenches, etc.), make use of labor from the local community.

Chance Find Procedures for Culturally Significant Artifacts

In case culturally valuable materials (incl. shrines, graves, etc.) are uncovered during excavation:

- Stop work immediately following the discovery of any materials with possible archeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities;
- Protect artifacts as well as possible using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artifacts;
- Prevent and penalize any unauthorized access to the artifacts;
- Restart construction works only upon the authorization of the relevant authorities.

Environmental Supervision during Construction

The bidding documents should indicate how compliance with environmental rules and design specifications would be supervised, along with the penalties for non-compliance by contractors or workers. Construction supervision requires oversight of compliance with the manual and environmental specifications by the contractor or his designated environmental supervisor. Contractors are also required to comply with national and state regulations governing labour, the environment, public health and safety.

Annex 4 – Checklist for Construction Works

Based on the National Environmental (Construction Sector) Regulations (2011), at every construction facility the following checklist should be implemented:⁴⁹

- (1) Every facility shall implement programmes on best practices as set out in Schedule I of the Regulations while taking recognition of workers organizations
- (2) Every facility shall provide base for ancillary equipment and bund wall for containment of waste oil in the event of any unanticipated discharge or spillage.
- (3) Every operator of construction facility/site shall ensure:
 - (a) it has a functional, adequate and appropriate drainage system for the project;
 - (b) the separation or diversion of clean water runoff to prevent it from mixing with water containing high solid particle content;
 - (c) it minimizes the volume of water to be treated prior to release (same as storm water control system);
 - (d) the use of color coding for the drainage system such as blue for surface water drains and red for foul water drains;
 - (e) safe movement of materials and fuel to and from site;
 - (f) tanks are clearly labelled with their contents and storage capacity;
 - (g) workers are trained to carry out the outlined procedures in the Emergency Response Plan as specified in Schedule II to the Regulations;
 - (h) absorbent materials and other containment equipment (e.g. spill kits) suitable for the construction type, are available in adequate quantity on site; and
 - (i) all tanks are properly covered.
- (4) The operator shall ensure:
 - (a) high standard of housekeeping;
 - (b) that dust/particulate matter arising from loaded trucks entering or leaving the site is kept to a minimum level by the use of tarpaulin materials as cover and that water sprays or other dust suppression or collection methods are used at every dusty place where work is carried out;
 - (c) appropriate use of Personnel Protective Equipment (PPE) by all persons at construction site as in Schedule VI to the Regulations;
- (5) Every facility shall have an Emergency Response Plan in accordance with the guide template specified in Schedule II to these Regulations.

⁴⁹ *National Environmental (Construction Sector) Regulations (2011). S.I. No.19.*

Annex 5 - Social Inclusion Strategy

“In every country, certain groups (...) Confront barriers that prevent them from fully participating in their nation’s political, economic, and social life. These groups are branded by stereotypes, stigmas, and superstitions. They often live with insecurity. And such disadvantages not only preclude them from capitalizing on opportunities to lead a better life, they also rob them of dignity.”⁵⁰

Social inclusion means different things to different people. In its flagship publication on the topic, the World Bank defines social inclusion as “the process of improving the ability, opportunity, and dignity of people, disadvantaged on the basis of their identity, to take part in society.”⁵¹ A strategy for social inclusion should therefore both address the above-mentioned ‘barriers’ as well as strengthen the capacities that disadvantaged groups in society require to make the most of development opportunities and realize their full potential.

The ROOTS will directly contribute to social inclusion by actively focusing on unemployed youth and women, which together with people with disabilities and widows remain among the most disadvantaged groups in The Gambian society.⁵² Benue and Niger have at least 9 local governments located along the river Niger and Benue and this increases their vulnerability to effects from flooding. To ensure those areas are not entirely excluded from project activities and left marginalized, ROOTS is advised to develop tailor-made solutions in those locations where there is at least a commitment to safe access for the project so that youth and women in such areas will still be able to participate in different value chain components.

Using the World Bank’s advice to focus on three critical ‘inclusion domains’ of markets, services and spaces, ROOTS can help promote social inclusion in the project area through the following instruments and policies:

1. Markets (Land, Regulatory Framework)

- Negotiate with traditional authorities in local communities for long-term land access by women and youth for agri-enterprise activities;
- Negotiate with state governments to allocate larger plots of unused (but suitable) farmland and provide security of tenure for women and youth associations for agri-enterprise activities;
- Support legislative reform establishing gender parity in land ownership and inheritance;
- Closely monitor project progress, hold regular meetings with leaders/representatives of women and youth organizations to discuss project challenges, and provide additional (technical) support where needed.

2. Services (Training, Financial, Labour, ICT)

- Provide refresher, advanced and/or top-up skills training on-site for women and youth (on any relevant topic that hinders progress in their agri-enterprises) in combination with intensive mentoring support;
- Support opportunities for information sharing, whereby women and youth who are currently not part of the project can visit the agri-enterprise sites and whereby entrepreneurs can share their experiences (including reasons for failure and success);
- Negotiate with agricultural banks to provide preferential credit arrangements for high-potential women or youth agri-entrepreneurs;
- Encourage contractors / service providers to give employment preference to local community members (e.g. via ‘code of conduct’);
- Organize a ‘hackathon’ together with a technology-oriented innovation centre to develop a special app for rural youth in the project area to promote farming and facilitate market access

⁵⁰ World Bank (2013) *Inclusion Matters: The Foundation for Shared Prosperity* (WB: Washington, D.C.), p.xv.

⁵¹ Idem, p.4.

⁵² Widows are often dispossessed of their late spouses’ property including land by the spouse’s kinsmen. Special consideration and protection needs to be given to this category of vulnerable people to make sure they have access to land and other productive bases.

as well as create an online platform that allows women and youth to showcase their achievements and experiences with wider society and other relevant actors (e.g. government and donor agencies).

3. Spaces (Physical, Cultural, Social)

- Liaise with local police to ensure security in farming areas, markets and access routes;
- Organize public awareness-raising campaigns in consultation with local CSOs to promote farming, encourage inclusive community-level decision-making, prevent intra-community conflict and reduce gender-based violence;
- In general, ensure that initial screening, selection and support to project beneficiaries by community leaders and others at the grassroots level is based on merit and need rather than lingering primordial considerations;
- To prevent climate-induced exclusion, recommended climate change adaptation and mitigation measures should be given priority. Many beneficiaries may not be able to bounce back once they are affected by hydro-meteorological disasters such as flooding and erosion.

Annex 6: Detailed Costing of Environmental and Social Monitoring costs

Sn	Monitoring activities	Qty /frequency	costing index	USD	Year 1	Year 2 - 6
1	Site specific ESIA for farm constructions	420km	420	291,667	145,833	145,833
2	Site specific ESIA for processing facilities	148 nos	148	143,889	71,944	71,944
3	Site specific Environmental Screening for Drinking water rehabilitation	158 nos	158	21,944	10,972	10,972
4	Site specific Environmental Screening for commodity store construction	515 nos	515	71,528	35,764	35,764
5	Site-specific ESIA for Development of irrigated land	4400ha	4400	305,556	122,222	183,333
6	Environmental baseline and End Term Surveys - including biodiversity survey and Physical cultural Resources Survey	2 time	2	41,667	20,833	20,833
7	Environmental monitoring -Land, soil and water degradation assessment (including waste and agrochemicals in land, soil and water)	3times	3	62,500	20,833	41,667
8	Environmental monitoring -climate risk and flooding and erosion risk and vulnerability study	1times	1	16,667	16,667	0
9	Environmental monitoring -prediction of pest infestation Study	3times	1	13,889	13,889	0
10	Agric Insurance for climate and social risk transfer – annual	3time	6000	250,000	83,333	166,667

Sn	Monitoring activities	Qty /frequency	costing index	USD	Year 1	Year 2 - 6
11	support for GAMBIA MET to produce and disseminate agroclimatic information to farmers and set up mini climate stations in each participating LGAs	1time -	78	270,833	90,278	180,556
12	support for seed labs and research on flood and pest resistant rice and cassava varieties	1per region	9	62,500	62,500	0
13	support for conversion of rice waste to briquette and cassava waste into animal feed	2per regions	18	250,000	125,000	125,000
14	Training of "spraying gangs" for sustainable agrochemicals and pesticides application and management - about 100 per state for -5 regions	1time	900	125,000	125,000	0
15	Training/demonstration farmers on draining rice paddies in mid-season – 5 regions	1time	9	25,000	25,000	0
16	Training/demonstration on construction of water harvesting structure for dry season farming – 5 regions	1time	9	50,000	50,000	0
17	Social -Support for stakeholders dialogue and understanding on resources conflict management- 5 regions	1time	9	125,000	41,667	83,333
18	Social - support for dialogue on land reform and sustainable land management as adaptation – 5 regions	1time	9	125,000	41,667	83,333
19	Other social monitoring costs		9	50,000	16,667	33,333
20	Health insurance coverage for agro-entrepreneurs - annual- 5 Regions	3time	9	75,000	25,000	50,000
	TOTAL			2,400,000	1,145,069	2,254,931

Annex 7 –Stakeholders Consultations (evidence from various locations – Design mission
January-February 2019- The Gambia)



Guiding questions for environment and social screening	Yes/No	Comments/explanation
Category A – the following may have significant and often irreversible or not readily remedied adverse environmental and/or social implications.		
Project location		
32. Would the project develop any wetlands? (Guidance statement GS1)	No	
33. Would the project cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. conversion of more than 50 hectares of natural forest, loss of habitat, erosion/other form of land degradation, fragmentation, and hydrological changes)? (GS 1, 2 and 5)	No	
34. Does the proposed project target area include ecologically sensitive areas,⁵³ areas of global/national significance for biodiversity conservation and/or biodiversity-rich areas and habitats depended on by endangered species? (GS1)	No	
35. Is the project location subjected to major destruction as a result of geophysical hazards (tsunamis, landslides, earthquakes, volcanic eruptions)?	No	
Natural resources		
36. Would the project lead to unsustainable natural resource management practices (fisheries, forestry, livestock) and/or result in exceeding carrying capacity. For example, is their development happening in areas where little up-to-date information exists on sustainable yield/carrying capacity? (GS 4, 5 and 6)	No	
37. Would the project develop large-scale⁵⁴ aquaculture or mariculture projects, or where their development involves significant alteration of ecologically sensitive areas?	No	
38. Would the project result in significant use of agrochemicals which may lead to life-threatening illness and long-term public health and safety concerns? (GS 14)	No	

⁵³ “Sensitive areas” include: protected areas (national parks, wildlife/nature reserves, biosphere reserves) and their buffer zones; areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability.

⁵⁴ The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations on minimum size (usually ranging from a unit area of 10 to 50 hectares) and these will be adopted where they exist. However, where there are no standards, it is proposed to use 25 hectares as an aquaculture unit size to trigger ESIA.

39. Does the project rely on water-based (ground and/or surface) development where there is reason to believe that significant depletion and/or reduced flow has occurred from the effects of climate change or from overutilization? (GS7)	No	
40. Does the project pose a risk of introducing potentially invasive species or GMOs which might alter genetic traits of indigenous species or have an adverse effect on local biodiversity? (GS1)	No	
41. Does the project make use of wastewater (e.g. industrial, mining, sewage effluent)? (GS7)	No	
Infrastructure development		
42. Does the project include the construction/rehabilitation/upgrade of dam(s)/reservoir(s) meeting at least one of the following criteria? (GS8) - more than 15 metre high wall or - more than 500 meter long crest or - more than 3 million m ³ reservoir capacity or - incoming flood of more than 2,000 m ³ /s	No	
43. Does the project involve large-scale irrigation schemes rehabilitation/development (above 100 hectares per scheme)? ⁵⁵ (GS7)	No	
44. Does the project include construction/rehabilitation/upgrade of roads that entail a total area being cleared above 10 km long, or any farmer with more than 10 per cent of his or her private land taken? (GS10)	No	
45. Does the project include drainage or correction of natural water bodies (e.g. river training)? (GS7)	No	
46. Does the project involve significant extraction/diversion/containment of surface water, leaving the river flow below 20 per cent environmental flow plus downstream user requirements? (GS7)	No	
Social		
47. Would the project result in economic displacement ⁵⁶ or physical resettlement of more than 20 people, or impacting more than 10 per cent of an individual household's assets? (GS13)	No	

⁵⁵ The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations determining size of irrigation development requiring a full ESIA and these will be adopted where they exist. However, where there are no standards, it is proposed to use 100 hectares as an irrigation development unit size to trigger an ESIA.

⁵⁶ Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (guidance statement 13).

48. Would the project result in conversion and/or loss of physical cultural resources? (GS9)	No	
49. Would the project generate significant social adverse impacts to local communities (including disadvantaged and vulnerable groups and indigenous people) or other project-affected parties? (GS13)	No	
Other		
50. Does the project include manufacture and transportation of hazardous and toxic materials which may affect the environment? (GS2)	No	
51. Does the project include the construction of a large or medium-scale industrial plant?	No	
52. Does the project include the development of large-scale production forestry? (GS5)	No	
Rural finance		
53. Does the project support any of the above (Q1 to Q22) through the provision of a line of credit to financial service providers? (GS12)	No	
Category B – the following may have some adverse environmental and/or social implications which can be readily remedied.		
Location		
54. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas that may have adverse impacts on habitats, ecosystems and/or livelihoods? (GS1, 2 and 12)	No	
Natural resource management		
55. Do the project activities include rangeland and livestock development? (GS6)	no	
56. Does the project involve fisheries where there is information on stocks, fishing effort and sustainable yield? Is there any risk of overfishing, habitat damage and knowledge of fishing zones and seasons? (GS4)	No	
57. Would the project activities include aquaculture and/or agriculture in newly introduced or intensively practiced areas? Do project activities include conversion of wetlands and clearing of coastal vegetation, change in hydrology or introduction of exotic species? (GS4)	No	
58. Do the project activities include natural resources-based value chain development? (GS 1, 6 and 12)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
59. Do the project activities include watershed management or rehabilitation?	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key

		mitigation measures
60. Does the project include large-scale soil and water conservation measures? (GS 1 and 5)	No	
Infrastructure		
61. Does the project include small-scale irrigation and drainage, and small and medium (capacity < 3 million m³) dam subprojects? (GS 7 and 8)	No	
62. Does the project include small and microenterprise development subprojects? (GS 12 and 13)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures
63. Does the project include the development of agro processing facilities? (GS 2, 6 and 12)	no	
64. Would the construction or operation of the project cause an increase in traffic on rural roads? (GS10)	No	
Social		
65. Would any of the project activities have minor adverse impacts on physical cultural resources? (GS9)	No	
66. Would the project result in physical resettlement of less than 20 people, or impacting less than 10 per cent of an individual household's assets (GS13)?	No	
67. Would the project result in short-term public health and safety concerns? (GS14)	No	
68. Would the project require a migrant workforce or seasonal workers (for construction, planting and/or harvesting)? (GS13)	No	
Rural finance		
69. Does the project support any of the above (Q24 to Q37) through the provision of a line of credit to financial service providers? (GS12)	Yes	Yes but only eligible activities under Category B criteria considered see (PDR and ESMF) with key mitigation measures



Investing in rural people

Gambia (The)

Resilience of Organizations for Transformative Smallholder Agriculture Programme

Project Design Report

Annex: Climate Analysis The Gambia

Document Date: 15/10/2019

Project No. 2000001065

West and Central Africa Division
Programme Management Department

Republic of The Gambia
Resilience of Organizations for Transformative Smallholder Agriculture
Project (ROOTS)



Climate Analysis

A. The Gambia : Country Background

1. The Gambia has an estimated population of 1.88 million of which nearly half is rural and has greater incidence of poverty (2013 census). The main economic drivers in The Gambia are the services sector, accounting for approximately 58% of total output, followed by agriculture (30%) and industry (12%) respectively, (2nd National Communication). The potential contribution of the agricultural sector to Gross Domestic Product is limited by the rapid depletion of the natural resource base, the dependence on rainfed agriculture and the sensitivity and exposure to climate variability and change. (IFAD, 2015b)
2. The Gambia experiences rapid depletion of the natural resource base as a result of increasing population pressure, extended periods of shifting cultivation, deforestation, recurrent droughts and increasing climate variability. Agricultural productivity is hindered by reduced water infiltration, high water run-off rates and the drying of inland valleys and river tributaries, which have been observed. Erosion and siltation of the Gambia River have reduced water flow and resulted in increased saltwater intrusion into the marginal lands. Siltation and sedimentation continue to threaten the viability and sustainability of lowland agriculture. These effects combined with periodic floods and epidemics place the country at risk to disasters. (IFAD, 2015b)

Income and poverty

3. The Gambia has a GDP per capita of USD 512 (2012) and is classified as a Low-Income Food Deficit Country, producing about 50% of total food consumption needs with the rest being met by commercial imports of rice and wheat flour coupled with food aid, (GNAIP 2011-2015). According to the World Bank database, the country has achieved the Millennium Development Goal (MDG) poverty reduction target at the poverty line of USD 1.25 but income inequality remains high in the country, especially in the rural areas, with high regional disparities based on a recent WFP assessment. (IFAD, 2015b)
4. The national poverty rate was 48.4% in 2010, while the two predominantly rural regions Central River-North and Upper River had rates of 79% and 65.6% respectively, (Programme for Accelerated Growth and Employment –PAGE). Poverty is also more common when household heads are engaged in the agriculture and fishing sectors, which collectively employ almost 52% of the workforce. (IFAD, 2015b)

Temperature, rainfall, seasons and agro-climate zones

5. The Gambia has a Sudano-Sahelian climate, characterized by a long dry season (November to May) and a short wet season (June to October). Average temperatures range from 18° to 30°C during the dry season and 23° to 33°C during the wet season. Mean annual temperature has increased noticeably since the 1940s. Mean annual rainfall varies from 900 mm in the south-west to about 500 mm in the northeast. Average relative humidity is about 68% in coastal areas and 41% in inland areas during the dry season and generally above 77% throughout the country during the wet season, (Agricultural National Appropriate Mitigation Actions). (IFAD, 2015b)

Agriculture and rural livelihoods

6. Agriculture is the principal source of livelihood for the rural population and for the majority of households below the poverty line. The agriculture sector is characterized by: small-scale

subsistence rainfed crop production mostly undertaken during a single rainy season from June to October; traditional livestock rearing; semi-commercial groundnut and horticultural production; small-scale cotton and a large artisanal fisheries subsector. Only about 6% of the irrigation potential has been utilized. (IFAD, 2015b)

Figure 1 illustrates total cereal production in thousand tons and the crop production index for The Gambia (World Bank, 2018a).

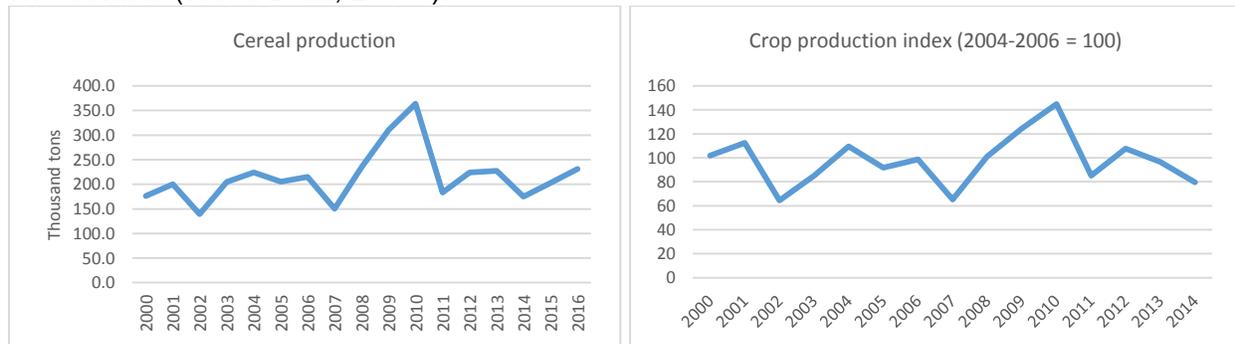


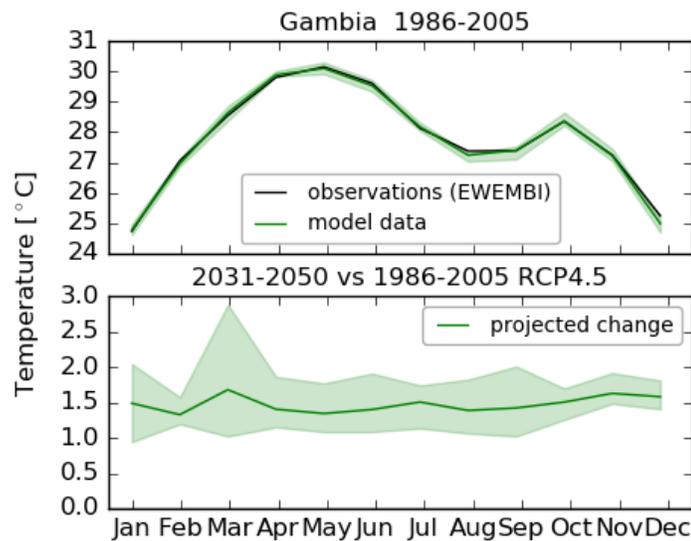
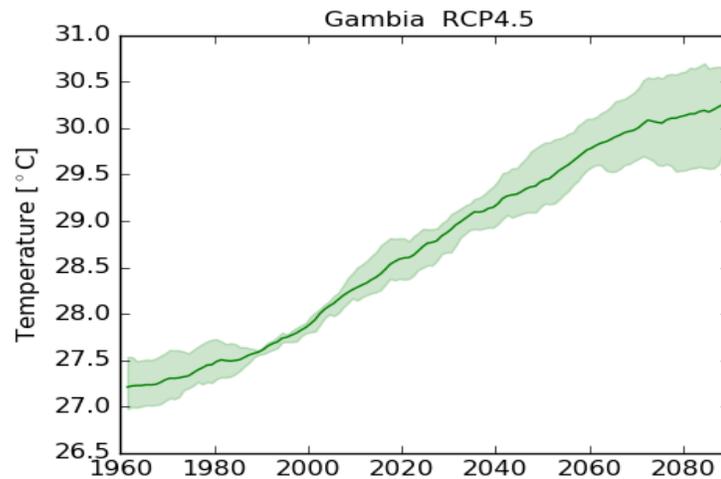
Figure 1: Cereal production and crop production index The Gambia

B. Climate change

7. According to Gambia's 2nd Communication to the UNFCCC, temperature measurements since the 1940s reveal a rising trend in the order of 0.50°C/decade. The models agree that temperature increases will be significant with extremes in temperature becoming the norm and substantial increases in the number of hot days and nights by the 2090s, occurring more rapidly in the east of the country. The trend is consistent with the Intergovernmental Panel on Climate Change Assessment Report 5 (IPCC-AR5), which states that near surface temperatures over West Africa and the Sahel have increased over the last 50 years by 0.40° to 0.67°C per decade. In the AR5, temperatures in Africa are projected to rise faster than the global average increase during the 21st Century. (IFAD, 2015b)

Temperature

8. Temperatures in The Gambia generally increase from the coast towards the west. The exception to this is in the wet season, JAS, when the cooling influence of cloud and rainfall mean that all regions experience similar temperatures. In the hottest season, AMJ, the hottest (inland) regions have averages temperatures of up to 35°C, whilst the cooler coastal regions are 25 to 28°C. In the cooler seasons (OND and JFM) average temperatures can be below 25°C at the coast and up to 30°C in the west. Inter-annual variability in temperature in this region of Western Africa is caused by the El Niño Southern Oscillation (ENSO). In la Niña years, temperatures tend to be cooler than average throughout the year. (UNDP, 2012). Mean annual temperature has increased by 1.0°C since 1960, an average rate of 0.21°C per decade. The rate of increase is most rapid in OND, at 0.32°C per decade. There are insufficient daily temperature observations available from which to identify trends in most daily temperature extremes. However, available data indicate that the average number of 'hot' nights per year increased by 28 (an additional 7.8% of nights between 1960 and 2003. (UNDP, 2012)



Projections on temperature

9. The mean annual temperature is projected to increase by 1.1 to 3.1°C by the 2060s, and 1.8 to 5.0°C by the 2090s. The range of projections by the 2090s under any one emissions scenario is 1.0- 2.0°C. The projected rate of warming is faster in the interior regions of The Gambia than in those areas closer to the coast. All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in current climate. Annually, projections indicate that 'hot' days will occur on 22-48% of days by the 2060s, and 25-69% of days by the 2090s. Days considered 'hot' by current climate standards for their season are may increase most rapidly in JAS, but the range between model projections is large, occurring on 26-99% of days of the season by the 2090s. Nights that are considered 'hot' for the annual climate of 1970-99 are projected to occur on 28-50% of nights by the 2060s and 36-69% of nights by the 2090s. Nights that are considered hot for each season by 1970-99 standards are projected to increase most rapidly in JAS, occurring on 67-99% of nights in

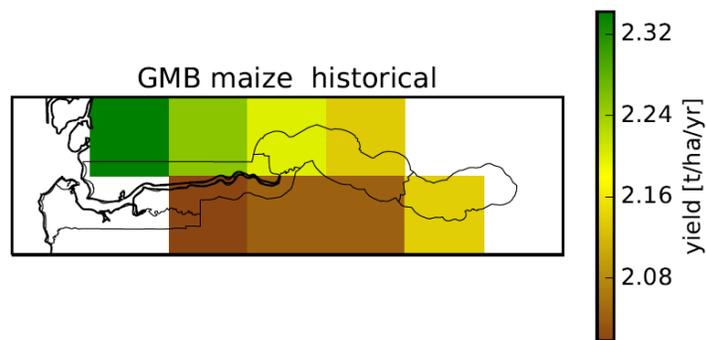
every season by the 2090s. Projected increases in hot days and nights are more rapid in the east of the country than the west. All projections indicate decreases in the frequency of days and nights that are considered 'cold'³ in current climate. Cold days occur on less than 3% of days by the 2090s, and cold nights less than 2% of nights. Cold nights do not occur at all by the 2090s in any projections under the highest emissions scenario (A2).

Precipitation

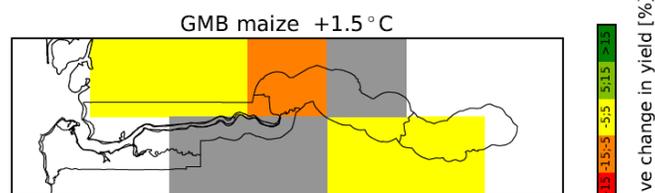
10. The Gambia has one wet season between July and September. There is a strong north-south gradient in total rainfall received at this time in this region of Africa, and this is evident even across the narrow latitudinal range of The Gambia. Mean monthly wet-season rainfall in The Gambia varies between 150 and 300mm between the northern and southern extremes. This rainfall season is controlled by the movement of the tropical rain belt (also known as the Inter-Tropical Convergence Zone, ITCZ) which oscillates between the northern and southern tropics over the course of a year, affecting The Gambia when it is in its northern position. Variation in the latitudinal movements of the ITCZ from one year to another causes large inter-annual variability in this wet-season rainfall. The most well documented cause of these variations is the El Niño Southern Oscillation (ENSO). El Niño events are associated with drier conditions in Sahelian Africa. (UNDP, 2012). Sahelian rainfall characterized by high variability on inter-annual and inter-decadal timescales, which can make long-term trends difficult to identify. A period of particularly high rainfall occurred in the early 1960s, whilst the early 80s were particularly dry. Linear trends do, however, indicate that wet season (JAS) rainfall in The Gambia has decreased significantly between 1960 and 2006, at an average rate of 8.8mm per month per decade. There are insufficient daily rainfall observations available from which to determine changes in extremes indices of daily rainfall. (UNDP, 2012)

Projections on precipitation

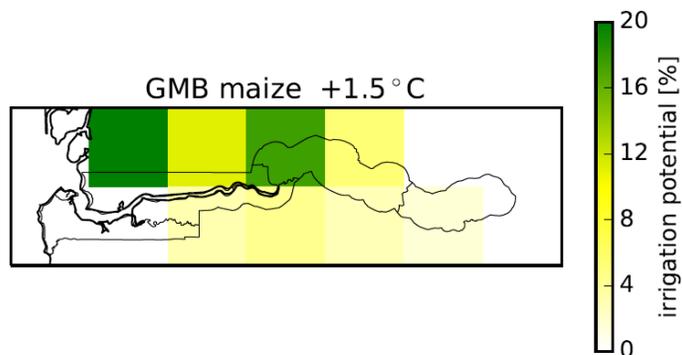
11. Projections of mean annual rainfall averaged over the country from different models in the ensemble project a wide range of increases and decreases in precipitation for The Gambia, but tend towards decreases, particularly in the wet season, JAS. Projected annual change ranges from -23 to +18% by the 2090s, with ensemble means between 0 and -3%. Projected JAS changes ranges from -53 to +74% by the 2090s, with ensemble means between -7 and -20%. Despite the projected decreases in total rainfall, the proportion of total annual rainfall that falls in heavy⁴ events tends towards increases in the ensemble projections. Seasonally, this varies between tendencies to decrease in JFM and AMJ, and to increase in JAS and OND. The range of projections from different models in the ensemble, however, includes both increases and decreases in all seasons. 1- and 5-day rainfall maxima in projections all tend towards increases in JAS. The range of changes in projections from the model ensemble covers both increases and decreases in most seasons.



Simulated crop yield (t/ha/yr) circa year 2000 (+0.61 °C above preindustrial). Data are shown for combined present-day irrigated and rainfed harvested areas.



Projected change in yield (%) relative to 2000 (multi-model ensemble median). Yellow areas show small level of impacts (range [-5;5%]). For larger level of impacts, grid cells where the models do not agree in the sign of change are shown in grey.



Relative increase in yield (%) if irrigation is applied on present day rainfed harvested areas, assuming no water limitation (note this does not account for actual irrigated water availability).

Climate change impacts, climatic hazards and extreme events

- Gambia's rural communities are dependent upon the natural resource base and rainfall and therefore significantly vulnerable to climate change and worsening environmental conditions. Trend data shows that the Western end of the country is getting wetter, but with return periods for poor rainfall of between 6-10 years. The central and Eastern parts of the country are becoming drier, with return periods for poor rainfall of between 4-8 years (depending on the location) and a delayed start to the rains, but with extremely good rains every 8-10 years. (IFAD, 2015b)

13. The larger overall drying trend of the last 40 years had a profound impact on water resources: dried up springs and streams and falling water tables, contraction of seasonally flooded swamps and enhanced saline intrusion. Since the 1960s, large areas of freshwater swamps in Western Gambia have been replaced by salt plains or salt-water marshes because of reduced fresh water inflow from storm run-off, preventing rice production in North Bank Region and Western parts of Central River Region. Discussions with communities during the concept design mission revealed that 50% or more of productive lowlands have been lost in some areas due to changes in environmental conditions, displacing agricultural activity to the uplands, which are already under pressure. (IFAD, 2015b)

Projections on climate change impacts

14. According to the National Adaptation Programme of Action developed in 2007, the main climate hazards in The Gambia are: torrential rainfall, storms, drought, cold spells, intra-seasonal drought, heat waves and unseasonal rains. The last three are perceived as distinct evidence of the onset of a changing climate, which is characterised notably by increasing atmospheric CO₂ concentrations and sea level rise. Related hazards include a limited ability to predict the incidence of some hazards and the concomitance of multiple and mutually reinforcing hazards. (IFAD, 2015b)
15. Regional model studies included in the AR5 suggest an increase in the number of extreme rainfall days over West Africa and the Sahel during May and July with low to medium confidence. Dry periods of more than five days are expected to increase and breaks in rainfall of more than one week become frequent, as will droughts. Annual average total soil moisture is expected to continue to decrease due to increased evapotranspiration and reduced rainfall desiccate soil. Annual run-off will continue to increase, linked to storms and intense rain events. The wave regime is also expected to increase though the availability of wind predictions remains limited for West Africa.

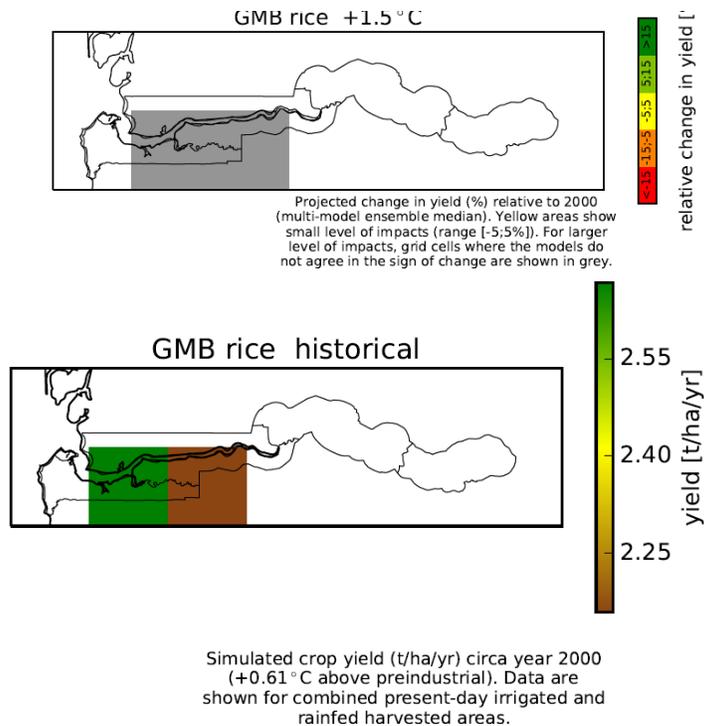
C. Vulnerabilities and Exposure to Climate Change: key Impacts to lives and livelihoods

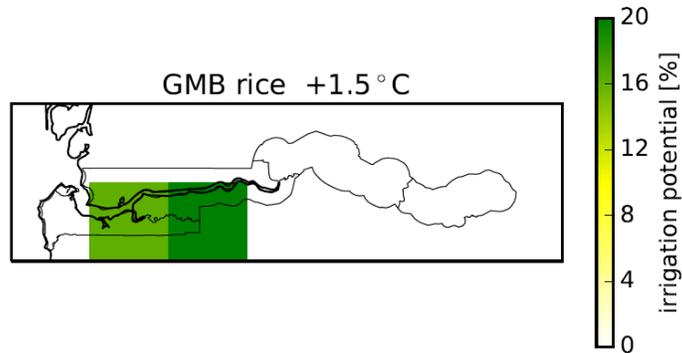
16. The Gambia ranks as one of the countries highly vulnerable to climate change based on the GAIN index, ranking 163rd out of 180 countries, (or 16th most vulnerable). The food security vulnerability to climate change, which is measured in terms of food production, food demand, nutrition and rural population, is 177th out of 186 ranked countries. The indicators for the score include projected change of cereal yields, projected population growth, food import dependency, rural population, agriculture capacity and child malnutrition. (IFAD, 2015b)
17. Temperatures in The Gambia (hot days and nights) are increasing with implications for crop productivity and the incidence of pests and diseases. The incidence of red spider mites, which attack vegetables and for which there is no known appropriate pest management remedy, is temperature related and a more frequently occurring problem, as are snails. Pest occurrences such as armyworms and termites attack rice and are associated with dry spells. (IFAD, 2015b)
18. The most vulnerable areas from a climate change perspective will be the lower-central part of the country where saline water (see Figure 3 below for extent of salt-water intrusion and limit) meets freshwater, the balance of which is determined by rainfall conditions and, increasingly, sea level rise. However, other regions are also vulnerable. In the Western part

of the country, which is more densely populated, lowland rice and horticulture are vulnerable to saline ground water resources and short return periods for low rains and heavy rains that will worsen land degradation in the uplands. In the Eastern part of the country, rainfall variability threatens both droughts and floods, and here too temperature increases will be felt more keenly. (IFAD, 2015b)

Climate change impacts on agriculture

19. Abovementioned climate-related stresses will magnify the effects on agriculture with impacts on the recharge of aquifers, soil erosion and sedimentation processes, changes in the amount of ground and surface water stored, and other disturbances to the hydrological cycle effects resulting in saline intrusion. Elevated atmospheric CO₂ concentrations are expected to increase crop yields, but higher temperatures and water shortages may act to counterbalance this beneficial effect. Recent experiments have shown that crop response to elevated CO₂ is relatively greater when water is a limiting factor. Well-fertilized crops respond more positively to CO₂ than less fertilized ones and thus the contrary is true for nitrogen. (IFAD, 2015b)





Relative increase in yield (%) if irrigation is applied on present day rainfed harvested areas, assuming no water limitation (note this does not account for actual irrigated water availability).

Climate change impacts on natural capital

20. The changes in temperature and rainfall will adversely affect natural resources such as forests and grasslands. Results obtained from the Holdridge Life Zone Classification model suggest that The Gambia's forest cover will fit more into a dry forest and tropical very dry forest categories. As the temperature becomes warmer, rainfall decreases and potential evapotranspiration increases, forest cover will be approximately subdivided into tropical very dry forest (35%-40%) and tropical dry forest (45%-60%), the warmer BMRC climate scenario having the highest percentage of tropical very dry forest. (IFAD, 2015b)

Climate change impacts on health

21. The effects of weather and climate inclusive of extremes (droughts, floods, storms) on human health are difficult to quantify because of poor reporting and paucity of research into secondary and delayed impacts. However, no one disputes that natural disasters caused by extreme weather adversely affect human health in many ways. Climate-related hazards faced by children, elderly people and other vulnerable socio-economic groups living in specific localities within The Gambia include droughts, flooding and sea level rise. (UNEP, 2012). Malaria, for instance, is an endemic disease peaking in the rainy season (July-October). Around 1,000 children die every year from the direct effects of malaria which also accounts for 20% of medical consultations at out-patient departments of government health facilities. Diarrheal diseases also exhibit seasonal patterns. Whereas 84% of the population have access to safe drinking water and 86% live in households with excreta disposal facilities, the incidence of diarrhea remains high due to inadequate water handling practices and environmental sanitation exacerbated by uncontrolled runoff and flooding. Acute respiratory infections (including pneumonia) are second to malaria as the leading cause of morbidity and mortality especially among infants and young children. The British Medical Research Council (MRC) studies on infant mortality found out that 14% of under-five deaths in the central part of the country were attributable to acute respiratory tract infections. (UNEP, 2012)

D. Vulnerability ranking and Mapping

22. A recent community vulnerability assessment has mapped the hot spots with high risk to both natural (bushfires, causal erosion, drought, floods, lightning storms, mangrove depletion, salt intrusion, soil erosion and wind storms) and agricultural hazards in the

country (see Figure 2 below). These threats have a profound impact on the livelihood situation of the rural communities who depend entirely on their natural resource base. (IFAD, 2015b)

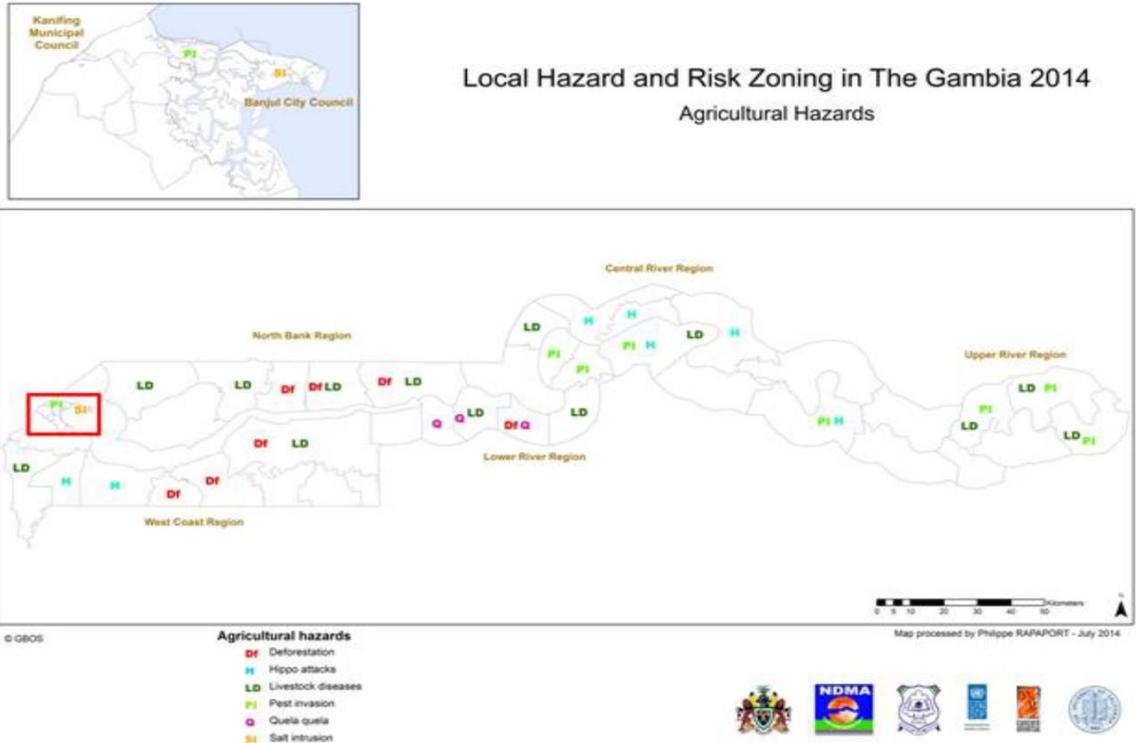


Figure 2: Climate hazard mapping for The Gambia

E. Suggested geographies and sectors for intervention for climate change adaptation

Sector	Adaptation mechanism	Description
Forestry	<i>Establishment and expansion of community natural forests, plantations, national parks and forest parks</i>	As an adaptation measure with mitigation co-benefits, the proposed action should enhance the resilience of forest ecosystems including provisioning functions in support of sustainable livelihood of direct beneficiaries. The activity will empower communities with the legal security, skills and knowledge necessary to rationally utilize their natural resources and conserve the remaining biodiversity.
	<i>Expansion and intensification of agro-forestry and re-forestation activities</i>	This adaptation measure which targets specific areas across the country will enhance the contributions of restored forest ecosystems to forest-based poverty alleviation, and, more broadly, to other national economic goals. The measure is expected to achieve the following:
	<i>Mainstreaming climate change in forest policies and plans</i>	In order to be fully responsive to the challenges of climate change, forestry sector policies and programs need to incorporate the realities of climate change.
Rangelands	<i>Development and implementation of effective policies on integrated natural resources management</i>	The negative impacts of climate change on rangelands can be attenuated through formulation and implementation of effective policies that seek to improve production and also take into consideration the needs of other natural resources-based sectors of the economy.
	<i>Restoration of rangeland landscape</i>	This adaptation option includes the manipulation and monitoring of animal stocking rates, institutionalization of strict grazing controls and management of the vegetation and soils.
	<i>New management strategies</i>	New strategies consist of a combination of measures including active selection of plant species, and stimulation of livestock economy to encourage owners to supply livestock and meat products on local/regional markets. .
Health	<i>Vector control program</i>	Health impacts from malaria will need investment in social mobilization and education, prevention techniques such as mosquito repellents, insecticide treated nets, (ITN) low-cost anti-malarial drugs. Use of ITNs in particular has been shown to reduce malarial morbidity and mortality in The Gambia.
	<i>Continuous public health education and awareness creation program</i>	Health education and awareness-raising are conducted at community level to help audiences in their decision-making on thematic issues. Health education and promotion programs should therefore incorporate elements of climate
	<i>Integrated disease</i>	Disease surveillance is a fundamental building block of infectious disease control

Sector	Adaptation mechanism	Description
	<i>surveillance and response</i>	program. In this regard, there is a clear need to create or improve on the design of health databases, and strengthening of the integrated disease surveillance program of MOHSW.
	<i>Nutritional support to vulnerable groups</i>	The National AIDS Secretariat with support from the global fund assists the ministry by providing nutritional support to vulnerable groups and their family members
	<i>Public health infrastructure</i>	Proper waste disposal should be promoted to prevent pathogenic and toxic contamination during floods. There are numerous tools and technologies that can be used to reduce the impacts of climate variability on the health of vulnerable human populations. In Kanifing Municipal Council (KMC), these include promotion of healthy housing environment and enforcement of building regulations. In areas where people depend on untreated water, reliable and safe drinking water as well as the use of simple measures such as proper storage of drinking water in narrow-mouthed vessels, filtering drinking water and use of use of chlorine tablets.
	<i>Vaccination programme</i>	Under its Expanded Programme of Immunization, The Gambia has one of the highest coverage of immunization in the West Africa sub region. Vaccination campaigns for all possible diseases need to be supported. Yellow fever vaccine is administered at the age of 9 months in all RCH clinics throughout the country. Meningitis vaccine is given only to Muslim pilgrims prior to the annual hajj and when an outbreak of the disease threatens.
Agriculture	Technical measures adaptation	Selection of drought-, pest- disease-, and salinity-resistant, high-yield crop varieties under local conditions. For this purpose the genetic potential of local crop species must be investigated and specimens stored in seed banks;
		Change in planting dates and replacement of long-duration upland and lowland rice varieties with short-duration varieties
		Demonstration, promotion and diffusion of improved post harvest technologies. This will have the long-term effect of reducing extensive cultivation of marginal lands
	Regulatory measures adaptation	Discouraging cultivation on marginal areas
		Cooked food waste reduction
	Livestock	Increase fodder production from intensive feed gardens
		Promote crop/livestock integration;
		Improve feed conservation techniques and access to supplements
Engage with other institutions, for example, the International Trypanotolerance Centre		

Sector	Adaptation mechanism	Description
		(ITC), to explore the potential of intensive livestock production systems in different areas in The Gambia Further explore opportunities for selective/cross-breeding of Ndama cows with higher milk-producing breeds

Table 1: Adaptation options by sector (UNEP, 2012).