



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

Naoko Ishii  
CEO and Chairperson

May 27, 2016

Dear LDCF/SCCF Council Member:

FAO as the Implementing Agency for the project entitled: *Gambia: Adapting Agriculture to Climate Change in the Gambia*, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with FAO procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by LDCF/SCCF Council in July 2014 and the proposed project remains consistent with the Instrument and LDCF/SCCF policies and procedures. The attached explanation prepared by FAO satisfactorily details how Council's comments have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at [www.TheGEF.org](http://www.TheGEF.org). If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

for Naoko Ishii  
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document  
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee



# REQUEST FOR CEO APPROVAL

PROJECT TYPE: FULL SIZED Project

TYPE OF TRUST FUND: **GEF LDCF**

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## **PART I: PROJECT INFORMATION**

<b>Project Title: Adapting Agriculture to Climate Change in The Gambia</b>			
Country(ies):	The Gambia	GEF Project ID:	5782
GEF Agency(ies):	FAO	GEF Agency Project ID:	622939
Other Executing Partner(s):	Ministry of Agriculture (MOA), Department of Agriculture (DOA), Department of Livestock Services (DLS), National Agriculture Research Institute (NARI), National Environment Agency (NEA), Department of Water Resources (DWR)	Submission Date:	07 March 2016
GEF Focal Area (s):	CCA	Project Duration (Months)	48
Name of Parent Program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/>		Agency Fee (\$):	597,394

## **A. FOCAL AREA STRATEGY FRAMEWORK**

<b>Focal Area Objectives</b>	<b>Expected FA Outcomes</b>	<b>Expected FA Outputs</b>	<b>Trust Fund</b>	<b>Grant Amount (\$)</b>	<b>Co-financing (\$)</b>
CCA 1	1.1 Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas 1.3 Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	1.1.1 Adaptation measures and necessary budget allocations included in relevant frameworks  1.3.1 Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	LDCF	3,654,380	19,305,000
CCA 2	2.1 Increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas 2.2 Strengthened adaptive capacity to reduce risks to climate-induced economic losses	2.1.1 Risk and vulnerability assessments conducted and updated  2.2.1 Adaptive capacity of national and regional centers and networks strengthened to rapidly respond to extreme weather events	LDCF	2,334,530	15,975,000
Sub-Total				5,988,910	35,280,000
Project management cost				299,446	1,550,000
<b>Total project costs</b>				<b>6,288,356</b>	<b>36,830,000</b>

## B. PROJECT FRAMEWORK

**Project Objective:** To promote sustainable and diversified livelihood strategies for reducing the impacts of climate variability and change in agriculture and livestock sector

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Co-financing (\$)
Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in the agriculture sector	TA	<p><b>Outcome 1.1</b> Strengthened adaptive capacity of institutions and mainstreamed climate change adaptation priorities into sectoral policies and plans</p> <p><b>Outcome Indicator 1.1:</b> (AMAT Indicator 2.2.1): No. and type of targeted institutions with increased adaptive capacity to minimize exposure to climate variability.  <i>Baseline:</i> Capacity of the government agencies and local stakeholders is inadequate to respond to impacts of climate variability and change in agriculture sector.  <i>Target:</i> 5 MOA, 40 DOA, 35 DLS, 20 NARI, 16 FTS, 150 regional staff (in 3 regions) and 150 entrepreneurs from 10 districts have increased capacity on climate change adaptation and capable of better respond to the impacts of climate change.</p> <p><b>Outcome Indicator 1.2</b> (AMAT Indicator 1.1.1): Adaptation actions implemented in national/sub-regional development frameworks (no. and type)  <i>Baseline:</i> Climate change mainstreaming in agriculture sector lacks technical support to mainstreaming, NAPs support started late 2015 but agriculture sector mainstreaming is weak.  <i>Target:</i> Climate change priorities are integrated into 4 national policies/strategies and plans and technical support provided to facilitate NAPs processes in agriculture sector through systematic consultations at all levels. 30 MOA staff trained on mainstreaming and are aware about importance of integration of adaptation priorities into policies/plans and strategies.</p> <p><b>Outcome Indicator 1.3:</b> NEA Laboratory services strengthened to support project implementation  <i>Baseline:</i> A laboratory exists in NEA, but focuses on pesticide residues and chemicals only.  <i>Target:</i> The existing laboratory is upgraded with new instruments and at least 6 staff trained on monitoring the impacts of adaptation interventions.</p>	<p>Output 1.1.1 Technical capacity of institutions at all levels (national, regional, district and local) focusing on climate change adaptation in agriculture sector strengthened</p> <p>Output 1.1.2 Quality-control laboratory in National Environment Agency (NEA) strengthened to monitor and analyse the impacts of adaptation practices on the natural resources and environment</p> <p>Output 1.1.3 National Adaptation Planning (NAPs) in agriculture sector facilitated and climate change concerns mainstreamed into national agriculture/livestock policies, strategies and programmes</p>	LDCF	702,155	3,000,000
Component 2: Assessment of vulnerabilities and risks and dissemination of timely climate	INV	<p><b>Outcome 2.1</b> Increased knowledge and understanding of vulnerability and risk assessment tools, agro-climatic monitoring and climate information services for food Security by national and</p>	<p>Output 2.1.1 Improved database, tools and methods for vulnerability and risk assessment, agro-climatic monitoring for food security developed at the national</p>	LDCF	487,800	2,500,000

risk information to users at all levels		<p>local level institutions</p> <p><b>Outcome Indicator 2.1</b> (AMAT Indicator 2.1.2.1): Type and scope of monitoring systems in place  <i>Baseline:</i> There is no systematic risk and vulnerability assessment conducted for 3rd national communication due to lack of data and information.  <i>Target:</i> Improved data, tools and methods such as climate, biophysical and socio-economic variable and analysis for vulnerability and risk assessments and food security early warning systems in place and at least 5 DWR staff trained to monitor and analyse the risks.</p> <p><b>Outcome Indicator 2.2</b> (AMAT Indicator 2.1.1) Relevant risk information disseminated to stakeholders  <i>Baseline:</i> There is no inter-agency cooperation in place to process, interpret and communicate weather and climate information to users in multiple sectors.  <i>Target:</i> Multi-disciplinary technical group strengthened and disseminating relevant risk information to target groups (3000 HH in 10 districts).</p>	<p>and local level and staff trained</p> <p>Output 2.1.2 National Framework for Climate Services (NFCS) supported and weather and climate forecasting customized for agriculture sector and capacity enhanced</p>			
Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing	INV.	<p><b>Outcome 3.1</b> Integrated climate resilient strategies for diversified livelihoods strengthened/introduced and sources of income improved for vulnerable households and communities</p> <p><b>Outcome Indicator 3.1</b> (AMAT Indicator 1.3.1): Households and communities have more secure access to livelihood assets (Score)– Disaggregated by gender.  <i>Baseline:</i> The community gardens are established through MDG1c and Songhai model do not comprehensively include measures to increase gardens ‘resilience to climate change in order to secure local livelihoods.  <i>Target:</i> Secure access (Score 4) to livelihood assets for 2500 farm households through community gardens, including 250 households with knowledge on value addition, 50 households with honey production and 30 poultry producers associations of which 70% are women beneficiaries.</p> <p>Outcome 3.2 Strengthened climate-resilient livelihoods of target populations by promoting sustainable crop intensification and innovative crop improvement and management practices</p> <p><b>Outcome Indicator 3.2.1</b> (AMAT Indicator 1.2.1.3): Climate resilient agricultural practices introduced to promote food security (type and level)</p>	<p>Output 3.1.1 Location specific livelihood diversification and income generation models improved and implemented</p> <p>Output 3.2.1 Drought tolerant crop seeds produced, demonstrated at field level with strengthened value addition and marketing</p> <p>Output 3.2.2 Rehabilitation of rice cultivable area by developing tidal irrigation and ensuring value addition</p>	LDCF	2,203,242	10,500,000
					1,510,484	7,000,000

		<p><i>Baseline:</i> The research station trials focus only on crop improvement of major cereals and not on drought tolerant traditional crop species.</p> <p><i>Target:</i> Drought tolerant crop varieties of findi, cassava, sweet potato, dual purpose cowpea introduced in all 10 districts directly benefitting 1500 households (200 HH benefit from findi, 300 HH benefit from sweet potato, 500 HH benefit from cassava).</p>	and market linkages				
Component 4: Enhancing resilience of rangelands by implementing improved management practices	INV.	<p><b>Outcome 4.1.</b> Improved management of rangelands and increased access to livelihood assets to sustain sources of income by livestock dependent communities</p> <p><b>Outcome Indicator 4.1.1</b> (AMAT Indicator 1.2.1.3): Climate resilient agricultural (livestock) practices introduced to promote food security (type and level)</p> <p><i>Baseline:</i> The rangelands are degraded and over grazed due to non- availability of proper management alternatives.</p> <p><i>Target:</i> 10 deferred grazing areas established and reseeded with multi-purpose grass/legume species, 10 intensive feed gardens established in each district, 6 livestock water points established, demarcation of cattle tracks in place benefitting 1000 HH.</p>	<p>Output 4.1.1. Condition of rangelands enhanced by promoting differed grazing areas and reseeded of multi-purpose grass and legume species</p> <p>Output 4.1.2. Provision of livestock water points and improved demarcation of cattle tracts</p>	LDCF	890,228	9,000,000	
Component 5: Monitoring, Evaluation and Knowledge Management	TA	<p>Outcome 5.1. Project implemented with a results based management framework and best practices and lessons learned disseminated widely</p>	<p>Output: 5.1.1. Monitoring and evaluation system designed, implemented at all levels and project related good practices and lessons learned documented and disseminated</p>	LDCF	195,013	3,280,000	
Subtotal						5,988,923	35,280,000
Project management Cost (PMC)						299,433	1,550,000
<b>Total project costs</b>						<b>6,288,356</b>	<b>36,830,000</b>

### C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming co-financing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Co-financing Amount (\$)
GEF Agency (FAO)	GAFSP (TA component)	Joint work planning (Cash)	1,400,000
Government (CPCU/MOA)	H9200	Joint work planning (Cash)	8,550,000
Government (CPCU/MOA)	FASDEP component of the GAFSP	Joint work planning (Cash)	14,880,000
Government (CPCU/MOA)	WAAPP	Joint work planning (Cash)	12,000,000
<b>Total Co-financing</b>			<b>36,830,000</b>

### D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>

GEF Agency	Type of Trust Fund	Focal Area	Country Name/	(in \$)
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			<b>Global</b>	<b>Grant Amount (a)</b>	<b>Agency Fee (b)<sup>2</sup></b>	<b>Total c=a+b</b>
FAO	LDCF		The Gambia	6,288,356	597,394	6,885,750
<b>Total Grant Resources</b>				6,288,356	597,394	6,885,750

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

<sup>2</sup> Indicate fees related to this project.

**F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

<b>Component</b>	<b>Grant Amount (\$)</b>	<b>Co-financing (\$)</b>	<b>Project Total (\$)</b>
International Consultants	90,270	-	90,270
National/Local Consultants	778,820	-	778,820

**G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No**

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF**

**A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.**

Some additions are included in the project document based on the recent developments with respect to the policy, plans and strategies. Only additional policies and strategies not described in details and/or not covered during the PIF stage are provided hereunder.

Programme for Accelerated Growth and Employment (PAGE): Adaptation plans and investments are direct outputs of UNFCCC processes. There has been a small level of integration of adaptation strategies into regular policies, plans and funded programmes in line ministries, mainly in PAGE, that operationalizes the Vision 2020 strategy, where climate change is recognized as risk to the growth and development of the country. PAGE indicates that because of the special conditions in The Gambia such as its small size, its hydrological and bio-geographical systems, its economic structure and development status and the key role weather and climate play in its physical, social and economic vulnerability, is particularly important that the Government mainstream climate change into its development policies and programmes.

An updated National Disaster Risk Reduction and Management Policy was approved by Cabinet in 2013. It provides an overall guiding framework for addressing the high levels of disaster risks in The Gambia, covering both natural and human-induced hazards, noting that adaptive capacity to withstand or cope with these events is low, and future disasters and climate change threaten to erode it further. The key issues are noted in the DRR/M Policy are poor and inadequate settlement patterns, inadequate drainage systems, capacities to address disaster issues at the local level and poor early warnings. Critical gaps and constraints are indicated as being low resilience of infrastructure and facilities, lack of appropriate building codes and land use planning.

The DRR/M policy also recognizes challenges related to low levels of risk awareness, knowledge and capacity to plan for disaster risks. The DRR/M policy includes three broad areas of intervention to improve i) risk knowledge ii) prevention and mitigation of disasters, and iii) preparedness and response. Specific measures mandated that are relevant to the NAP process are integrating DRR into development planning, put in place regulatory frameworks to promote DRR (land-use plans and building codes; build resilience of agriculture and food security systems, and promoting the use of science and technology for evidence-based decision making).

The vision of the National Rice Development Strategy (NRDS), 2014, is "self-sufficiency in rice production" by the year

2024. The over-arching objective of the NRDS (2015-2024) is the creation of a market-led, commercialized, efficient, competitive and dynamic rice industry which maximizes enhancement of food security and poverty reduction. Based on equal emphasis on intensification in both upland and lowland production systems and expansion of lowland production systems the NRDS is projected to achieve a production scope and target of 322 600 tons of milled rice in 2024. During the 2001/02 – 2010/11 decade, paddy production increased as result of Government-led investment programmes.

The increase in cultivated area under rice is derived from expansion in upland rice cultivation made possible by the introduction of NERICA rice varieties. Lowland ecologies have greater potential for rice production although their cultivation is constrained by low and poor rainfall distribution and poor water management and control structures. The overall strategic orientation of the NRDS will entail six sets of strategic actions, some of which will be affected by climate change, though not explicitly acknowledged in the Strategy. These actions are: i) land development, irrigation development and paddy production; ii) Post-harvest losses handling; iii. Processing and Marketing; iv) seed development and varietal improvement; v) rice production inputs supply distribution; and, vi) Pests and disease management.

Gambia Sustainable Land Management Investment Framework (GAMSIF) 2016-2020: The overall goal of GAMSIF is to mainstream and scale up SLM to secure ecosystem services and improve rural livelihoods. In this regard, the GAMSIF is aimed at reversing the trend of land degradation; improving land management and agricultural productivity and natural resource-based livelihoods by scaling-up and mainstreaming SLM and natural resource management in the development framework of The Gambia. The GAMSIF has been prepared as a precursor to a full country SLM investment framework which will be prepared during the implementation of the GAMSIF.

The GAMSIF is synchronized with the Government's Vision 2020, and the PAGE (2012-2015), and is a major step in implementing the Government's National Action Programme to combat desertification. The GAMSIF is also consistent with regional and international initiatives, including the AU's NEPAD Comprehensive African Agriculture Development Programme, and Economic Community of West African States (ECOWAS) Agricultural Policy. It has four components: 1. supporting on-the-ground activities for scaling-up SLM; 2. creating a conducive enabling environment for SLM; 3. Strengthening commercial and advisory services for SLM; 4. Developing effective SLM knowledge generation and management, M&E and information dissemination systems

The intended implementation of the Gambia Sustainable Land Management Investment Framework (GAMSIF) policy at the local government level can have synergies with the LDCF project. At the Regional level, the GAMSIF will be implemented by the Regional Agricultural Directorates (RADs), in partnership with the Technical Advisory Committee, the Multi-disciplinary Facilitation Teams, and Village Development Committees. The implementation of the GAMSIF at the District level will be spearheaded by the MDFTs and Village Development Committees (VDC), who will mobilize local communities (grassroots) to implement Sustainable Land Management (SLM) programmes and projects.

Gender equality is reflected in the 5th pillar of the Programme for Accelerated Growth and Employment (PAGE) 2012-2015, which is the successor to the Poverty Reduction Strategy Paper II, as a determinant of social cohesion. It is expected that the gender equality measures and creating an enabling policy framework based on proper gender analysis will have a prominent place in future policies and plans. Consideration to agriculture and agro-business should be the priority as these aspects will have an important role to play in empowering women because the sector provides the most available opportunities for women's income generation and wealth creation. Indeed, women comprise the largest share of the farming population, being particularly dominant in food crop production - both cereals and vegetables - and small scale agro-processing and marketing.

## **A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.**

The project will contribute to the implementation of the GEF LDCF with an overall goal of supporting the Government of the Gambia to become climate resilient by promoting both immediate and longer-term adaptation measures in development policies, plans, programs, projects and actions. This project is consistent with LDCF results framework and will contribute to LDCF objective CCA-1 on reducing vulnerability to adverse impacts of climate change and specifically to the expected Outcome 1.1: Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas and Outcome 1.3: Diversified and strengthened livelihoods and sources of income for

vulnerable people in targeted areas; and objective CCA-2 on increasing adaptive capacity to respond to the impacts of climate change - Outcome 2.1: Increased knowledge and understanding of climate variability and change-induced threats at country level and in targeted vulnerable areas and outcome 2.2: Strengthened adaptive capacity to reduce risks to climate-induced economic losses.

The project complies with the NAPA-identified urgent needs and is relevant for supporting national development goals and for achieving MDGs. The project is designed to accommodate the additional adaptation costs of priority actions identified in the NAPA and build on other baseline projects described in section A.1. The proposed LDCF project address two major priority projects and needs identified NAPA, priority project 3: Diversification and intensification of agricultural production, processing and marketing; and priority project 8: Improved livestock and rangeland management for food security and environment sustainability. The Gambia's climate change integrated Programme for Accelerated Growth and Employment (PAGE) which is the replacement of the PRSP presents the five pillars (i) accelerating and sustaining economic growth, (ii) improving and modernising infrastructure, (iii) strengthening human capital stock and enhancing access to social services, (iv) improving governance and increasing economic competitiveness and (v) reinforcing social cohesion. The proposed project will contribute to pillars i) and iii).

### **A.3 The GEF Agency's comparative advantage:**

No substantial changes from PIF. However, the project is aligned with FAO's new Strategic objective 2 (SO2): Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner. Organizational Outcomes 1 (output 1.1 and 1.2) and Strategic Objective 5 (SO5): Increase the resilience of livelihoods to threats and crises. At the country level, the project is aligned with Interim Country Programming Framework (CPF) Priority 3: Disaster Risk Reduction and Climate Change Adaptation that is currently under finalization.

### **A.4. The baseline project and the problem that it seeks to address:**

The Co-financing and baseline projects except Capacity development component of the Global Agriculture and Food Security Programme (GAFSP) have been changed due to recent developments. The new co-financing projects are described below:

**Food and Agriculture Sector Development Project (FASDEP) of the Global Agriculture and Food Security Programme (GAFSP) (June 2013 – Dec 2018).** The Component 2 on Agricultural production, diversification and commercialization (USD 10.928 million) and Component 3 on Improved approaches to national food and nutrition security and its sub-component 2 on building household resilience (USD 3.952 million) is directly relevant to the GEF project. The project is implemented by Ministry of Agriculture (MOA) through its Central Project Coordinating Unit (CPCU). The project seeks to reduce rural household poverty, food insecurity and malnutrition (stakeholders resilience), through increased agricultural production and productivity and commercialization. The key outcomes will be: benefitting about 88% project beneficiaries (the vulnerable group women and youth), with reduced constraints hindering agricultural production and productivity. Through this project, the natural resources will be protected on a sustainable basis; market led private sector environment to foster smallholder commercialization promoted; and improved food security and nutritional status of vulnerable groups and households guaranteed. Total co-financing volume is USD 14.88 million.

The main outputs of the project include increased agricultural productivity and production through enhanced management of existing 3 000 ha and development of additional 200 ha under tidal irrigation; 155 ha of improved horticultural schemes and 60 ha of school gardens; 200 fish ponds, 25 small ruminant and 20 poultry schemes; 120 agro-business enterprises established and supported with 60% owned by women; 200 kilometres of access roads rehabilitated; 20 municipal market structures rehabilitated/constructed. All these have women and youth as principal beneficiaries (88%). Productivity level (per hectare) of the main agriculture enterprises is expected to increase as follows: Onion and Chillies growing from 6Mt to 10 Mt respectively; Cabbage from 15Mt to 20 Mt, tidal rice from 2.4 Mt to 6 Mt and tomatoes from 14 to 30 Mt. GEF investment will leverage infrastructure investments in access roads and markets, and will build on the project's capacity building efforts, especially in relation to community gardens adding particular emphasis on technologies and practices to enhance adaptation interventions in agriculture.

**West Africa Agriculture Productivity Programme** (is implemented in 6 countries in West Africa. The Gambia component is managed by **CPCU of MOA** from 2011 to 2020 with an IDA funding of USD 7.0 million and FPCR - MDTF funding of USD 5 million. The activities of the Component 1 on enabling conditions for sub-regional cooperation in the generation, dissemination, and adoption of agricultural technologies includes harmonizing national regulations at the ECOWAS level, establishing a national framework for technology generation and dissemination, knowledge management, information and communication, The Component 2 on national center of specialization/strengthening of the research system include upgrading core facilities and equipment, upgrading the capacity of researchers and development workers, Support to priority research programs. The component 3 on support to demand-driven technology generation, dissemination and adoption includes competitive agricultural research grant scheme, support to technology transfer and promotion of sustainable seed systems. The total co-financing amount is USD 12.0 million. The GEF project will leverage the strengthened national agricultural research, knowledge management and information framework. The GEF project's focus on strengthening institutional and technical capacity as well as information system for agriculture adaptation to climate change will add value to the productivity enhancement approaches that are the focus of the WAAPP.

**Gambia Commercial Agriculture and Value Chain Management Project (H9200) (June 2014 – Nov 2019).** The proposed project supports interventions designed to help the agriculture sector improve productivity and build resilience against weather-related shocks, while improving market access to provide incentives for farmers to increase their agriculture productivity. The activities of the project are clustered around two main interlinked technical components: (i) support to development of irrigation and productive infrastructure and (ii) support to value chain development. The third component deals with coordination of project activities, and support to the Ministry of Agriculture for overall sector coordination, to facilitate the implementation of the country National Agricultural Investment Program (GNAIP). The project will focus on: (i) improving on-farm productivity through reduced weather related risks and production intensification; (ii) increase value addition and market access; and (iii) support institutional development for value chain integration/coordination by strengthening producer organizations and promoting/public private partnerships.

The total co-financing volume from the project is USD 8.55 million. This GEF project will leverage the capacity building and infrastructure development and market value chain strengthening supported by this co-financing project, as well as the efforts to increase resilience of farmers to weather-related shocks. GEF investment will bring added value by strengthening national and institutional and technical capacity, as well as information systems that will strengthen the efficacy of decision-making for agricultural adaptation to climate change.

**A.5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:**

The co-financing and baseline projects focus investments without explicit consideration to increasing climate variability and climate change. Building on the baseline projects, the LDCF project will strengthen the ongoing and planned programmes by addressing the impacts of increased climate variability and climate change. In light of this, the LDCF project will directly support the implementation of the key 2 priorities identified in the NAPA (priority 3 and 8): (i) promoting diversification of livelihood strategies and intensification of agriculture production, processing and marketing, and (ii) improved livestock production and rangeland management for sustaining livelihoods of local communities. These priorities will be complimented with cross cutting elements such as: (1) Strengthening of institutional and technical capacity of agricultural services to promote adaptation and (2) assessment of vulnerabilities, risks and dissemination of timely risk information to better plan crop and livestock management practices.

Improved livestock and rangeland management for food security and environmental sustainability. Emphasis will be given to address issues at the local level aiming to reduce the vulnerabilities and enhance adaptive capacity. To achieve adaptation benefits, the additional costs financed by LDCF will allow boosting the adoption of climate resilient agricultural practices, improving range-land management practices, increase capacity building, and support policies and programs to incorporate climate change adaption and monitor the impacts of adaptation practices on natural resources. The project will specifically add value to baseline initiative as follows.

## **Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector**

The interventions as part of the technical assistance component of the Global Agriculture and Food Security Programme (GAFSP) focuses on capacity development to improve food security by increasing agricultural productivity linking farmers markets, and improving non-farm rural markets. The sub-component on capacity development covers training of smallholder Farmer-Based Organizations in aspects of agro-processing, business management and marketing, enabling their engagement in agricultural commercialization activities, as well as training of relevant government units including the Ministry of Agriculture (MOA) in market information and infrastructure management. The above baseline interventions are mostly related to strengthening of institutional and technical capacity related to regular production technologies. However, climate change adaptation aspects are not covered under this baseline project. The LDCF project will incorporate additional elements related to climate change adaptation, specifically promoting diversified climate-resilient livelihood strategies and crop and livestock production, processing and marketing of new varieties and crops in the GAFSP's interventions. For that purpose stakeholders involved need accurate training on CCA aspects that are relevant for the effective implementation of the GAFSP.

Additional LDCF financing from the project will therefore be used to strengthen the technical capacity in the Ministry of Agriculture (MOA) and its departments (DOA, DLS and NARI) at national, regional and district level on climate change adaptation, diversified agriculture strategies and rangeland management. This will be achieved by assessing training needs in the crop and livestock sector and conducting need-based training programmes. Capacity development efforts will also target the district field offices and community-based organizations. To sustain the training programmes beyond the project cycle, the training curriculum will be integrated into the DOA and DLS regular/annual training activities. This project will strengthen the outreach programme of the food technological services to develop and introduce new value added products to complement crop diversification (Train staff from Food Technology Services (FTS) and Horticultural Technical Services (HTS) technical staff on processing and packaging). The LDCF resources will also be used to train local entrepreneurs on newly introduced practices and train them on financial and market linkages.

In addition, the quality control laboratory in National Environment Agency (NEA) will be improved to monitor the impacts of adaptation practices on natural resources. The additional activities will also include mainstreaming of climate change concerns into agriculture and food security policies and plans through support to facilitate National Adaptation Planning (NAP) Processes in the agriculture sector.

## **Component 2: Assessment of vulnerabilities, risks and dissemination of timely risk information to users at all levels**

Information about vulnerabilities, risks and impacts on agriculture systems needs to be made available for better adaptation planning. Assessment of vulnerabilities and impacts and provision of early warning for food security in the Gambia are crucial. Currently, the Multi-disciplinary Working Group led by Department of Water Resources (DWR) is providing a monthly early warning bulletin for food security in the Gambia. The report covers synoptic situation, rainfall situation, outlook for the following decade, agro-meteorological situation, and agricultural situation. The usefulness of this Early Warning Information needs to be improved by incorporating new tools and methods.

The technical assistance under this component of improving early warning for agriculture will be cost effective and timely if implemented in coordination with GEF/LDCF/UNEP project on "Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change - 2nd Phase". The current level of expertise on tools and methods for risk and vulnerability assessment and methods of crop monitoring are not sufficient for designing location specific adaptation practices. Further, the risk and vulnerability assessment conducted for the preparation of the Second National Communication is not sufficient to plan for adaptation in the agriculture sector. Similarly, due to the lack of technical capacity this was not conducted for the third national communication to the UNFCCC.

The customization of weather and climate information services for the agriculture sector is constrained by non-availability of a National Platform for Climate Services in line with the Global Framework for Climate Services (GFCS). There is need to strengthen the User Interface Platform (UIP) between the Department of Water Resources and Ministry of Agriculture especially at the regional and local levels. Further, improved weather and climate forecast information dissemination for agriculture application at the local level is not sufficient in 3 selected regions of the country.

The additional activities under the Component 2 will therefore be implemented in close coordination with the LDCF project on “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change – 2nd Phase of the GOTG/GEF/UNEP LDCF NAPA” and in close collaboration with Department of Water Resources. The LDCF resources will be used to improve the application of climate services and early warning systems in the agriculture and livestock sector by improving crop databases, tools and methods for vulnerability and risk assessment and define the hotspots of vulnerability focusing on crop and livestock production. The proposed project will improve the capacities of more than 20 staff in MOA, train them on assessment tools and methods to ensure sustainability.

The project, building on previous experiences, will improve the quality of Early Warning Bulletins for Food Security in The Gambia and facilitate its outreach within the Government institutions and local communities in all selected regions for on the ground decision making. It will also help to establish a focal unit within the Ministry of Agriculture (MOA) at national level, to receive climate services and early warning systems and to communicate them to regional and district level offices and end-users (farmers and livestock herders). In addition, the activities will support to establish a national platform on climate services with a special emphasis on agriculture and food security. Further, the additional activities will support the establishment of a national platform on climate services with a special emphasis on agriculture and food security. Close consultations with the MOA and the GEF agency of the GOTG/GEF/UNEP LDCF project is expected to ensure the sustainability of the unit after end of the project by provision of Government budget.

### **Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing**

The co-financing projects - Food and Agriculture Sector Development Project (FASDEP) of the Global Agriculture and Food Security Programme (GAFSP), the West Africa Agriculture Productivity Programme (WAAPP) as well as the Commercial Agriculture and Value Chain Management Project (H9200), all focus on the improvement of agricultural production and commercialization and improving post-harvest practices and expanding market opportunities in order to increase smallholder household incomes. In partnership with the technical services of MOA, a package of interventions to support sustainable intensification of smallholder’s crop production is proposed through Farmer Field Schools.

This baseline project is in line with the priorities of the Government and some activities are relevant to priorities identified under project 3 of the NAPA. However, these activities have not explicitly considered climate related risks and vulnerabilities and suitable diversification and intensification practices. Additional efforts are required to address the needs of local communities considering climate risks and vulnerabilities in a comprehensive manner. Interventions under the proposed LDCF project will be tailored to address the immediate risks of climate variability and also considering future impacts of climate change.

Without LDCF resources, adaptation practices that are implemented at the local level through the above baseline projects may not match the climate related risks and vulnerabilities explicitly. Community-based stakeholders also need awareness-raising on climate change adaptation practices in agriculture. With LDCF resources, it would be possible to strengthen the baseline project initiatives considering the impacts of climate variability and climate change. The resources will therefore help to strengthen the baseline project and systematically package tested adaptation practices and new stress-tolerant varieties of crops and promote diversification of integrated livelihood & income generation practices and intensification of agriculture production, processing and marketing.

The additional activities aim to promote diversification of livelihood strategies in line with vulnerability and climate change projections and intensification of agriculture production systems to better manage climate risks and vulnerabilities, processing and marketing to enhance the effectiveness of baseline project activities. Additional activities

will include introduction of innovative and location specific vegetable garden models in 10 most vulnerable communities in 10 districts for increasing their resilience. It is expected that the proposed interventions will increase the level of income by 30% benefitting 2 500 households (20 000 individuals). In addition, the diversification strategy will include the introduction of drought tolerant *findi* (hungry rice), sesame, traditional and industrial cassava and also bee keeping to promote income opportunities for rural women. Complementary strategies will include vegetables processing, as well as *findi* processing where feasible.

Primarily, bee keeping at household level will be promoted as an alternate income generation activity for women. Nonetheless, this practice is climate-resilient and can reduce the risk of bush fire during extended dry conditions mainly caused by breaks in rainy season. The local communities often make fire to drive honey bees while honey collection and during dry season this often lead to widespread bush fire and causes extensive damage to livelihood assets. Bee keeping at household level can reduce unsustainable honey collection from the forests by making fire. Honey bees are efficient pollinators in a number of crops and bee keeping at household level can improve pollination in field crops and thereby increased yield and production could be achieved. Similarly, there are activities that promote sustainable crop intensification that consider climate risks and vulnerabilities; and these practices include: promoting dual purpose grain legumes, certified seed production of flooded rice, drought- and salt-tolerant varieties of crops, evaluation of varieties of tomato and onion for rainy season, water harvesting, and additional area under cropping through tidal irrigation.

The LDCF interventions will also benefit from the recently completed “The Gambia's Livestock and Horticulture Development Project” that focused on reducing rural poverty by raising the incomes of rural producers. The focus is to improve the returns from horticulture and livestock production, and build capacities at the grassroots level. The project targets production, processing and marketing of livestock and horticultural products at the community level. Specific interventions include small ruminant and poultry production and marketing and value-chain integration/upscaling (e.g. to address small blockages in value chain and/or upscale promising technologies). The LHDP project also focuses on provision of better extension services and promoting locally relevant production and livestock management practices and group entrepreneurship development. The major weakness is that these practices are not directly addressing climate related risks to livestock sector as articulated in NAPA priority project 8 that is relevant to this component. It is necessary to facilitate a location specific process to promote implementation of improved management practices for poultry and small ruminants for enhancing adaptive capacity and sustainable income generation.

Additional activities of the project will focus on improving poultry, small ruminants and cattle production considering the risks of climate variability and climate change. Additional activities will further focus on local community groups to enhance effectiveness and for wider dissemination. In that respect, the poultry producers associations in 26 districts will be strengthened on technical support to and by strengthening by-laws and locally acceptable rules and regulations for provision of drinkers, seeders, chicken wires to 1000 farmers and provision of 5000 cockerel from Department of Livestock Services (DLS) to improve genetic material so as to match the climatic risks. Disease control measures will be strengthened to benefit 400, 000 poultry birds in selected villages through better vaccination. The resources will also be used to strengthen local entrepreneurship to promote hatchery. Additional activities also include strengthening of The Gambia Indigenous Livestock Multiplication Association (GILMA) to control endemic diseases and this will benefit 400,000 small ruminants in 4 regions.

#### **Component 4: Improving rangeland management practices to increase access of livelihood assets and to sustain sources of income of livestock dependent communities**

Under Component 1 (Improved agriculture, land, water and nutrient resources management) of The Global Agriculture and Food Security Programme (GAFSP) activity 6 focuses on (i) capacity building of communities in sustainable soil and water management techniques and capacity building on agro forestry, rangeland management and biodiversity conservation techniques using farmer field school approaches. The outcome of the capacity development at the local level should be complimented with on the ground implementation of the technologies and practices that are promoted by the GAFSP. The baseline activity will therefore be linked to the project’s expected Output 4.2 on improved rangeland management interventions which will benefit from the capacity generated by GAFSP at the community level.

Improved production and management practices will be carried out to improve vegetative cover and to sustain livelihoods of livestock dependent communities. This includes establishment of “deferred” grazing areas in 10 sites +

planting of multi purpose leguminous tree species (10 intensive feed gardens). Livestock watering points (surface ponds) are necessary to support the most vulnerable communities. Tree intensive feed gardens will protect the natural assets and provide necessary livestock fodder during the dry season. Demarcation of cattle tracts are planned to increase cattle access to feed during rainy season and reduce over grazing during the dry season. Re-seeding with multi-purpose livestock grass/legume species (e.g Panicum, Andropogon, Stylosanthes, Cenchrus) is expected to improve natural assets of the livestock dependent communities.

Improved management of livelihood assets to sustain livelihood activities of livestock dependent communities will improve grazing areas, multi-purpose leguminous tree species and improve water storage capacity of the grazing lands and innovative tree intensive feed gardens. Support to demarcate cattle tracts will increase cattle access and reduce over grazing during the dry season. The intervention will promote regeneration of vegetation through the adoption of new practical silvi-cultural practices and improved management of grazing lands that in turn will improve the productivity of rangelands.

**Component 5: Monitoring, Evaluation and Knowledge Management**

The performance monitoring will rely essentially on the project M&E system. The M&E system will specify the impact, outcome and output indicators, the activities to be performed, the methodology, and clarify the roles and responsibilities of partners and stakeholders. The monitoring and evaluation system will include outcome and output indicators of the Adaptation Monitoring and Assessment Tool (AMAT) relevant to LDCF objectives 1 (reducing vulnerability) and 2 (increasing adaptive capacity)..

The impact of adaptation practices and improvement of adaptive capacities and livelihoods, will be assessed through surveys (farmer groups and households) and will be compared against the initial baseline scenario. Best climate change adaptation practices will be screened based on the indicators: environment friendliness, potential to reduce the impacts of climate risks, economic viability, sustainability, social acceptability, gender sensitivity, income generation, enterprise diversification, seasonal relevance and community’s need. The GEF funds will be used to carry out a mid-term evaluation/review and a final evaluation, and to disseminate good practices and lessons-learned for up-scaling by the partners and stakeholders.

***Changes in the results framework compared to the PIF***

The objective of the project remains unchanged. The Project Results Framework has been streamlined to facilitate project implementation and M&E. The full project framework is described in detail in the FAO-GEF Project Document (Section 1.3) and Annex A of this CEO Endorsement request. The adjustments introduced into the project results framework and the rationale are described below:

<b>PIF</b>	<b>CEO Endorsement</b>
Component 1. Strengthening institutional and technical capacity for adaptation to climate change in agriculture sector	Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector
Outcome 1.1 Strengthened adaptive capacity of 4 target institutions at the national level and 4 regional centres to reduce risks of climate variability and change in the agriculture sector covering 130 villages	Outcome 1.1 Strengthened adaptive capacity of institutions and mainstreamed climate change adaptation priorities into sectoral policies and plans
Output 1.1.1 Technical capacity of MOA, DOA, DLS and NARI at the national level strengthened through training of about 100 staff on climate change adaptation, diversified agriculture strategies, and rangeland management	Output 1.1.1 Technical capacity of institutions at all levels (national, regional, district and local) focusing on climate change adaptation in agriculture sector strengthened
Output 1.1.2 Technical expertise of regional, district	Output 1.1.2 Quality-control laboratory in National

and village level agriculture and livestock staff on climate change adaptation improved (Training of Trainers (ToT) to regional staff 30 staff in each region; total 150 trained in 4 regions; in-service training to 50 livestock officers and 100 agricultural extension officers covering 130 villages)	Environment Agency (NEA) strengthened to monitor and analyze the impacts of adaptation practices on the natural resources and environment  Output 1.1.3 National Adaptation Planning (NAPs) in agriculture sector facilitated and climate change concerns mainstreamed into national agriculture/ livestock policies, strategies and programmes
Outcome 1.2 Mainstreamed climate change adaptation priorities into 4 major national agriculture and livestock policies, plans and programmes	Incorporated as outputs in Outcome 1.1
Output 1.2.3 Updated national agriculture policies, strategies and adaptation plans available with priorities of NAPA and relevant investment plans and budget (at least 4 strategies/ plans with budget allocation for adaptation actions prepared and endorsed by the Government).	
Outcome 1.3. Strengthened institutional and technical capacity of two technical services and a quality control laboratory to promote value added products and to support crop diversification and improved linkages with financial institutions and markets	Incorporated as outputs in Outcome 1.1 and Outcome 3.1
Output 1.3.1. Outreach programme of the food technological services strengthened to develop and introduce new value added products to complement crop diversification (Train 16 Food Technology Services (FTS) and Horticultural Technical Services (HTS) technical staff on processing and packaging)  Output 1.3.2 Quality- control laboratory in National Environment Agency (NEA) strengthened to monitor nutrient and chemical profiles of drought tolerant crops and varieties.  Output 1.3.3 Enterpreuners (300) trained on newly introduced practices and linked to financial institutions and markets to motivate growing of new drought tolerant crops and varieties	
Component 2. Assessment of vulnerabilities, risks and dissemination of timely risk information to users at all levels	Component 2: Assessment of vulnerabilities and risks and dissemination of timely climate risk information to users at all levels
Outcome 2.1 Increased knowledge and understanding of vulnerability and risk assessment tools and agro-climatic monitoring and Early Warning systems for Food Security by 4 national level institutions	Outcome 2.1 Increased knowledge and understanding of vulnerability and risk assessment tools, agro-climatic monitoring and climate information services for food Security by national and local level institutions
Output 2.1.1 Improved database, tools and methods for risk and vulnerability assessment developed at the national level and staff trained (>50 core staff at MOA, DOA, DLS and NARI trained).	Output 2.1.1 Improved database, tools and methods for vulnerability and risk assessment, agro-climatic monitoring for food security developed at the national and local level and staff trained

<p>Output 2.1.2 Improved crop monitoring and early warning for food security developed for national level policy decision making and to enhance effectiveness of food security emergency operations.</p>	<p>Output 2.1.2 National Framework for Climate Services (NFCS) supported and weather and climate forecasting customized for agriculture sector and capacity enhanced</p>
<p>Outcome 2.2 Increased understanding of climate information services by the Ministry of Agriculture and tailored climate information disseminated to targeted vulnerable communities in 4 regions</p>	<p>Incorporated in Outcome 2.1</p>
<p>Output 2.2.1 Weather and climate forecasting customized for agriculture sector and capacity of focal unit within the Ministry of Agriculture strengthened to interpret climate information for agriculture applications.</p> <p>Output 2.2.2 Improved weather and climate forecast information products for agriculture disseminated to wider rural communities in 4 regions</p> <p>(Focusing specifically on agriculture and food security, this component will be linked with and complement the UNEP-LDCF Climate Change Early Warning Systems project).</p>	
<p>Component 3. Promoting diversification of livelihood strategies and intensification of agriculture production, processing and marketing</p>	<p>Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing</p>
<p>Outcome 3.1 Diversified livelihoods and sources of income improved for vulnerable households and communities in 4 targeted regions</p>	<p>Outcome 3.1 Integrated climate resilient strategies for diversified livelihoods strengthened/introduced and sources of income improved for vulnerable households and communities</p>
<p>Output 3.1.1 New and location specific vegetable garden models introduced and implemented in 20 most vulnerable communities in 15 districts for increasing incomes by at least 30% (each garden with an approximate area of 2.5 – 3.0 ha and irrigation owned by the community) benefitting 3000 households</p> <p>Output 3.1.2 Drought tolerant “hungry rice” (<i>Degetaria exilis</i>) promoted in two regions (Central River Region – North and Upper River Region) in 20 communities (500 households) with strengthened value addition (processing) and marketing</p> <p>Output 3.1.3 Drought tolerant traditional (Palmeta) and industrial cassava (<i>escolanta</i>) demonstrated (planting materials, processing and training on</p>	<p>Output 3.1.1 Location specific livelihood diversification and income generation models improved and implemented</p>

<p>packaging) and implemented in 130 communities to benefit 1200 households</p> <p>Output 3.1.4 Beekeeping practice implemented in 100 bush fire prone villages (to reduce the risk of forest fires from unsustainable honey collection practices) and women groups are trained on beep keeping and household level processing and linked to the markets</p>	
<p>Outcome 3.2 Strengthened climate-resilient livelihoods of target population in 4 regions by promoting sustainable crop intensification and innovative crop improvement and management practices</p>	<p>Outcome 3.2 Strengthened climate-resilient livelihoods of target populations by promoting sustainable crop intensification and innovative crop improvement and management practices</p>
<p>Output 3.2.1 Dual (grain and fodder) purpose drought tolerant grain legumes promoted as intercrops in traditional cropping systems as a climate risk management strategy at the community level (1500 households)</p> <p>Output 3.2.2 Certified seed production of drought tolerant varieties of “hungry rice”, cassava and sweet potato promoted by strengthening 5 small-scale entrepreneurs to benefit 1500 farmers in 4 regions</p> <p>Output 3.2.3 Improved capacity of National Agriculture Research Institute (NARI) to evaluate and protect traditional and improved varieties of crops suitable for changing climatic conditions</p> <p>Output 3.2.4 Additional 60 hectares of area brought under cropping by developing tidal irrigation and ensuring value addition and market linkages</p>	<p>Output 3.2.1 Drought tolerant crop seeds produced, demonstrated at field level with strengthened value addition and marketing</p> <p>Output 3.2.2 Rehabilitation of rice cultivable area by developing tidal irrigation and ensuring value addition and market linkages</p>
<p>Component 4. Improved livestock production and management practices for sustaining livelihoods of local communities</p>	<p>Component 4: Enhancing resilience of rangelands by implementing improved management practices</p>
<p>Outcome 4.1 Strengthened adaptive capacity of targeted local institutions and populations in 26 districts by promoting improved poultry, small-ruminantes and cattle production practices</p>	<p>Outcome 4.1. Improved management of rangelands and increased access to livelihood assets to sustain sources of income by livestock dependent communities</p>
<p>Output 4.1.1 26 poutry producers associations strengthened in 26 districts on technical aspect with revolving funds (seed money) to members, by-laws and regulation etc., for drinkers, seeders, chicken wires (1000 farmers), provision of cokrel (5000) to improve genetic material, disease control (400, 000 birds) through vaccination and strengthening of local enterprenours to promote hatchery (6 Nos)</p> <p>Output 4.1.2 Capacity of theGambia indigenous livestock multiplication association (GILMA)</p>	<p>Output 4.1.1. Condition of rangelands enhanced by promoting differed grazing areas and reseeding of multi-purpose grass and legume species</p> <p>Output 4.1.2. Provision of livestock water points and improved demarcation of cattle tracts</p>

strengthened to control endemic diseases (e.g. PPR) (400,000 small ruminantas in 4 regions)	
Outcome 4.2 Improved management and increased access of livelihood assets in 4 targeted regions to sustain sources of income by livestock dependent communities	Incorporated in Outcome 4.1
Output 4.2.1 “Deferred” grazing areas in 10 sites established and planting of multi purpose leguminous tree species (10 tree intensive feed gardens) Output 4.2.2 Livestock watering points (6 surface ponds) provided in most vulnerable communities  Output 4.2.3 Demarcation and marking of cattle tracts supported to increase cattle access to feed during rainy season and reduce over grazing during dry season (10 sites with use of 1.5 m poles for marking cattle tracts) Output 4.2.4 Multi-purpose livestock grass/legume species reseeded in 10 sites (e.g Panicum, Andropogan, Stylosanthus, Cenchrus)	
Component 5. Monitoring, Evaluation and Knowledge Management	Component 5: Monitoring, Evaluation and Knowledge Management
Outcome 5.1 Project implemented with a Results Based Management framework and best practices and lessons learned disseminated widely	Outcome 5.1. Project implemented with a results based management framework and best practices and lessons learned disseminated widely
Output 5.1.1 M&E system designed and field based data systematically collected to monitor project outcome indicators (AMAT tracking tools indicators) at all levels Output 5.1.2 Project-related good-practices and lessons-learned disseminated via publications, project website to facilitate upscaling by the Government and non-government organizations	Output: 5.1.1. Monitoring and evaluation system designed, implemented at all levels and project related good practices and lessons learned documented and disseminated

**A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:**

The risks identified in the PIF remain. The mitigation measures have been further assessed and described. Please refer to Section 3.2 of the FAO GEF Project Document for the full risk assessment.

**A.7. Coordination with other relevant GEF financed initiatives**

FAO and the project partners will collaborate with the implementing agencies of other programs and projects in order to identify opportunities and mechanisms to facilitate synergies with other relevant GEF projects, as well as projects supported by other donors. This collaboration will include: (i) informal communications between GEF agencies and other partners in implementing programs and projects; and (ii) exchange of information and outreach materials between projects. In particular, the project will develop mechanisms for collaboration with the following GEF project initiatives:

**UNEP LDCF project, “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change”** is the 2nd Phase of the GOTG/GEF/UNEP LDCF NAPA

Early Warning Project. The project objective is to strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Gambia.

**UNDP, LDCF project, “Gambia - Enhancing Resilience of Vulnerable Coastal Areas and Communities to Climate Change in the Republic of Gambia”** focuses on reducing Gambia’s vulnerability to sea-level rise and associated impacts of climate change by improving coastal defenses and enhancing adaptive capacities of coastal communities.

**FAO, GEF LD project “Community-Based Sustainable Dryland Forest Management”** (GCP /GAM/031/GFF), the project aims to strengthen institutions at national and regional levels with improved capacity to integrate dryland forest management into policies, sectoral planning, and practices (Under Land Degradation) and enhance community forestry legal ownership and efficient and effective transfer of forest ownership to communities. The project will be implemented between June 2016 and May 2021 in the areas north of the Gambia River, namely, North Bank Region, Central River Region (North), Upper River Region (North) and Lower River Region. A total of 82 communities will benefit from the intervention.

## **B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:**

### **B.1 Describe how the stakeholders will be engaged in project implementation.**

#### **B.1.1 Project implementation and management arrangements**

The project implementation arrangements are elaborated during the PPG stage and the details are provided below and complete description including a clear flow chart is provided in Section 4.2 of the project document.

The project will be executed by FAO through a Direct Execution (DEX) modality in close consultation with MOA. FAO and the MOA will be the main executing partners for the project implementation. The implementation will be supported by DOA, DLS and line agencies such as NARI and GLMA and other executing partners including DWR and NEA at the national level. At the regional and district level, the Regional Directorates of Agriculture and MOA’s service unit representatives will provide implementation support. The service units that will support the implementation of this project include agribusiness service, communication and extension services, horticulture, soil and water management and food technology and plant protection services.

Project beneficiaries will be the poor and marginalized communities, and small-scale farmers, who are the most vulnerable to climate risks. The project will be executed in the most vulnerable 3 regions of the Gambia, exposed to climate impacts, with no-access or low-access to information, knowledge and education; lack of resources, assets and income sources; and that rely on marginal and climate risk-prone and degraded lands. Areas which possess less access to community and governmental services to cope with climate change risks.

All assistance to the local beneficiaries will be channeled through the farmer networks. Farmers of 250 households at each of the 10 locations will be given a livelihood diversification and income generation model. Farmers organized in groups will do planning and implementation of the practices (livelihood improvement programs) that were identified for their location.

FAO as the GEF agency will provide supervision and oversight, as well as technical assistance in strengthening technical and institutional capacity for climate change adaptation, assessment, monitoring and provision of advance early warning information on vulnerabilities, risks and agro-meteorological forecasts to assist better adaptation planning and promoting community based adaptation to strengthen livelihood strategies.

Risk and vulnerability assessment and mapping will be designed in collaboration with local actors: RDCs, local government agencies, local communities, civil society, private sector organizations, and locally based NGO/INGOs. Communities will actively participate in awareness-raising activities and demonstrations, to better understand CC impacts and risks.

**Project Steering Committee (PSC):** The PSC will be jointly established by FAO and MOA and will be hosted by MOA, and will comprise of representatives from: the Ministry of Environment, Climate Change, Water Resources and Parks and Wildlife (MOCCWP&W), the Ministry of Fisheries (MOF), the Ministry of Finance and Economic Affairs (MOFEA); the Ministry for Women’s Affair, the Technical Departments of MOA, DWR, NEA, NARI, selected UNDAF members, and selected NGOs and Civil Society Organizations (CSOs) representatives. The PSC will be responsible for major decisions related to project coordination and administration. The project Steering Committee (PSC) will be chaired by the Permanent Secretary of the MOA. The PSC will give strategic directions to the project. It will approve adjustments in project plan and budget, if any and will also the progress review of the project. The PSC will meet twice a year.

The PSC will establish a National Technical Advisory Team (NTAT) and a Regional Technical Advisory Team (RTAT). The government will direct and support local level authorities in providing umbrella support to farmer groups. The MOA will identify potential participants for the training courses, and will release the selected staff from the various departments involved in project implementation from their normal duties to ensure their participation at the training, workshops and demonstration activities at village level, and to fulfil other commitments related to the project’s training activities at the pilot sites.

### B.1.2 Stakeholder involvement plan

There are number of stakeholders identified during the PIF preparation phase through national level consultations. The overall stakeholder matrix did not change, but the indicative roles and responsibilities are amended based one detailed discussions. The expected specific roles and responsibilities of the stakeholders were agreed in principle. It is also expected that there is a scope for additional organizations and agencies to participate in the project implementation phase. The priorities and perspectives of the local communities and most vulnerable populations (e.g. women) is reflected into the project document. A national expert on livelihoods and agribusiness will be engaged for this purpose and she/he will be part of the project implementation team. The community mobilization and extension expert will mainly focus on stakeholder engagement especially women, civil society organizations, indigenous communities and other relevant beneficiaries. FAO’s tools and methods for community mobilization for planning for adaptation<sup>1</sup> will be adopted to ensure inclusion of women and most vulnerable communities.

Key stakeholders and their perceived roles (updated during PPG)

Key stakeholders	Role and responsibilities	Potential benefits
Ministry of Agriculture (MOA)	Lead national implementing partner. The MOA will be the chair of the Steering Committee and draw members from other ministries and its departments.	Improved capacity to contribute to climate change mainstreaming into the agriculture Policies and Plans
Ministry of Fisheries, and National Assembly Matters	UNFCCC and NAPA focal point	Improved capacity and opportunity to incorporate climate change into relevant policy instruments
Ministry of Finance and Economic Affairs	Provision of funds for all government contributions into the project. Steering committee member	Improved understanding of potential negative impact of climate change events on national development and economic goals with respect to the Agriculture GEF sector.
The Ministry of Environment, Climate Change, Water and Wildlife	Focal Ministry for MEAs (UNFCCC, UNCBD, UNCCD); Member of Project Steering Committee	Improved capacity in the implementation GEF projects and tracking of outcomes and outputs.
Ministry of Local Government and Lands	Steering Committee Member; advocate for policy support to climate risk reduction for local communities	Improved capacity to integrate climate change concerns in development issues at the local level
Ministry of Trade, Industry and Employment	Steering Committee Member, advocate for value addition, agribusiness and trade	Promotion of value addition and marketing for the drought tolerant crops and varieties to be introduced by NARI and MOA.
Department of Water	Main player in climate and weather data	Improved coordination of this project with the proposed

<sup>1</sup> E-learning tool on community based adaptation to climate change: <http://www.fao.org/climatechange/67624/en/>

Key stakeholders	Role and responsibilities	Potential benefits
Resources (DWR)	collection, monitoring, processing, analyses and translation into forecasts, outlooks, and early warnings.	LDCF project on “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change – 2nd Phase”. DWR is coordinating the work of NAPs.
Agricultural Communications Unit	Member of project coordinating unit and steering committee. Contribution to developing communication aspects of the project	Improved capacity for development and dissemination of risk information to all stakeholders in the country and also to the local communities through regional and local offices.
National Planning Commission	Steering committee member; Linking project goals with overall Government policy	Better incorporation of climate change concerns in agriculture sector into relevant policy instruments
National Environment Agency (NEA)	Steering committee member; strong participation in sensitization for sectoral climate proofing.	The output on “Strengthen the quality control laboratory in National Environment Agency (NEA) to monitor nutrition and chemical profiles of diversified crops and varieties” will be implemented by NEA.
Department of Agriculture (DOA)	Promoting livelihood diversification and intensification to farmers (crop & livestock), community mobilization, and local monitoring, compilation of feedback from farmers.	Enhanced capacity on climate change adaptation through training and learning by doing at the local level.
Regional Directorates of Agriculture (RDAs)	Coordinate the project implementation at the regional level as part of the Regional Technical Advisory Team.	Close engagement of RDAs ensures sustainability of investments at the local level. The RDAs will have the project monitoring role.
National Agricultural Research Institute (NARI)	Steering Committee Member. Advice on adaptation measures related to agricultural activities at project sites (planting dates, types of seeds, water harvesting, etc.),	Strengthening Research and Development linkages; Implementation of project activities relevant to stress tolerant crops and improved crop varieties.
Department of Community Development	Active participation in pilot studies on effective two-way communication	Improved understanding of climate risk reduction issues and delivery at community level
National Farmers Platform	Member of the Steering Committee; advocacy for increased project benefits to farmers.	Improved awareness and capacity in climate change adaptation.
Gambia indigenous livestock multiplication association (GILMA); Polutry Producers Associations	Active participation to facilitate implementation of the project activities to improve desired outputs.	Strengthening the capacity of local organization to better prepare to address the impacts of climate change locally.
Local communities (most vulnerable and ethnic populations)	Direct beneficiaries	In the North Bank, Upper River and Lower River regions, about two thirds of the population is poor. There are 8 main ethnic groups in the Gambia. The project will target most vulnerable populations (especially women and rural youth) and ethnic groups.
UNEP	Knowledge sharing based on experiences from GEF LDCF	Increased experience in implementing LDCF projects and coordination of activities to enhance complementarity.
UNDP	Steering committee member	Increased Inter-agency cooperation in assisting The Gambia in reducing vulnerability to climate change.
Actin Aid	Advice on assessment of local needs and advocacy related to access and ownership of resources especially by Women.	Improving project’s outputs and outcomes especially related to targeting of vulnerable communities.

**B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):**

The project will strengthen the livelihood and resilience of the targeted households and farming systems by diversifying not only the agricultural production towards more drought tolerant crops but also by providing livelihood alternatives. The interventions will therefore enable its beneficiaries to better cope with climate change and adapt their agricultural practices, including livestock management. Especially women (70 % of the targeted households) will benefit from more secure livelihood assets through the establishment of community gardens with irrigation systems, honey and poultry production. In summary the project aims to achieve the following adaptation benefits: (i) institutions and targeted communities have capacities to minimize exposure to climate variability and climate change; (ii) climate change priorities have been integrated into at least 2 policies and 2 action plans; (iii) comprehensive risk and vulnerability information is compiled and weather and climate information is disseminated to 3000 HH in 10 districts; (iv) a food security and agro-met early warning system in place; (v) a total of 5500 farmers of which 70% are women benefit from the income diversification related activities; (vi) 10 deferred grazing areas established and reseeded with multi-purpose grass/legume species; (vii) 10 intensive feed gardens established (one in each district); (viii) 6 livestock water points established, (ix) demarcation of cattle tracks in place benefiting 1000 HH; (x) at least 25 good practices examples are packaged with details for replication and shared nationally.

### B.3. Explain how cost-effectiveness is reflected in the project design:

The ‘additional costs’ associated with loss of development benefits due to climate change and increased climate variability need to have close synergies and complementarity with the baseline project interventions. This means the activities of the partners in the baseline cover most of the basic development issues but some of the key considerations to climate change and increasing climate variability have not been considered. With a co-financing of 36.83 million USD, the FAO/GEF costs are less than 20% of the entire Project.

The Project follows on from previous collaboration between FAO and the Gambia on development of livelihood alternatives. The proposed Project will build on the lessons and implementation approach of the previous support to ensure cost-effectiveness. Several alternative approaches were considered for cost-effectiveness. These alternatives included combination of institutional and technical capacity development. The alternative approach of participatory implementation promotes learning-by-doing approach compared to conventional extension approaches. The Project aims to minimize the mobilization of international experts. This will reduce the costs associated with travel and consultancy. International experts will be hired on specific topics for which local experts are not available. At the local level, the Project will rely extensively on farmer-farmer experience sharing by engaging farmer groups.

**TABLE 8: SUMMARY OF THE MAIN M&E REPORTS, RESPONSIBLE PARTIES, TIMEFRAME AND COSTS**

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs (USD)
Inception Workshop, annual planning meetings/workshops, final project workshop	PMU, supported by the LTO, BH	Inception workshop within three months of project start up, annual workshops as per the schedule and work plan agreed and final workshop a month before closure of the project.	(5 x 3000) USD 15 000
Baseline survey for impact evaluation (questionnaire design, survey, travel expenses)	PMU and external experts. The project team and LTO to provide support to design the survey questionnaire.	Within three months from start of the project.	(10 districts x 2000) USD 20 000

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs (USD)
Mid-term review/ evaluation (Including questionnaire design, survey and compilation)	External Consultant in consultation with the project team and other partners (includes survey of participating households, travel expenses and report writing)	After completion of two years of implementation.	USD 40 000 (includes staff cost)
Final impact evaluation (Including questionnaire design, survey and compilation)	FAO evaluation unit and the project team. In addition a detailed ex-post analysis will be made based on the survey with participant households (5 participants per group), survey of control households, travel expenses, impact evaluation report writing and final evaluation.	At the end of project implementation.	USD 40 000
Project Progress Reports (PPRs)	BH (in collaboration with the PMU and the LTO) Approved and submitted to GEF by the FAO-GEF Coordination Unit	Six-monthly.	PMU time covered by the project budget. FAO staff time financed through GEF agency fees
Project Implementation Review (PIR)	BH (in collaboration with the PCU and the LTO) Approved and submitted to GEF by the FAO-GEF Coordination Unit	Annual	FAO staff time financed through GEF agency fees. PMU time covered by the project budget.
Monitoring by the Regional Directorates	Regional Directorates in close collaboration with concerned DADOs. PMU will coordinate the monitoring in collaboration with the technical experts.	Twice in a year	2500 x 2 x 4 years USD 20 000
Project M & E reports (includes project progress reports, co-financing reports, terminal reports)	PMU, with inputs from NPD, NTC and other partners. The project implementation report by PMU supported by the LTO and cleared and submitted by the GCU to the GEF Secretariat.	Semi-annual/annual or as required	USD 10 000
Terminal Report	NTC, LTO, TCSR Report Unit	At least two months before the end date of the Execution Agreement	USD 5 000
<b>Total Budget</b>			<b>USD 150 000</b>

### **PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

- A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this form. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
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Momodou B. Sarr	Executive director	NATIONAL ENVIRONMENT AGENCY, GAMBIA JIMPEX ROAD P.O.Box 48, BANJUL THE GAMBIA	DECEMBER 12 , 2012

#### B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

<b>Agency Coordinator , Agency Name</b>	<b>Signature</b>	<b>Date (Month , day, year)</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Gustavo Merino Director, Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla 00153, Rome, Italy		07 March 2016	Perpetua Katepa-Kalala FAO Representative Food And Agriculture Organization of The United Nations (FAO)	220- 4498034/4497567/449754 7	<a href="mailto:Perpetua.KatepaKalala@fao.org">Perpetua.KatepaKalala@fao.org</a>
Jeffrey Griffin Senior Coordinator, FAO GEF Coordination Unit. Investment Centre Division. FAO					<a href="mailto:GEF-Coordination-Unit@fao.org">GEF-Coordination-Unit@fao.org</a>

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

**Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector**

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 1.1 Strengthened adaptive capacity of institutions and mainstreamed climate change adaptation priorities into sectoral policies and plans	<p>(AMAT Indicator 2.2.1): No. and type of targeted institutions with increased adaptive capacity to minimize exposure to climate variability</p> <p>NEA Laboratory services strengthened to support project implementation</p> <p>(AMAT Indicator 1.1.1): Adaptation actions implemented in national/sub-regional development frameworks (no. and type)</p>	<p>Capacity of the government agencies and local stakeholders is inadequate to respond to impacts of climate variability and change in agriculture sector</p> <p>A laboratory exists in NEA, but focuses on pesticide residues and chemicals only</p> <p>Climate change mainstreaming in agriculture sector lacks technical support and is not systematically done</p>	<p>Training module/manual developed</p> <p>Standards on instruments decided and procured</p> <p>Consultations and start up training activities and existing agriculture and food security policies/plans reviewed.</p>	<p>Capacity developed</p> <p>Installation of instruments and capacity development programmes conducted</p> <p>Decentralized consultations completed</p>	<p>Reflected in decision making and response measures</p> <p>The laboratory is involved in monitoring of the impacts of adaptation practices</p> <p>Consolidation of inputs and final consultations conducted</p>	<p>Improvement in institutional and technical capacity sustained within the institutional system</p> <p>Sustainable running of the laboratory ensured</p> <p>Climate change concerns integrated and endorsed by the Government</p>	<p>5 MOA, 40 DOA, 35 DLS, 20 NARI, 16 FTS, 150 regional staff and 150 entrepreneurs from 10 districts have increased capacity on climate change adaptation and capable of better respond to the impacts of climate change.</p> <p>The existing laboratory upgraded with new instruments and at least 6 staff trained on operation and maintenance and are capable of monitoring the impacts of adaptation interventions on natural resources.</p> <p>Climate change priorities are integrated into 4 national policies/strategies and plans</p>	<p>Training reports, policy reports, plans, annual progress and evaluation reports</p> <p>Upgraded laboratory and sustained running with government support</p> <p>Consultation reports and updated policies and plans</p>	<p>Trained staffs will get involved in planning, policy and decision making</p> <p>The NEA is willing to expand its activities to monitor the climate change adaptation practices as part of its mandate</p> <p>Government is taking serious steps to address the climate change risks systematically at all levels</p>

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
							and technical support provided to facilitate NAPs processes in agriculture sector through systematic consultations at all levels and 30 MOA staff trained on mainstreaming and they are aware about importance of integration of adaptation priorities into policies/plans and strategies.		
Output 1.1.1 Technical capacity of institutions at all levels (national, regional, district and local) focusing on adaptation in agriculture sector strengthened	<p>No of national/regional/local level training programmes organized and sustained within MOA</p> <p>Number of national/ regional/ local level staff trained and supports climate change adaptation work</p> <p>Number of entrepreneurship trainings organized to strengthen agri-business and</p>	<p>No systematic training programmes conducted for MOA, DOA, DLS, NARI and other stakeholders</p> <p>No climate change adaptation related training programmes integrated into the regular activities of the MOA</p>	<p>Training needs assessment conducted and training manuals developed.</p> <p>First phase of four 2 days trainings per year (25 participants/training event) organized in year 1</p> <p>3 trainings (30 in each total 90) at the regional</p>	<p>One FTS pilot processing plant set up with processing equipment</p> <p>16 specialists in food technology services trained</p> <p>6 training programmes organized and 150 entrepreneurs from 10 districts trained and linked to financing institutions</p>	<p>Second phase of four 2 days trainings per year (25 participants/training event) organized in year 3</p> <p>Second phase of 3 trainings (30 in each total 90) at the regional level staff and 2</p>	<p>Consolidation of training manuals and resources for further use.</p> <p>Integration of training resources and training programmes into MOA's regular activities and sustainability ensured.</p>	<p>5 MOA, 40 DOA, 35 DLS, 20 NARI, 16 FTS, 150 regional staff (in 3 regions) and 150 entrepreneurs from 10 districts have increased capacity on climate change adaptation and capable of better respond to the impacts of climate change.</p>	<p>Training reports, consultation reports, training manuals, and updated plans through NAP processes.</p>	<p>The Government is willing to nominate the staff for the training programmes and is interested to integrate training resources into their regular activities.</p>

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	promote livelihood diversification and income generation activities		level staff and 2 trainings (30 in each total 60) for district level staff.		trainings (30 in each total 60) for district level staff organized.				
Output 1.1.2 Quality-control laboratory in National Environment Agency (NEA) strengthened to monitor and analyse the impacts of adaptation practices on the natural resource and environment	An upgraded laboratory with new and relevant instruments available  Number of staff trained on operation and maintenance and monitoring of adaptation practices	There is an existing laboratory but not geared towards monitoring of impacts of adaptation practices in agriculture sector	Procurement of instruments  Installation of instruments	A quality control lab of NEA upgraded and at least 6 staff trained on operation and maintenance and monitoring of adaptation practices	Guidelines for running the laboratory and aligned with the regular mandate of the NEA	NEA quality control lab is involved in assessment of impacts and final report available	The existing laboratory upgraded with new instruments and at least 6 staff trained on operation and maintenance and are capable of monitoring the impacts of adaptation interventions on natural resources.	Up gradation of laboratory and reports of impact assessments, training reports of the staff	The NEA is willing to take up this activity country wide for all relevant adaptation projects on a regular basis
Output 1.1.3 National Adaptation Planning (NAPs) in agriculture sector facilitated and climate change concerns mainstreamed into national agriculture policies, strategies and programmes	Number of consultations and training organized for the NAP processes and number of agriculture and food security policies mainstreamed with climate change concerns.	Agriculture sector is prominent in the current NAP processes but need additional technical support	A national level consultation for NAP conducted and a 2 days training for 30 participants organized	4 regional level consultations organized for NAPs processes	NAPs consolidation workshop conducted and NAP documentation supported.	The climate change concerns are integrated into at least 4 documents	At least 4 updated policies/plans available with climate change concerns integrated  30 MOA staff trained on mainstreaming and a NAPs documents consists of agriculture and food security related priorities	Consultation workshop reports, updated national policies and plans with climate change concerns integrated	NAP preparatory processes coincides with preparation/up date of agriculture and/or food security policies and strategies.

**Component 2: Assessment of vulnerabilities, risks and dissemination of timely climate risk information to users at all levels**

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 2.1 Increased knowledge and understanding of vulnerability and risk assessment tools, agro-climatic monitoring and climate information services for food Security by national and local level institutions	(AMAT Indicator 2.1.2.1): Type and scope of monitoring systems in place  (AMAT Indicator 2.1.1) Relevant risk information disseminated to stakeholders	Multi-disciplinary technical groups for agro-met and food security early warning available but very weak  There is no systematic risk and vulnerability assessment conducted for 3 <sup>rd</sup> national communication  There is no inter-agency cooperation in delivery of climate services for the benefit of decision makers at all levels	Consolidation of data and information for risk and vulnerability analysis  Exploratory study on current weaknesses in the weather and climate information systems, potential and feedback from decision makers	Tools and methods delivered and spatial information products developed  Deployment of tools and methods for risk and vulnerability assessment and weather and climate information systems including capacity development.	The information products and early warning systems applied at the national and decentralized levels  Application of agro-met and food security early warning products, risk and vulnerability maps and weather and climate information services	Customized products available, strengthened and sustained within MOA and DWR  Lessons learnt and update of information products based on the feedback from users	Improved data, tools and methods such as climate, biophysical and socio-economic variable and analysis for vulnerability and risk assessments and food security early warning systems in place and at least 5 DWR staff trained to monitor and analyse the risks. Multi-disciplinary technical group strengthened and disseminating relevant risk information to target groups (3000 HH in 10 districts)	Spatial information products on vulnerability and risk assessment used for UNFCCC submissions, decisions taken based on agro-met and food security early warning bulletins.  Risk and vulnerability profile document, early warning bulletins, customized weather and climate information products	Government actively seek data and information products and early warning messages for pro-active decisions.  Necessary data and information are available to develop risk and vulnerability maps; Decision makers at all levels actively seek advance information for decision making to reduce the impacts of climate risks
Output 2.1.1 Improved database, tools and methods for vulnerability and risk assessment, agro-climatic monitoring for	New data sets collated from different ministries and departments and number of risk	No updated vulnerability and risks assessments done after second national	Data collection quality checking and analysis for	Analysis for spatial information products on risk and vulnerability	Application of spatial vulnerability and risk assessment products for	Improved data, tools and methods such as climate, biophysical	One comprehensive risk and vulnerability atlas available for	Risks and vulnerability maps integrated into UNFCC	Necessary data is available with different ministries and departments

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
food security developed at the national and local level and staff trained	and vulnerability spatial products  New/updated and improved crop monitoring and early warning for food security available	communication  An agro-met early warning product is available but crop monitoring and regions specific information is not available.	risk and vulnerability analysis  Customization of tools and methods for crop monitoring.	assessments  Delivery of crop monitoring tools in DWR and development of new agro-met and food security early warning bulletins	adaptation planning  Use of agro-met and food security early warning for decision making at all levels	and socio-economic variable and analysis for vulnerability and risk assessments and food security early warning systems in place and at least 5 DWR staff trained to monitor and analyse the risks.	the whole country  An updated agro-met bulletin and food security early warning information regularly sent from DWR in close collaboration with MOA.	submissions  Regular updated/new agro-met and food security early warning bulletins available.	for updating the information products and early warning systems
Output 2.1.21 National Framework for Climate Services (NFCS) supported and weather and climate forecasting customized for agriculture sector and capacity enhanced	A national framework for climate services established and running  Improved weather and climate information products disseminated to at least three regions to help decision making at local level.	No national platform for climate services and user interface platforms available at the national level.  Weather and climate information is provided to 4 pilot sites through UNEP/LDCF project, but no information is communicated to selected three regions in the new LDCF project.	2 national level consultations  Scoping study for establishment of localized weather and climate information services conducted	2 national level consultations/workshops on national platform for climate services  Establishment of communication network and local technical teams for interpretation of weather and climate information for decision making	2 national level consultation s/workshops on national platform for climate services and evaluation of the platform  Weather and climate information communicate to 3 pilot sites (one each in three regions)	Final evaluation of the national platform for climate services (specifically collaboration between DWR and MOA) and utility of weather and climate information system for decision making at the local level.	A functioning national platform for climate services  Customized weather and climate information products disseminated to 3 regions and at least 3000 HH use weather and climate information for decision making	Reports of the national platform for climate services  Improved weather and climate information products and services available at the local level to help decision making.	The multi-sectoral national platform has specific focus on agriculture and food security sector  The DWR is capable of producing value added weather and climate information services

**Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing**

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 3.1 Integrated strategies for diversified livelihoods and sources of income improved for vulnerable households and communities	(AMAT Indicator 1.3.1): Households and communities have more secure access to livelihood assets (Score)– Disaggregated by gender	There are community gardens being implemented through MDG1c and Songhai model, but constrained by some practical issues	Feasibility study conducted and improved location specific integrated models suggested and implementation initiated	First phase of 5 units successfully established and beneficiaries trained and linked to markets and value addition support provided	Second phase of 5 units successfully established and beneficiaries trained and linked to markets and value addition support provided	Detailed study on each of models documented and success stories disseminated widely to promote up-scaling.	Secure access (Score 4) to livelihood assets by 2 500 farm households through community gardens, 250 households with knowledge on value addition, 50 households with honey production and 30 poultry producers associations of which 70% are women beneficiaries.	Periodical implementation reports and success stories and lessons learnt.	The proposed integrated models capture major weaknesses identified from the past experiences and will have the up-scaling potential through the country.
Output 3.1.1 Location specific livelihood diversification and income generation models improved and implemented	Number of community gardens (crops) established  Number and type of infrastructure established in community gardens  Number and type of institutional	There are number of community gardens already established under MDG1c and Songhai model projects but there are practical issues and weaknesses that limit success of the models.	Feasibility study in 10 districts conducted  Establishment of community gardens initiated in 5 districts (sites) after necessary community mobilization	Community gardens and necessary infrastructure completed in 5 sites and activities initiated in additional 5 sites  Introductory sessions between Business Development Services (BDS) and	Community gardens and necessary infrastructure completed in additional 5 sites  DWR completes establishment of local networks in all 3 pilot sites for dissemination of weather and climate information	Establishment of community gardens in all 10 sites continued in 4 <sup>th</sup> year to make sure that all investments are sustained.  Periodical DOA/DLS/NA RI field visits organized and participatory discussions conducted in all 10 districts  The integrated	Secure access (Score 4) to livelihood assets by 2 500 farm households through community gardens, 250 households with knowledge on value addition, 50 households with honey production and 30 poultry producers	Implementation and progress reports  Weather and climate information products communicated to local beneficiaries  Training reports  Consultation reports  Visit reports of	The localized integrated models of livelihood diversification and income generation captures weaknesses and addressed all of them and will have up-scaling potential.

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	<p>support provided at local level</p> <p>Number and type of activities relevant to agri-business and value addition conducted</p> <p>Number of household level income generation activities prioritized and implemented</p> <p>Number and types of support provided to enhance poultry and small ruminants production at community level</p>	<p>The models focuses on only vegetable production and is very small and the benefit received by the community is not making much difference in their livelihood and income generation opportunities.</p>	<p>Establishment of necessary infrastructure started in 5 sites</p> <p>Field visits of DOA/DLS staff from district facilitated in all 10 sites and consultations completed</p> <p>Meetings between DWR and producers in all 10 sites completed and needs documented</p> <p>Introductory sessions between Business Development Services (BDS) and financial institutions organized in 5 sites</p>	<p>financial institutions organized in additional 5 sites</p> <p>Community level training on processing, packaging and marketing organized in all 10 sites</p> <p>Establishment of beehives completed in 50 households and 2 honeybee production and value addition training organized</p> <p>Training for poultry producers association organized</p>	<p>Coverage of communication of weather and climate information services increased to all 10 sites through community garden networks</p> <p>Second phase of vaccination completed in all 10 districts and simultaneously national wide vaccination is completed for poultry and small ruminants.</p> <p>Support for additional 25 broiler units completed and necessary trainings completed.</p>	<p>livelihood diversification and income generation models assessed and the lessons learnt communicated widely for potential up-scaling by the community groups and also through other similar projects/programmes.</p>	<p>associations of which 70% are women beneficiaries.</p> <p>DWR and MOA work closely to communicate weather and climate information products in 3 selected sites reaching at least 3000 HH</p>	<p>the regional and district level DOA and DLS staff</p>	

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
			Procurement of beehives for 50 households processed	25 broiler units supported in 5 districts					
			Vaccination programme for small poultry and small ruminants started in 5 districts	Second phase of vaccination started in additional 5 districts and simultaneously national wide vaccination is completed.					
			First training for GILMA members organized						
Outcome 3.2 Strengthened climate-resilient livelihoods of target population by promoting sustainable crop intensification and innovative crop improvement and management practices	Number of climate resilient practices introduced and number of household benefitted  Number of field demonstrations organized and community participation ensured	The research station trials focuses only on crop improvement of major cereals and focus is not given to drought tolerant traditional crop species that have more potential in-terms of withstanding moisture stress	Certified seed/plating material production of drought tolerant varieties of crops strengthened and traditional crop species such as <i>findi</i> , cassava, sweet potato included.	Demonstration sites established in 10 locations covering all 10 selected districts in 3 regions and at least 250 households directly benefit through the field demonstrations	Demonstration sites established in additional 10 locations covering all 10 selected districts in 3 regions and at least 250 additional households directly benefit through the field demonstrations	The lessons learnt and cost benefit analysis of improved varieties in-terms of economic benefit at the household level completed for all 20 sites and feedback from the communities documented.	All 20 communities are closely engaged in field demonstrations and have access to drought tolerant crop varieties of <i>findi</i> , cassava, sweet potato, dual purpose cowpea	Demonstration reports  Evidences of new varietal distribution through certified seed production by NARO	NARI is capable of engaging large number of local stakeholders and willing to promote traditional crop species such as <i>findi</i>
Output 3.2.1 Drought	Number of field	Field	Community	Community	Certified seed	NARI provides	Drought	Seed	NARI is

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
tolerant crop seeds produced, demonstrated at field level with strengthened value addition and marketing	<p>demonstrations organized to promote drought tolerant crop species</p> <p>Number of certified seed production sites established and number of farmers involved in seed/planting material production</p> <p>Number of training events organized to promote value addition and marketing of findi, cassava, sweet potato and dual purpose cowpea</p> <p>Number of NARI staff trained/undertook visits to international research centres</p>	<p>demonstrations focus on varies for higher yield</p> <p>No specific field demonstrations organized focusing on climate change adaptation</p> <p>Traditional crops such as findi, drought tolerant cassava, sweet potato and dual purpose cowpea are sidelined due to new yield enhancement oriented research programmes by NARI</p> <p>Exchange visits by NARI scientists focused on conferences and workshops and not specifically focused on</p>	<p>mobilization and profiling study conducted in 10 locations covering all 10 selected districts</p> <p>Certified seed production sites selected and activities initiated in 5 sites by involving small-scale entrepreneurs</p> <p>Field demonstrations on drought tolerant crop species (findi, cassava, sweet potato and dual purpose cowpea) established in 5 districts of CRR-N and URR-N for findi and all 10 districts involving 20 communities for traditional and industrial</p>	<p>mobilization and profiling study conducted in additional 10 locations</p> <p>Certified seed production continued in 5 sites by involving small-scale entrepreneurs</p> <p>Field demonstrations on drought tolerant crop species (findi, cassava, sweet potato and dual purpose cowpea) established in all 10 districts benefiting 20 communities and a minimum of 500 households with each demonstration</p>	<p>production, demonstration of drought tolerant crops (findi, cassava, sweet potato, dual purpose cowpea) are demonstrated</p> <p>Training programmes on processing, packaging, storing and marketing of traditional crops conducted in all 20 communities</p> <p>NARI promotes ideal cereal legume combination in at least 5 sites covering all 10 districts to directly benefit at least 500 farm families</p> <p>Local producers are linked with business development services in all 20 communities through</p>	<p>continuous support to the certified seed production and field demonstrations in all 20 sites</p> <p>A comprehensive assessment and strategy prepared to up-scale potential traditional crops</p> <p>Regular exchanges and knowledge sharing promoted between NARI and at least 3 international institutions</p>	<p>tolerant crop varieties of <i>findi</i>, cassava, sweet potato, dual purpose cowpea introduced in all 10 districts directly benefitting 1500 households (200 HH benefit from <i>findi</i>, 300 HH benefit from sweet potato, 500 HH benefit from cassava).</p> <p>Periodical monitoring reports of field demonstrations</p> <p>Visit programme of the NARI/DOA staff to the demonstration plots and feedback from farmers</p> <p>Visit report and recommendation of the NARI staff's visit to international centres in the region.</p>	<p>empowered and capable of establishing field demonstrations together with DOA and other field level staff to promote drought tolerant crop species and cropping systems</p> <p>NARI collaborates closely with other activities carried out through DOA and DLS at the regional, district and community levels</p>	

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	Number and type of processing equipment supplied to farmers and number of farmer groups benefitted	transfer of technology from the CG centers	cassava; dual purpose cowpea based inter-cropping systems demonstrated in 10 locations  At least 1 findi processing machine supplied to one demonstration site (subject to cost)	AT least 3 NARI scientists visit international research centres in the region with a specific focus on technology transfer	consultations in relation to value addition and marketing.				
Output 3.2.2 Additional area brought under cropping by developing tidal irrigation and ensuring value addition and market linkages	Number of hectares brought under cropping by developing tidal irrigation (CRR-N region)  Number of farmers/households benefitted from the investment  Number and type of marketing linkages established to promote post-harvest handling	There is a limited area under rice cultivation and some of them are already affected by salinity  There is sustainable model to link rice production, processing and marketing	Feasibility study in CRR-N region and selection of potential sites for introducing tidal irrigation  Establishment of necessary infrastructure, land reclamation to bring 40 hectares of land under tidal irrigation	Provision of inputs to farmers to start cultivation in reclaimed land with tidal irrigation facility benefiting at least 200 farmers  At least one processing facility provided to the farmers  Consultations to establish linkages between producers and buyers	Continue producing crops using tidal irrigation facility  Processed produce packaged by involving community networks in selected locations  At least one producer – buyer agreement completed	The lessons learnt from the tidal irrigation models packaged and available for up-scaling  Cost-benefit analysis of tidal irrigation system completed for at least one contiguous site	AT least 40 hectares of land brought under tidal irrigation benefiting at least 200 farmers  At least one producer – buyer agreement completed	Periodical progress reports  Reports of the visits by project team  Operations and delivery report  Cost-benefit analysis of tidal irrigation systems	The topography and land forms are suitable for tidal irrigation in CRR-N region and Government still promotes the technology to ensure food security of most vulnerable communities.

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	and marketing			initiated					

**Component 4: Enhancing resilience of rangelands by implementing improved management practices**

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 4.1. Improved management of rangelands and increased access of livelihood assets to sustain sources of income by livestock dependent communities	(AMAT Indicator 1.2.1.3): Climate resilient agricultural (livestock) practices introduced to promote food security (type and level)	The rangelands are degraded and over grazed due to non-availability of proper management alternatives  There is no cattle tracks and lack of local conventions/ regulations with regard to grazing affects the rangeland productivity	Community mobilization conducted and sites selected for implementing rangeland management practices	At least 5 sites supported with deferred grazing, intensive feed gardens, and watering points	All 10 communities have conventions and local regulations in grazing and management of rangeland resources	All 10 sites provided with institutional support for regular operation and implementation of the conventions/reregulation for rangeland management	10 deferred grazing areas established and reseeded with multi-purpose grass/legume species, 10 intensive feed gardens established in each district, 6 livestock water points established, demarcation of cattle tracks in place benefiting 1000 HH.	Physical verification of investments and periodical progress reports	The rangeland management committee is willing to sustain and follow the regulations agreed and government provides continuous support for implementation
Output 4.1.1. Resilience of rangelands enhanced by promoting differed grazing areas and reseeding of multi-purpose grass and legume species	Number of communities benefit from establishment of deferred grazing areas  Number of rangeland management community is functioning effectively and efficiently using the resources  Number of intensive feed gardens developed and operational with community	There are very few successful models of deferred grazing sites exists	Community mobilization in all 10 sites initiated  Identification sites for establishing differed grazing, reseeding of multi-purpose grass/legume species and surface ponds  Local rangeland management committee established in all 10 sites	Establishment of 10 deferred grazing areas initiated  Establishment of all 10 intensive gardens initiated  Multi-purpose grass/legume species reseeded in all 10 sites	Establishment of 10 deferred grazing areas and 10 intensive feed gardens completed	Sustained support by DLS ensured and the feedback from communities integrated into the regulations and conventions of the rangeland management committees.	10 deferred grazing areas established and reseeded with multi-purpose grass/legume species, 10 intensive feed gardens established (one in each district)	Physical verification and periodical progress reports	The local grazing associations follow rules and regulations and DLS provides sustained support to maintain the established investments

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	participation								
Output 4.1.2. Provision of livestock water points and improved demarcation of cattle tracts	<p>Number of surface watering points created and number of livestock herders benefitted</p> <p>Area covered under demarcation and marking of cattle tracts to increase cattle access</p>	<p>There are few borehole water points developed, but not focused on less expensive water harvesting surface ponds to provide water for livestock during the rainy season</p> <p>Very limited sites with demarcation and marking of cattle tracts in LRR-N, URR-N and</p>	<p>Demarcation and marking of cattle tracts initiated in 5 sites</p> <p>Consultations to establish local conventions/regulations by community members</p>	<p>At least 3 surface ponds completed in selected sites</p> <p>Demarcation and marking of cattle tracts to increase cattle access completed in all 10 sites</p>	<p>Additional 3 surface ponds completed in selected sites</p> <p>The agreed conventions/regulations implemented</p>	<p>Sustained support by DLS ensured and the feedback from communities on surface water points and demarcation and marking of cattle tracts integrated into the regulations and conventions of the rangeland management committees.</p>	<p>6 livestock water points established, demarcation of cattle tracts in place in 10 sites benefiting 1000 HH.</p>	<p>Physical verification and periodical progress reports</p> <p>Progress of implementation and ownership of the rangeland management committee in implementing the plans/rules and regulations</p>	<p>The rangeland management committee is capable of effectively implementing the conventions and rules and regulations</p>

# Precise baseline will be developed through baseline survey before the commencement of the project interventions.

**Component 5: Monitoring, Evaluation and Knowledge Management**

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 5.1. Project implemented with a results based management framework and best practices and lessons learned disseminated widely	M & E system developed and implemented effectively	Baseline projects and programmes are established, but these projects and programmes lacks climate change adaptation perspective	M & E plan developed  AMAT tool established  Baselines established	Progress reports prepared and submitted	Mid-term workshops and evaluation/monitoring conducted	Final workshops and evaluations conducted	Very well structured baselines, evaluation of project at the end against the established baselines.	Inception reports, baseline survey reports, mid-term monitoring/evaluation reports and final evaluation reports	The project M & E framework adhere to the practical realities and deliverables are clearly quantified.
Output: 5.1.1. Monitoring and evaluation system designed, implemented at all levels and project related good practices and lessons learned documented and disseminated	Agreed M & E plan at the start of the project  AMAT tool available and followed during the monitoring  Targets and baselines clearly defined  Number and typology of good practices integrated and disseminated for wider adoption and replication	There is no comprehensive document elaborating good practices for adapting agriculture to climate change	M & E Plan prepared and agreed with stakeholders  AMAT tool revised taking care of recent developments at the start of the project  Baseline survey conducted within 3 months after initiation of the project	Questionnaire design, survey documents prepared for mid-term review/evaluation  Periodical supervision visits by DOA/DLS from regional and district levels	Mid-term impact review/evaluation  Compilation of good practices  Preparation of policy briefs for wider circulation  Conduct of initial cost benefit analysis of the good practices	Final evaluation  Compilation of all good practices and consolidation for replication  Final workshop for knowledge sharing and sustainability of investments and technical assistance  Preparation of terminal reports	A well structured M & E system in place and implemented as per the M & E plan  At least 15 good practices examples consolidated and cost benefit analysis conducted and shared widely for replication/up-scaling	M & E reports  Periodical progress reports  Document with compiled good practices examples	The M & E framework is simple enough to be implemented and the activities follows the results matrix and M & E framework is aligned closely with the results matrix.  The baseline data is credible and data collection completed within stipulated timeframe.

# precise baseline will be developed through baseline survey before the commencement of the project interventions.

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

**Comments from Germany dated July 30, 2014.**

**Gambia: Adapting Agriculture to Climate Change in The Gambia (GEF ID: 5782)**

Suggestions for improvements to be made during the drafting of the final project proposal:

**Comment:** Germany welcomes the proposal and its aim to make the agricultural sector in Gambia more climate-resilient. In particular Germany appreciates that it responds to NAPA priorities. However, Germany would like suggest the clarification of how subcomponent 1.3 contributes to adaptation to climate change in the agricultural sector as the proposed activities are not adaptation-specific.

The subcomponent 1.3 referred in the above comment is related to Outcome 1.3 and its 3 Outputs listed below.

- 1.3.1. Outreach programme of the food technological services strengthened to develop and introduce new value added products to complement crop diversification (Train 16 Food Technology Services (FTS) and Horticultural Technical Services (HTS) technical staff on processing and packaging).
- 1.3.2 Quality- control laboratory in National Environment Agency (NEA) strengthened to monitor nutrient and chemical profiles of drought tolerant crops and varieties.
- 1.3.3 Enterpreuners (300) trained on newly introduced practices and linked to financial institutions and markets to motivate growing of new drought tolerant crops and varieties.

These outputs are now revised and consolidated but the technical assistance and investment related to these three activities remains in the new design with additional justification on adaptation benefits in the targeted agricultural sector.

Outputs/activities (PIF)	Outputs/activities (alignment in the current project document)	Clarification (response to comments)
1.3.1. Outreach programme of the food technological services strengthened to develop and introduce new value added products to complement crop diversification (Train 16 Food Technology Services (FTS) and Horticultural Technical Services (HTS) technical staff on processing and packaging)	This activity is included under Outcome 1.1.and Output 1.1.1: Technical capacity of institutions at all levels (national, regional, district and local) focusing on climate change adaptation in agriculture sector strengthened in the new project design.	The capacity of the outreach programme of food technological services need to be strengthened to promote value addition to the stress tolerant crops and varieties to be introduced as part of Component 3. The National Agricultural Research Institute (NARI) is expected to provide support related to supply of quality seeds and inputs and the promotion of value addition and quality checking rests with the food technological services. Introduction of drought tolerant crops and varieties by NARI should be complemented by value addition and marketing activities to ensure sustainability. Production – value addition – marketing linkage is crucial to promote the applied adaptation practices and sustain the investment at the field level.
1.3.2 Quality- control laboratory in National Environment Agency (NEA) strengthened to monitor nutrient and chemical profiles of drought tolerant crops and varieties	This activity is included under Outcome 1.1 and Output 1.2 with some modification to the title as follows: Output 1.1.3 Quality-control laboratory in National Environment Agency (NEA) strengthened to monitor and analyze the	The NEA focuses on providing education about the environment, increasing environmental awareness and empowering communities to take action to identify and solve environmental problems. Currently, the agency is monitoring chemicals and pesticides and their residues in the environment. The proposal to upgrade the existing laboratory with new instruments and to provide tailored training to staff on operation and maintenance can enhance

	<p>impacts of adaptation practices on the natural resources and environment. The focus is changed to monitoring and analysis of the impacts of adaptation practices on the natural resources and environment.</p>	<p>the capability of the laboratory to analysis the soil and water samples from the adaptation intervention sites and in turn assess the project's impacts. This laboratory can cater the nation-wide needs in addition to support to monitor adaptation interventions planned under the project.</p>
<p>1.3.3 Entrepreneurs (300) trained on newly introduced practices and linked to financial institutions and markets to motivate growing of new drought tolerant crops and varieties</p>	<p>An activity on "Training programme for entrepreneurs on newly introduced practices and agribusiness" is foreseen under the Outcome 1.1 and Output 1.1.1 in the project document. The focus has not changed in the new design, but the number of entrepreneurs to be trained was reduced to 150 and number and duration of trainings was increased (as detailed in the project document).</p>	<p>Component 3 of the project envisages introduction of traditional drought tolerant crop varieties. The improved varieties are expected to have a large adaptation potential with regards to withstanding moisture stress and drought during abnormal rainfall variability. For instance, crops such as findi/fonio (hungry rice, <i>Digitaria exilis</i>), traditional cassava, dual purpose cowpea, Moringa are having a greater potential to withstand drought than other crops currently grown by the target groups. But these varieties are not practiced now due to labour intensive post-harvest operations and therefore limited opportunity for value addition. To promote and motivate the farmers to grow drought tolerant varieties they need appropriate value addition and marketing know-how and skills. Entrepreneurship development is very important and this capacity development can facilitate linking of producers and markets. Thus entrepreneurship training in the selected 10 communities in 10 districts are envisaged. This activities is cost efficient as the cost requirement for training of entrepreneurs is much less compared to investments related to diversification efforts. Sustainability of crop diversification efforts depend on the value addition and marketing in the country.</p>

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>2</sup>**

A. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

NA

B. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF: <b>US\$ 150,000</b>			
<i>Project Preparation Activities Implemented</i>	<b>GCP/GAM/034/LDF Amount (\$)</b>		
	<i>Budgeted Amount</i>	<i>Amount Spent To Date</i>	<i>Amount Committed</i>
Professional salaries	8,491	0	0
Consultants	90,000	31,772	3,656
Travel	32,500	11,586	1,084
Workshops	15,009	5,502	0
Expendable Procurement	4,000	0	0
Technical Support Services	0	4,632	0
General Operating Expenses	0	2,018	0
<b>Total</b>	<b>150,000</b>	<b>55,510</b>	<b>4,740</b>

<sup>2</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

**ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

**NA**



**FAO/GLOBAL ENVIRONMENT FACILITY  
PROJECT DOCUMENT**



<b>Project title: Adapting Agriculture to Climate Change in The Gambia</b>	
<b>FAO Project Symbol: GCP/GAM/033/LDF</b>	
<b>Recipient Country:</b> The Gambia	<b>Resource Partner:</b> Global Environment Facility (GEF)
<b>FAO Project ID:</b> 622939	<b>GEF Project ID:</b> 5782
<b>Government/other counterparts:</b> Ministry of Agriculture (MOA), Department of Agriculture (DOA), Department of Livestock Services (DLS), National Agriculture Research Institute (NARI), National Environment Agency (NEA), Department of Water Resources (DWR)	
Expected OED (Starting Date): June 2016	Expected NTE (End date): May 2020
<b>Contribution to FAO's Strategic Framework:</b>	<ul style="list-style-type: none"> <li>• Strategic objective 2 (SO2): Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner. Organizational Outcomes 1 (output 1.1 and 1.2)</li> <li>• Strategic Objective 5 (SO5): Increase the resilience of livelihoods to threats and crises</li> <li>• Interim Country Programming Framework (CPF) Priority 3: Disaster Risk Reduction and Climate Change Adaptation</li> </ul>
<b>GEF Focal Area/LDCF/SCCF:</b> Least Developed Country Fund	
<b>GEF/LDCF/SCCF Strategic Objectives:</b>	
<ul style="list-style-type: none"> <li>• CCA1: Reducing vulnerability – Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level</li> <li>• CCA2: Increasing Adaptive Capacity: Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level</li> </ul>	
Environment impact assessment Category: A B C <input checked="" type="checkbox"/>	
<b>Financing Plan:</b>	
GEF/LDCF/SCCF allocation	USD 6,288,356
Co-financing	
FAO/GAFSP (FASDEP-TA)	USD 1,400,000
MOA/FASDEP	USD 14,880,000
MOA/WAAP	USD 12,000,000
MOA/H9200	USD 8,550,000
Sub-total Co-Financing:	USD 36,830,000
<b>Total Budget</b>	<b>USD 43,118,356</b>

## EXECUTIVE SUMMARY

The agriculture sector in the Gambia is characterised by small-scale, subsistence rainfed crop production (mainly groundnuts, coarse grains and rice) and traditional livestock rearing. Rainy season is increasingly uncertain and unpredictable in time and volume. Historical analysis of rainfall in the country shows that variability is even greater at smaller time scales and shows increased variability and declining trend in some regions. Annual temperatures have risen by approximately 1.0°C since 1960 and are expected to increase by between 1.1 and 3.1°C by 2060 (Second National Communication (July 2012) to the UNFCCC).

Changes in the climate-related hazards will negatively affect a range of sectors. Droughts, floods and increases in temperature reduce the ability to grow crops, as well as affecting other aspects of the value chain (e.g. drying/storage and transport to market). The inter-annual variability of yields is shown to increase in the absence of appropriate management strategies. Cattle production is constrained by scarcity of feed and water during the long dry season, aggravated by rampant bush fires which consume most of standing hay, crop residues and by-products to feed cattle. Non-availability of adequate feed during the dry season and poor management of grazing lands are considered major constraint to success of livestock sub-sector.

Institutional support services are affected by inadequate technical capacity to transfer appropriate technologies to address the impacts of climate change. Agribusiness, and agro-processing are not properly connected with production oriented support at the local level. Market opportunities are not easily known or accessed by small producers. Because of the complex challenges described above, the household food insecurity has exacerbated the prevalence of malnutrition which is particularly affecting the most vulnerable population in the country.

To address the challenges described above, the country has put in place a set of plans and measures, but this is not sufficient to address the impacts of increasing climate variability and climate change. To strengthen the Government's efforts towards better responding to the climate risks, the Ministry of Agriculture (MOA) has requested FAO to provide technical support on climate change adaptation. In response, FAO has prepared the LDCF project on Adapting Agriculture Sector to Climate change in line with relevant NAPA priorities and recent developments. The overall objective of the project is to promote sustainable and diversified livelihood strategies for reducing the impacts of climate variability and change in agriculture and livestock sector.

The project has 5 components: (i) Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector; (ii) Assessment of vulnerabilities and risks and dissemination of timely climate risk information to users at all levels; (iii) Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing; (iv) Enhancing resilience of rangelands by implementing improved management practices; and (v) Monitoring, Evaluation and Knowledge Management. The project will be implemented in three regions: Central River Region North (CRR-North), Upper River Region North (URR- North) and North Bank Region (NBR) covering 10 districts targeting at least 5000 HH involved in crop and livestock production. Emphasis is given to address issues at the local level aiming to reduce the vulnerabilities and enhance adaptive capacity. The project contributes to LDCF focal area objective CCA-1 on reducing vulnerability to adverse impacts of climate change including variability and CCA-2 on increasing adaptive capacity to respond to the impacts of climate change, including variability.

The executing partners of the project include: Ministry of Agriculture (MOA), Department of Agriculture (DOA), Department of Livestock Services (DLS), National Agriculture Research Institute (NARI), National Environment Agency (NEA) and Department of Water Resources (DWR). The total GEF LDCF financing of the project is USD 6,288,356 with an additional co-financing volume of USD36, 830, 000. The total duration of the project is 4 years between June 2016 and May 2020.

## ABBREVIATIONS

ANRP	:	Agriculture and Natural Resources Policy
ANRWG	:	Agriculture and Natural Resources Working Group
AU	:	African Union
CAADP	:	Comprehensive Africa Agriculture Development Programme
CBOs	:	Community Based Organizations
CPCU	:	Central Project Coordination Unit
CPF	:	Country Programme Framework
CRR	:	Central River Region
DLS	:	Department of Livestock Services
DOA	:	Department of Agriculture
DRR	:	Disaster Risk Reduction
DWR	:	Department of Water Resources
FASDP	:	Food and Agriculture Sector Development Project
FPCR	:	Food Crisis Response Core Program
FTS	:	Food Technological Services
GAFSP	:	Global Agriculture and Food Security Programme
GNAIP	:	Gambia National Agricultural Investment Plan
GNI	:	Gross National Income
HDR	:	Human Development Report
IPCC	:	Intergovernmental Panel on Climate Change
LDCF	:	Least Developed Country Fund
LHDP	:	Livestock and Horticulture Development Project
LRR	:	Lower River Region
MDFT	:	Multi-Disciplinary Facilitation Team
MICS	:	Multiple Indicators Cluster Survey
MOA	:	Ministry of Agriculture
MOECCWW	:	The Ministry of Environment, Climate Change, Water and Wildlife
MOTIE	:	Ministry of Trade, Industry and Employment
NAIP	:	National Agricultural Investment Plan
NAP	:	National Adaptation Planning
NAPA	:	National Adaptation Programme of Action
NARI	:	National Agriculture Research Institute
NBR	:	North Bank Region
NEA	:	National Environment Agency
NEMA	:	National Agriculture and Water Management Development Project
NEPAD	:	New Partnership for Africa
NRC	:	Climate and Environment Division
NTAT	:	National Technical Advisory Team
NTC	:	National Technical Coordinator
PMU	:	Project Management Unit
PSC	:	Project Steering Committee
PTF	:	Project Task Team
RAIP	:	Regional Agricultural Investment Plan
RTAT	:	Regional Technical Advisory Team
SCEDP	:	Sector Competitiveness and Export Diversification Project
SL/WM	:	Sustainable Land/Water Management
UNFCCC	:	United Nations Framework on Climate Change
URR	:	Upper River Region
WAAPP	:	West Africa Agriculture Productivity Programme

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## SECTION 1: RELEVANCE (STRATEGIC FIT AND RESULTS ORIENTATION)

### 1.1 GENERAL CONTEXT

#### A. General development context related to the project

**Location:** The Gambia, lying between latitudes 13 and 14 degrees North and longitudes 17 and 12 degrees West, is the smallest country on the African continent (Figure 1). It has a total area of about 11,300 km<sup>2</sup> of which 10 000 km<sup>2</sup> is land and 1 300 km<sup>2</sup> is water. The width of the country varies from 24 to 28 km and has a land area of 10 689 square kilometres. The population density is 174 persons per square km. The country has a Sahelian climate, characterised by a long dry season (November to May) and a short wet season (June to October). The country has an estimated population of about 1.8 million inhabitants.

**Economic development:** The Gambia is classified as a low-income economy country, with Gross National Income (GNI) per capita of US\$486 in 2014<sup>1</sup>. Low-income economies by World Bank Classification are countries with a GNI of less than US\$ 1 025. In 2014, the Gambia was ranked 172 out of 187 in the United Nations Development Programme's Human Development Report (HDR). The main drivers of economic growth for The Gambia remain the agriculture sector and tourism industry<sup>2</sup>.



Figure 1: Location map of The Gambia with regions

**Agriculture:** The agriculture sector is characterised by small-scale, subsistence rainfed crop production (mainly groundnuts, coarse grains and rice), small-scale horticultural production and traditional livestock rearing. Agriculture has the potential for even greater levels of production and productivity given that only about 54 percent of the total arable land resources of the country are under cultivation<sup>3</sup>, and for all crops and livestock, national average per unit yields are still significantly below their potential

<sup>1</sup> Country Classification July 2014 World Bank

<sup>2</sup> Programme for Accelerated Growth and Employment (2012-15)

<sup>3</sup> GoTG. 2009. Agricultural and Natural Resources (ANR) Policy (2009-2015)

and could be increased. Agricultural output is generated by roughly 70 000 farming households on 57% of the arable land.

Agricultural production is overly reliant on one season rainfed agriculture from June to October. Rains are increasingly uncertain and unpredictable in time and volume. Soils in Gambia are generally poor in organic matter and chemical fertility, requiring high inputs of manure and fertilizers to increase yields. Extension services are affected by low levels of skills and knowledge to transfer appropriate technologies or provide much needed advice and information to producers, in investment and management of their enterprises. In addition, relatively high incidence of pests and diseases in horticultural crops, staple food crops and livestock, significantly reduce production and quality of the commodities, and minimize the profit.

Agribusiness: Agribusiness, agro-industries, agro-processing sub sectors are characterized by numerous smallholder (household) entities using low input technologies and labour intensive systems. Market opportunities are not easily known or accessed by small producers. Infrastructure such as warehouses for bulk storage and handling that increase profit margins are very limited or absent. Relatively high transport costs from production to market areas are also a major disincentive to agricultural producers and traders. Financial services, particularly credit is not easily accessible to small and medium scale producers.

Livestock: Livestock production is carried out nationwide by practically all rural households, but ownership of large ruminants is more concentrated. Cattle totalling about 300 000 head are the most valuable assets in the livestock sub-sector, closely followed by small ruminants comprising sheep (160 000) and goats (230 000). It is estimated that small-scale producers raise some 700 000 birds, representing 90% of the national poultry flock.

The production costs of livestock, particularly poultry are relatively high compared with imports. This results in low level of motivation for domestic production and inefficient input supply systems. Cattle production is constrained by the scarcity of feed and water during the long dry season, aggravated by rampant bush fires which consume most of the standing hay and crop residues that provide cattle feed. The non-availability of adequate feed during the dry season and the poor management of grazing lands are considered major constraints to the success of the livestock sub-sector.

Rangelands: Gambian rangeland systems cover an area of 400 000 hectares, that is, approximately 40% of The Gambia's total area. The Gambia's rangeland system consists of natural vegetation cover (grasses, shrubs and woody plants) and agricultural lands. Crops are cultivated on the agricultural lands during the wet season and animals graze on crop residue left behind after harvesting. The natural vegetation cover is used for grazing throughout the year. Outside of agricultural lands, rangelands are characterised by poor drainage, rugged topography and often, low soil fertility.

Institutions: The institutional framework for the collection, analysis and dissemination of information about disaster management and food security early warning systems are in place. However, these institutions lack adequate resources and the limited staff in them lack adequate knowledge and skills to successfully deliver the important mandates of these institutions. Those that provide investment information, research and extension are also weak in quantity and quality and are limited in resources to perform their expected tasks. The private sector operatives are few and not strong and tend to be risk averse which results in low investment in the agricultural and food sectors.

Food security: Food insecurity is high on the government agenda as The Gambia remains heavily reliant on food imports. Since 2010 there have been a number of shocks (principally flooding, drought and economic stagnation) which have undermined the ability of vulnerable poor communities to withstand further shocks. There has also been an increase in the number of irregular migrants, particularly youths, leaving the country. This has resulted in labour shortage for farming activities, especially during peak periods in the agricultural production cycle.

The Gambia Demographic and Health Survey (DHS) 2013 showed that 24.5 percent of children under five were stunted. Worryingly, wasting among children under five has also significantly worsened from a rate of 6.4 percent (MICS 2005) to 11.5 percent (DHS 2013). These poor nutrition outcomes were largely attributed to (i) reduced food availability and coping strategies during the lean season (from June to September), (ii) inadequate food utilization, (iii) limited knowledge of nutrition and (v) poor health status and hygienic practices.

Because of the challenges described above, ranging from climate change impacts, weak agriculture support services and non-availability of relevant data and information, the weak capacity of farmers agricultural production and the incomes of farmers and traders and other actors in agricultural value chains remains low. These are key contributors to the prevalence of acute and chronic malnutrition which particularly affects children and pregnant and lactating mothers.

## **B. Climate change vulnerability and problems the project will address**

Climate Trends: According to the fifth assessment report of IPCC (AR5), Africa is the continent expected to suffer the most under climate change, both due to expected increases in climate hazards and its already high vulnerabilities to those hazards across a range of sectors. Gambia as a Least Developed Country (LDC), is among the most vulnerable to the impacts of climate change. These vulnerabilities span many sectors, livelihoods and assets within each sector. The agriculture sector including livestock is one of the most exposed sectors to increasing climate variability and change.

In the Gambia, climate records indicate unequivocal negative changes in the last forty years. Analysis of rainfall in the central part of the country shows that variability is even greater at smaller time scales. Corroborating stakeholder perceptions, statistical analyses of rainfall confirm a decline in rainfall; shorter season; and, increased inter-annual variability as the most important climate risks faced by farmers. Annual temperatures have risen by approximately 1.0°C since 1960 and are expected to increase by between 1.1 and 3.1°C by 2060. According to the Second National Communication (July 2012) to the UNFCCC, statistically significant trends in historical rainfall indicate decreases during the main rainy season from July to September. Future projections of potential evapotranspiration suggest a likely increasing rates with a range of 2% to 45%.

Impact on crops: Changes in the above climate-related hazards will negatively affect a range of sectors and consequently people's livelihoods if effective adaptation measures are not adopted. Of particular concern is the agricultural sector which is an important component of the economy and forms the basis of the livelihoods of more than two thirds of the population. Most farmers and agro-operators are already vulnerable to food insecurity and poverty. Thus increasing incidences of poor agricultural seasons will drive and keep more people in poverty as their ability to recover from climatic and other shocks diminishes over time. Indeed this was manifest throughout the country with the drought of 2011 and followed by floods in 2012, and again the drought of 2014 followed by floods in 2015 that affected significant portions of the country.

Droughts, floods and increases in temperature and variability intra-seasonal rainfall distribution all adversely affect productivity and production, as well as other aspects of the value chain e.g. drying/storage and transport to market. Reports suggest that there will be a 40 per cent drop in groundnut yields due to rising temperatures<sup>4</sup>. The inter-annual variability of yields is shown to increase in the absence of compensatory management strategies, including the introduction of varieties that may be more drought tolerant and better suited to hotter conditions. Additionally, the disappearance of freshwater swamps and soil salinisation in lowland areas is likely to impact negatively on rice production. Elsewhere, intensive cropping and/or shorter fallow periods threaten soil fertility and the natural resource base.

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<sup>4</sup> AIACC (2006). Making Economic Sense of Adaptation in Upland Cereal Production Systems in The Gambia. AIACC Working Paper No. 37 August 2006.

**Impact on livestock:** Higher temperatures and humidity have measurably adverse impacts on small ruminants (i.e., goats and sheep), which make important contributions to household economies. The result of intense climatic stress on free grazing small ruminants include: significant reduction in milk yields; slow growth rates; decreased reproductive rates and increased mortality rates. Increasing temperature and humidity are also expected to have a negative effect on food intake of birds, thus reducing the productivity of poultry. However, animals can be economically protected from intense climatic stress by providing adequate shelter and cooling systems. Notable adverse climate that indirectly impacts animal production include the rapid spread of animal diseases and thermophilic vectors/hosts, and increased cost of processing and marketing animal products.

**Rangelands:** The detrimental impacts are not limited to crop yields, but extend to livestock, fisheries and food security as a whole. Grazing land that has lost its productive capacity is unlikely to retain the rural workforce who may migrate to urban areas in search of alternative/non-farm livelihoods. In contrast to crops, research into climate-livestock interactions is more sparse and fragmented, and focuses more on rangeland productivity. According to the Second National Communication (2012), a 29 to 40% drop in live biomass, depending on species considered, is expected to accompany projected climate changes by middle of the century.

Climate change will also change species composition, which may complicate net impact. Water and heat stress in particular are expected to take a heavy toll on perennials and shallow-rooted forage species in rangelands. The dominance of heat- and drought-tolerant wild species could lead to further loss of agricultural biodiversity. In a cattle-raising system largely based on extensive common land grazing, a decline in fodder availability and quality is expected to translate into loss of animal production.

**Target regions and districts:** The problems associated with climate change are most severe in the semi-arid, Sudano - Sahelian zone of the country, which constitutes about 75% of the total land area in the country. The project preparation phase prioritized three regions (covering 10 districts) falling under the semi-arid zone for investments (Table 1 and Figure 2). The specific climate impacts on agriculture, livestock and rangeland systems are provided in Table 1 below. The regions are ranked on top in-terms of vulnerability to increased climate variability and change both by the NAPA processes and also the Second National Communication to the UNFCCC. Changing cropping patterns and un-sustainable agricultural, livestock and rangeland management practices have been primary agents contributing to loss of livelihoods in all three regions.

Impacts of climate change on small-scale agriculture systems and livestock grazing systems threaten the production base and livelihood of the selected regions. It is perceived that impact on livelihoods and land-based resources are considered as the core of the problem. Additional problems contributing to the vulnerability include limited cropping options during the rainy season, decreasing vegetation cover, bush fires, encroachment on the remaining grasslands, declining soil fertility, and over-exploitation of the rangelands.

Livestock husbandry practices of traditional herdsmen (overstocking of livestock, overgrazing and depletion of accessible water resources) have contributed to increasing the vulnerability of rangeland resources to climate change impacts. Livestock owners keep large herds for reasons of strong wealth social status and prestige thus over-utilising available grazing resources. The combination of individual ownership of animals and communal ownership of land leads to overexploitation of rangeland resources.

Table 1. Target regions, districts and associated climate impacts on agriculture and rangeland systems

<b>Region</b>	<b>Number of target districts</b>	<b>Name of District</b>	<b>Impacts of Increased Climate Variability and Climate Change on agriculture and rangeland systems in the selected regions</b>
Central River Region	3	Lower Saloum Niani	Agricultural production in Lower Saloum, Niani and Sami is becoming increasingly unsustainable because of recurrent floods and droughts. The livestock population

North (CRR-North)		Same	density is among the highest in the country. As a result of extended dry seasons livestock grazing is becoming a challenge. It became clear from consultations with communities in CRR North that as much as 90 to 95% of the population who are engaged in agriculture and animal husbandry make tough choices in keeping up with changes in rangeland and agricultural productivity as a result of climate change. The amount of productive land has significantly reduced as a result of climate change. This situation constantly brings crop growers and cattle herders in competition for productive land
Upper River Region North (URR-North)	2	Wuli Sandu	In high elevation frontier areas of Wulli and Sandi dominated by shrub savannah, erratic rainfall and higher temperatures constrain the survival of annual species for animal grazing. Habitat loss compounded the threat to many plant species for animal grazing. Torrential and unseasonal rains as well as flash-flooding take a heavy toll on agricultural production and productivity. In general, inter-annual variability of crop yields is threatening.
North Bank Region (NBR)	5	Upper Niumi Jokadu Lower Badibu Central Badibu Sabah Sanjal	Agricultural production and productivity in this region is severely affected by salt intrusion and degradation of the mangrove swamps and range resources. The impacts of erratic rainfall and high temperatures which limit groundwater recharge and availability of water sources are manifested in the crop and livestock production systems of the region. Recurrent droughts resulted in early drying of natural ponds which serve as livestock drinking point. As a result of climate change, open grazing may no longer be sufficient to maintain the quality of animals, requiring interventions for supplementary grazing.

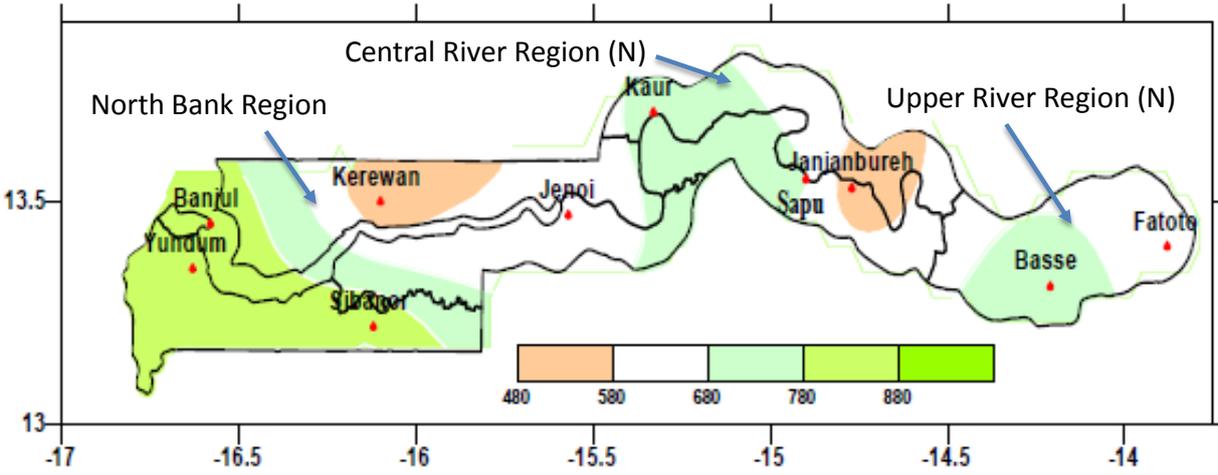


Figure 2. Project target regions and rain gauge stations with spatial rainfall pattern in the Gambia

**C. National Planning and policy framework**

Vision 2020: The current development policy framework is articulated in Vision 2020, which seeks to transform the nation into a dynamic, middle-income country, socially, economically and scientifically, over a 25 year period. It is being executed in a series of 5 year plans. The Programme of Accelerated

Growth and Employment (PAGE), which seeks to improve economic growth and human development through five pillars: i) accelerating and sustaining economic growth ii) improving and modernising infrastructure iii) strengthening human capital stock to enhance employment opportunities iv) improving governance and fighting corruption and v) reinforcing social cohesion and cross cutting interventions which encompass 10 issues, among these food security, disaster risk reduction and climate change.<sup>5</sup>

Programme for Accelerated Growth and Employment (PAGE): Adaptation plans and investments are direct outputs of UNFCCC processes. There has been a small level of integration of adaptation strategies into regular policies, plans and funded programmes in line ministries, mainly in PAGE, that operationalizes the Vision 2020 strategy, where climate change is recognized as risk to the growth and development of the country. PAGE indicates that because of the special conditions in The Gambia such as its small size, its hydrological and bio-geographical systems, its economic structure and development status and the key role weather and climate play in its physical, social and economic vulnerability, is particularly important that the Government mainstream climate change into its development policies and programmes.

An updated National Disaster Risk Reduction and Management Policy was approved by Cabinet in 2013. It provides an overall guiding framework for addressing the high levels of disaster risks in The Gambia, covering both natural and human-induced hazards, noting that adaptive capacity to withstand or cope with these events is low, and future disasters and climate change threaten to erode it further. The key issues are noted in the DRR/M Policy are poor and inadequate settlement patterns, inadequate drainage systems, capacities to address disaster issues at the local level and poor early warnings. Critical gaps and constraints are indicated as being low resilience of infrastructure and facilities, lack of appropriate building codes and land use planning.

The DRR/M policy also recognizes challenges related to low levels of risk awareness, knowledge and capacity to plan for disaster risks. The DRR/M policy includes three broad areas of intervention to improve i) risk knowledge ii) prevention and mitigation of disasters, and iii) preparedness and response. Specific measures mandated that are relevant to the NAP process are integrating DRR into development planning, put in place regulatory frameworks to promote DRR (land-use plans and building codes; build resilience of agriculture and food security systems, and promoting the use of science and technology for evidence-based decision making).

Other policies where climate change has been mainstreamed is the Gambia National Agricultural Investment Plan 2011-2015. But climate change as an issue is missing in the national strategy document: Vision 2020 - and it has limited treatment in the 2007 PRSP II. And even where climate change is recognized and adaptation priorities are scoped out, the ensuing gaps are planning and implementation related, for example, designing effective implementation strategies and tracking the extent to which the adaptation are effective, by how much, the extent to which it justifies the financing and where improvements should be made.

Since 2002 the Government of The Gambia (GoTG) has started a process of local government reform and decentralization with the objective of bringing decision-making closer to the local level and to enhance opportunities for local development. Village development plans are aggregated into Ward Development plan, which are in turn aggregated into Municipal/Local Area Council Development Plans, which are aggregated into Regional plans. The village and ward committees needs support to mainstream climate change into their development plans, and the role of the Regional Technical Advisory committee (TAC), formed of different Ministry representation, and its sub-groups such as the Regional Multi-disciplinary Facilitation Teams (MDFTs) are important.

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<sup>5</sup> UNDP-UNEP Initiative on NAP-GSP (2015) Gambia National Adaptation Plan Process. Stocktaking report and a road map for advancing Gambia's NAP process. Draft Final Report (20 July 2015)

Agriculture and Natural Resources (ANR) policy 2009 – 2015: The vision of the ANR policy is a robust, market-oriented, commercialized, competitive ANR sector that is directly aligned with the macro-economic framework of the country, contributing measurably to shared, inclusive and sustainable poverty reduction and economic growth in the Gambia. The ANR policy indicates that the sector produces about 50% of national food supplies using about 54% of the country's arable land resources. It contributes about 30% to the country's GDP and employs over 70% of the active labour force. Climate change is recognized as an issue in the ANR policy as the contribution of the agricultural sector to carbon emissions. The ANR sector has the potential to contribute to the nation's growth, for example, increased production of coarse grains, rice, groundnuts and horticulture as well as the commercialization of livestock enterprises, agro-processing and fisheries. Follow-up to ANR policy is expected to have similar focus and in-line with the vision 2020.

The Gambia National Agricultural Investment Plan (GNAIP) 2011-2015: The medium term plan to achieve the ANR vision, and follow up to the GNAIP is yet to start in a more systematic way. It aims to achieve an eight percent growth in the agricultural sector and this, combined with non-agricultural growth, is expected to transform rural economy and significantly reduce poverty levels. The GNAIP has six strategic programmes including land and water management; improving food security; improving management of shared resources; development of agricultural value chains; and improving farm management. Climate change is recognized as a cross cutting risk to the GNAIP and with specific relevance to improving farm management. The GNAIP recognizes the inter-connections between recurrent droughts and climate change and baseline stresses such as deforestation, soil degradation and increasing shortages of land due to population pressure.

The vision of the National Rice Development Strategy (NRDS), 2014, is self-sufficiency in rice production' by the year 2024. The over-arching objective of the NRDS (2015-2024) is the creation of a market-led, commercialized, efficient, competitive and dynamic rice industry which maximizes enhancement of food security and poverty reduction. Based on equal emphasis on intensification in both upland and lowland production systems and expansion of lowland production systems the NRDS is projected to achieve a production scope and target of 322 600 tonnes of milled rice in 2024. During the 2001/02 – 2010/11 decade, paddy production increased as result of Government-led investment programmes.

The increase in cultivated area under rice is derived from expansion in upland rice cultivation made possible by the introduction of NERICA rice varieties. Lowland ecologies have greater potential for rice production although their cultivation is constrained by low and poor rainfall distribution and poor water management and control structures. The overall strategic orientation of the NRDS will entail six sets of strategic actions, some of which will be affected by climate change, though not explicitly acknowledged in the Strategy. These actions are: i) land development, irrigation development and paddy production; ii) Post-harvest losses handling; iii. Processing and Marketing; iv) seed development and varietal improvement; v) rice production inputs supply distribution; and, vi) Pests and disease management.

Gambia Sustainable Land Management Investment Framework (GAMSIF) 2016-2020: The overall goal of GAMSIF is to mainstream and scale up SLM to secure ecosystem services and improve rural livelihoods. In this regard, the GAMSIF is aimed at reversing the trend of land degradation; improving land management and agricultural productivity and natural resource-based livelihoods by scaling-up and mainstreaming SLM and natural resource management in the development framework of The Gambia. The GAMSIF has been prepared as a precursor to a full country SLM investment framework which will be prepared during the implementation of the GAMSIF.

The GAMSIF is synchronized with the Government's Vision 2020, and the PAGE (2012-2015), and is a major step in implementing the Government's National Action Programme to combat desertification. The GAMSIF is also consistent with regional and international initiatives, including the AU's NEPAD Comprehensive African Agriculture Development Programme, and Economic Community of West African States (ECOWAS) Agricultural Policy. It has four components: 1. supporting on-the-ground activities for scaling-up SLM; 2. creating a conducive enabling environment for SLM; 3. Strengthening

commercial and advisory services for SLM; 4. Developing effective SLM knowledge generation and management, M&E and information dissemination systems

The intended implementation of the Gambia Sustainable Land Management Investment Framework (GAMSIF) policy at the local government level can have synergies with the LDCF project. At the Regional level, the GAMSIF will be implemented by the Regional Agricultural Directorates (RADs), in partnership with the Technical Advisory Committee, the Multi-disciplinary Facilitation Teams, and Village Development Committees. The implementation of the GAMSIF at the District level will be spearheaded by the MDFTs and Village Development Committees (VDC), who will mobilize local communities (grassroots) to implement Sustainable Land Management (SLM) programmes and projects.

The 2007 National Water policy establishes a sustainable and inclusive framework for managing The Gambia's water resources based on Integrated Water Resource Management (IWRM) principles as well as the promotion of an enabling legal and institutional framework which balances short-term gains with long-term socio-economic benefits and that accommodates a range of users including ecological requirements. In 2008, the African Water Facility began supporting the establishment of IWRM framework in three key areas: institutional development including a new water law updating the 2004 Water Bill; human resources development; and improving the water resource data and knowledge base.

In terms of gender equality and empowerment, the Gambia has a track record of a strong public policy on gender and women's affairs both regionally and internationally. Gambia was one of the first African countries to show commitment to gender as a public policy issue by establishing a Women's Bureau in 1980. The Women's Bureau and National Women's council established then have evolved today in what is the Ministry of Women's Affairs and the Women's Bureau, the institutions mandated to spearhead the implementation, coordination, monitoring and evaluation of the gender policy. In addition, the Ministry of Women's Affairs is the Vice President of the Country. Each ministry and decentralized structure (Region, District and Ward) is responsible for the identification of gender focal persons and establish gender units in its organization.

Gender equality is reflected in the 5th pillar of the Programme for Accelerated Growth and Employment (PAGE) 2012-2015, which is the successor to the Poverty Reduction Strategy Paper II, as a determinant of social cohesion. It is expected that the gender equality measures and creating an enabling policy framework based on proper gender analysis will have a prominent place in future policies and plans. Consideration to agriculture and agro-business should be the priority as these aspects will have an important role to play in empowering women because the sector provides the most available opportunities for women's income generation and wealth creation. Indeed, women comprise the largest share of the farming population, being particularly dominant in food crop production - both cereals and vegetables - and small scale agro-processing and marketing.

### **1.1.1 Rationale**

#### **a) Baseline projects (co-financing) and other investments**

To address the challenges described in section 1.1 (B), the country has put in place a number of policies and plans described in the previous chapter. To support these instruments several projects and programmes have been developed and are being implemented. These programmes have the potential to improve effectiveness by taking care of additional elements related to increased climate variability and climate change. The LDCF project will embark on four particular programmes and projects outlined below:

**Capacity development component of the Global Agriculture and Food Security Programme (GAFSP) (Jun 2013 – Dec 2018).** The GAFSP is a multilateral mechanism with the purpose of scaling up support to reduce poverty and improve food security by increasing agricultural productivity, linking

farmers to markets, and improving non-farm rural livelihoods. Specific objectives of the GAFSP in The Gambia are to increase food and nutrition security and household incomes particularly of vulnerable populations in three target regions with high food insecurity (West Coast Region (WCR), Lower River Region (LRR) and Central River Region (CRR)). FAO and AfDB have been designated co-supervising entities for GAFSP funds.

FAO-Gambia is responsible for the Technical Assistance (TA) Component and AfDB for Investment Components. FAO implements capacity development activities prioritizing: improved agricultural practices, and commercialization and improved approaches to nutrition and food security. Gambia was awarded a USD 28 million grant in May 2012 to implement the programme over a five-year period. The TA component provides capacity development support to all four components of the GAFSP: (i) Improved agriculture, land and water management, (ii) Smallholder agriculture commercialization to promote a market-led and private sector environment, (iii) Integrating improved approaches to food security is aimed at improving household food security and nutritional levels, targeting the most vulnerable groups and households, and (iv) Strengthening GNAIP coordination and management. The FAO TA component consisting of USD 1.4 million will provide co-financing to Component 1 of the LDCF project.

**Food and Agriculture Sector Development Project (FASDEP) of the Global Agriculture and Food Security Programme (GAFSP) (June 2013 – Dec 2018).** The component 2 on Agricultural production, diversification and commercialization (USD 10.928 million) and Component 3 on Improved approaches to national food and nutrition security and its sub-component 2 on building household resilience (USD 3.952 million) is directly relevant to the GEF project. The project is implemented by Ministry of Agriculture (MOA) through its Central Project Coordinating Unit (CPCU). The project seeks to reduce rural household poverty, food insecurity and malnutrition (stakeholders resilience), through increased agricultural production and productivity and commercialisation. The key outcomes will be: benefitting about 88% project beneficiaries (the vulnerable group women and youth), with reduced constraints hindering agricultural production and productivity. Through this project, the natural resources will be protected on a sustainable basis; market led private sector environment to foster smallholder commercialization promoted; and improved food security and nutritional status of vulnerable groups and households guaranteed. Total co-financing volume is USD 14.88 million.

The main outputs of the project include increased agricultural productivity and production through enhanced management of existing 3 000 ha and development of additional 200 ha under tidal irrigation; 155 ha of improved horticultural schemes and 60 ha of school gardens; 200 fish ponds, 25 small ruminant and 20 poultry schemes; 120 agro-business enterprises established and supported with 60% owned by women; 200 kilometres of access roads rehabilitated; 20 municipal market structures rehabilitated/constructed. All these have women and youth as principal beneficiaries (88%). Productivity level (per hectare) of the main agriculture enterprises is expected to increase as follows: Onion and Chillies growing from 6Mt to 10 Mt respectively; Cabbage from 15Mt to 20 Mt, tidal rice from 2.4 Mt to 6 Mt and tomatoes from 14 to 30 Mt. GEF investment will leverage infrastructure investments in access roads and markets, and will build on the project's capacity building efforts, especially in relation to community gardens adding particular emphasis on technologies and practices to enhance adaptation interventions in agriculture.

**West Africa Agriculture Productivity Programme** (is implemented in 6 countries in West Africa. The Gambia component is managed by **CPCU of MOA** from 2011 to 2020 with an IDA funding of USD 7.0 million and FPCR - MDTF funding of USD 5 million. The activities of the Component 1 on enabling conditions for sub-regional cooperation in the generation, dissemination, and adoption of agricultural technologies includes harmonizing national regulations at the ECOWAS level, establishing a national framework for technology generation and dissemination, knowledge management, information and communication, The Component 2 on national center of specialization/strengthening of the research system include upgrading core facilities and equipment, upgrading the capacity of researchers and development workers, Support to priority research programs. The component 3 on support to demand-driven technology generation, dissemination and adoption includes competitive

agricultural research grant scheme, support to technology transfer and promotion of sustainable seed systems. The total co-financing amount is USD 12.0 million. The GEF project will leverage the strengthened national agricultural research, knowledge management and information framework. The GEF project's focus on strengthening institutional and technical capacity as well as information system for agriculture adaptation to climate change will add value to the productivity enhancement approaches that are the focus of the WAAPP.

**Gambia Commercial Agriculture and Value Chain Management Project (H9200) (June 2014 – Nov 2019).** The proposed project supports interventions designed to help the agriculture sector improve productivity and build resilience against weather-related shocks, while improving market access to provide incentives for farmers to increase their agriculture productivity. The activities of the project are clustered around two main interlinked technical components: (i) support to development of irrigation and productive infrastructure and (ii) support to value chain development. The third component deals with coordination of project activities, and support to the Ministry of Agriculture for overall sector coordination, to facilitate the implementation of the country National Agricultural Investment Program (GNAIP). The project will focus on: (i) improving on-farm productivity through reduced weather related risks and production intensification; (ii) increase value addition and market access; and (iii) support institutional development for value chain integration/coordination by strengthening producer organizations and promoting/public private partnerships.

The total co-financing volume from the project is USD 8.55 million. This GEF project will leverage the capacity building and infrastructure development and market value chain strengthening supported by this co-financing project, as well as the efforts to increase resilience of farmers to weather-related shocks. GEF investment will bring added value by strengthening national and institutional and technical capacity, as well as information systems that will strengthen the efficacy of decision-making for agricultural adaptation to climate change.

## **b) Remaining barriers to address threats of climate change vulnerabilities**

The baseline projects will make a significant contribution to addressing some of the main challenges the country is facing. However, they do not adequately address the barriers listed below in view of climate change adaptation and improved livestock and rangeland management for food security.

Barrier #1: Insufficient institutional and technical capacity for adaptation to climate change in agriculture sector: The Second National Communication<sup>6</sup> under the UNFCCC in the Area of climate change, and desertification control conventions highlights the gaps in the enabling environment for effective climate change adaptation and sustainable agriculture. This capacity building need would require instituting appropriate institutional frameworks; providing training, education and technical supports in specialized fields relevant to climate change adaptation and also creating public awareness in climate change related issues. The thematic assessment further highlights gaps in skills for vulnerability and adaptation assessment. The capacity building needs include the ability to conduct in-depth assessment of the impacts of climate variability and future climate change and identifying and developing measures to adapt to future climate variability and change.

The low level of scientific and technical capacity constrain climate change adaptation. The training of Gambian agricultural experts is needed in specific aspects of the assessment of climate change impacts in agriculture, formulation of adaptation strategies, establishment of technology assessment and procurement facilities; and better collaboration among the agencies for implementation of climate change adaptation efforts. The decision-making processes for climate change adaptation in agriculture require appropriate information that assist policy- and decision-makers to arrive at well-articulated and

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<sup>6</sup> The Gambia's Second National Communication under the United Nations Framework Convention on Climate Change  
Banjul November 2012

relevant policies and plans that systematically integrates climate change concerns. Similarly, inadequate and weak research – development linkages in the agriculture sector reduces the transfer of technology from research to farmers. This capacity issue is common to both the agriculture and livestock sub-sectors.

Barrier #2: Inadequate data and information on vulnerabilities, risks and lack of communication of timely risk information to users at all levels (including farmers): Inadequate data and information on vulnerabilities, risks and lack of communication of timely risk information to users at all levels (including farmers) compromises effective decision-making and thus limits adaptation at the local and national levels. Inconsistent use of different information sources and lack of clear mandate for interpretation of climate information may lead to wrong decisions in the agriculture sector. There needs to be an official mechanisms for generating warnings that include communication between climate information providers and agriculture departments and communities where impacts are experienced.

There are official structures and processes in place, but they need to be strengthened. Further, there is a need to strengthen coordination and commitment/compliance by institutions (Department of Water Resources (DWR), MoA – DOA and DLS, and NDMA), with agreed processes for data collection, analysis, submission and dissemination of early warning information to users. There is insufficient capacity within the Ministry of Agriculture (MOA) to translate generic information into agriculture specific impact outlooks and alternate management plans. Without translation into information that can be easily understood by users, the information is unlikely to be used. It is also important to combine this information with known vulnerabilities and risks. There is a gap in terms of vulnerability assessment in agriculture and livestock sector at the local level.

Barrier #3: Heavy dependence of smallholder farmers on monocropping and lack of diversification and inadequate linkages between agriculture production, processing and marketing: Dependence of smallholder farmers on monocropping, and lack of diversification and livelihood opportunities, and inadequate linkages between agriculture production, processing and marketing is a barrier to advance adaptation. The farming practices are not implemented based on the seasonal rainfall prospects and thus erratic seasonal rainfall patters often lead to loss of crop. Rainfed agriculture is a major source of employment and livelihood in The Gambia.

Erratic rainfall patterns and increasing drought frequency are implicated in soil degradation, decline in production of traditional crops, deepening poverty and food insecurity of farming households. Direct effects of the rainy season characteristics lead to loss of soil fertility, lower production, and loss of household income. The farming households have evolved and still rely to some extent on operational changes in farming activities, spreading risks, sharing losses (kinship networks) and other risk management strategies (sale of assets, harvesting of natural forest food). All these efforts are ad-hoc and mostly reactive emergency mode and are not sustainable. In additional sustainability of these interventions depends heavily on the strong linkages between production, processing and marketing.

Barrier #4: Degradation of rangelands and loss of livelihoods depending on livestock enterprises: Climate impacts on rangelands constraints livestock rearing and poses a threat to rural livelihoods depending on livestock enterprises. Farmers' readiness for production-oriented investments into livestock is extremely low. It is against this background that donor interventions in the livestock sector have been few in the past when compared to other sectors. There is a clear need, especially for the Department of Livestock Services (DLS), to increase action-oriented and community based extension with a view to developing intervention packages. The technical interventions in livestock and range management are: agro-forestry, promotion of biological N-fixation multipurpose tree species, controlling of livestock traffic and livestock numbers, integration of livestock-crop farming and forestry, and sustainable land and range management. The objective should be to reduce the acute pressure on pastures and feed resources by better matching livestock requirements with the natural resource base and by increasing the efficiency of conversion of the natural resources into farmers' income.

**c) Additional cost reasoning (added value of the project in particular the GEF/LDCF/SCCF financing)**

The co-financing and baseline projects focus investments without explicit consideration to increasing climate variability and climate change. Building on the baseline projects, the LDCF project will strengthen the ongoing and planned programmes by addressing the impacts of increased climate variability and climate change. In light of this, the LDCF project will directly support the implementation of the key 2 priorities identified in the NAPA (priority 3 and 8): (i) promoting diversification of livelihood strategies and intensification of agriculture production, processing and marketing, and (ii) improved livestock production and rangeland management for sustaining livelihoods of local communities. These priorities will be complimented with cross cutting elements such as: (1) Strengthening of institutional and technical capacity of agricultural services to promote adaptation and (2) assessment of vulnerabilities, risks and dissemination of timely risk information to better plan crop and livestock management practices.

Improved livestock and rangeland management for food security and environmental sustainability. Emphasis will be given to address issues at the local level aiming to reduce the vulnerabilities and enhance adaptive capacity. To achieve adaptation benefits, the additional costs financed by LDCF will allow boosting the adoption of climate resilient agricultural practices, improving range-land management practices, increase capacity building, and support policies and programs to incorporate climate change adaptation and monitor the impacts of adaptation practices on natural resources. The project will specifically add value to baseline initiative as follows.

**Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector**

The interventions as part of the technical assistance component of the Global Agriculture and Food Security Programme (GAFSP) focus on capacity development to improve food security by increasing agricultural productivity linking farmers markets, and improving non-farm rural markets. The sub-component on capacity development covers training of smallholder Farmer-Based Organizations in aspects of agro-processing, business management and marketing, enabling their engagement in agricultural commercialization activities, as well as training of relevant government units including the Ministry of Agriculture (MOA) in market information and infrastructure management. The above baseline interventions are mostly related to strengthening of institutional and technical capacity related to regular production technologies. However, climate change adaptation aspects are not covered under this baseline project. The LDCF project will incorporate additional elements related to climate change adaptation, specifically promoting diversified climate-resilient livelihood strategies and crop and livestock production, processing and marketing of new varieties and crops in the GAFSP's interventions. For that purpose stakeholders involved need accurate training on CCA aspects that are relevant for the effective implementation of the GAFSP.

Additional LDCF financing from the project will therefore be used to strengthen the technical capacity in the Ministry of Agriculture (MOA) and its departments (DOA, DLS and NARI) at national, regional and district level on climate change adaptation, diversified agriculture strategies and rangeland management. This will be achieved by assessing training needs in crop and livestock sector and conducting need-based training programmes. Capacity development efforts will also target the district field offices and community-based organizations. To sustain the training programmes beyond the project cycle, the training curriculum will be integrated into the DOA and DLS regular/annual training activities. This project will strengthen the outreach programme of the food technological services to develop and introduce new value added products to complement crop diversification (Train staff from Food Technology Services (FTS) and Horticultural Technical Services (HTS) technical staff on processing and packaging). The LDCF resources will also be used to train local entrepreneurs on newly introduced practices and train them on financial and market linkages.

In addition, the quality control laboratory in National Environment Agency (NEA) will be improved to monitor the impacts of adaptation practices on natural resources. The additional activities will also include mainstreaming of climate change concerns into agriculture and food security policies and plans through support to facilitate National Adaptation Planning (NAP) Processes in agriculture sector.

**Component 2: Assessment of vulnerabilities, risks and dissemination of timely risk information to users at all levels**

Information about vulnerabilities, risks and impacts on agriculture systems needs to be made available for better adaptation planning. Assessment of vulnerabilities and impacts and provision of early warning for food security in the Gambia are crucial. Currently, the Multi-disciplinary Working Group led by Department of Water Resources (DWR) is providing a monthly early warning bulletin for food security in the Gambia. The report covers synoptic situation, rainfall situation, outlook for the following dekad, agro-meteorological situation, and agricultural situation. The usefulness of this Early Warning Information needs to be improved by incorporating new tools and methods.

The technical assistance under this component of improving early warning for agriculture will be cost effective and timely if implemented urgently in coordination with GEF/LDCF/UNEP project on “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change - 2nd Phase” being implemented with the Department of Water Resources (DWR). The current level of expertise on tools and methods for risk and vulnerability assessment and methods of crop monitoring are not sufficient for designing location specific adaptation practices. Further, the risk and vulnerability assessment conducted for preparation of Second National Communication is not sufficient to plan for adaptation in the agriculture sector. Similarly, due to lack of technical capacity this was not conducted for the third national communication to UNFCCC.

The customization of weather and climate information services for agriculture sector is constrained by non-availability of a National Platform for Climate Services in line with the Global Framework for Climate Services (GFCS). There is need to strengthen the User Interface Platform (UIP) between the Department of Water Resources and Ministry of Agriculture especially at the regional and local levels. Further, improved weather and climate forecast information dissemination for agriculture application at the local level is not sufficient in 3 selected regions of the country.

The additional activities under the Component 2 will be implemented in close coordination with the LDCF project on “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change – 2nd Phase of the GOTG/GEF/UNEP LDCF NAPA” and in close collaboration with Department of Water Resources. The LDCF resources will be used to improve application of climate services and early warning systems in agriculture and livestock sector by improving crop databases, tools and methods for vulnerability and risk assessment and define the hotspots of vulnerability focusing on crop and livestock production. The proposed project will improve the capacities of more than 20 staff in MOA, train them on assessment tools and methods through the training, to ensure sustainability.

The project, building on previous experiences, will improve the quality of Early Warning Bulletins for Food Security in The Gambia and facilitate its outreach within the Government institutions and local communities in all selected regions for on the ground decision making. It will also help establish a focal unit (limited trained experts) within the Ministry of Agriculture (MOA) at national level, to receive climate services and early warning systems and to communicate them to regional and district level offices and end-users (farmers and livestock herders). In addition, the additional activities will support to establish a national platform on climate services with a special emphasis on agriculture and food security. In addition, the additional activities will support to establish a national platform on climate services with a special emphasis on agriculture and food security. Close consultations with MOA and GEF agency of the GOTG/GEF/UNEP LDCF project is expected to ensure the sustainability of the unit after end of the project by provision of Government budget.

### **Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing**

The co-financing projects - Food and Agriculture Sector Development Project (FASDEP) of the Global Agriculture and Food Security Programme (GAFSP), the West Africa Agriculture Productivity Programme (WAAPP) as well as the Commercial Agriculture and Value Chain Management Project (H9200), all focuses on the improvement of agricultural production and commercialization and improving post-harvest practices and expanding market opportunities in order to increase smallholder household incomes. In partnership with the technical services of MOA, a package of interventions to support sustainable intensification of smallholder's crop production is proposed through Farmer Field Schools.

This baseline project is in line with the priorities of the Government and some activities are relevant to priorities identified under project 3 of the NAPA. However, these activities have not explicitly considered climate related risks and vulnerabilities and suitable diversification and intensification practices. Additional efforts are required to address the needs of local communities considering climate risks and vulnerabilities in a comprehensive manner. Interventions under the proposed LDCF project will be tailored to address the immediate risks of climate variability and also considering future impacts of climate change.

Without LDCF resources, adaptation practices to be implemented at the local level through the above baseline project may not match the climate related risks and vulnerabilities explicitly. Community-based stakeholders also need awareness-raising on climate change adaptation practices in agriculture. With LDCF resources, it would be possible to strengthen the baseline project initiatives considering the impacts of climate variability and climate change. The resources will therefore help to strengthen the baseline project and systematically package tested adaptation practices and new stress-tolerant varieties of crops and promote diversification of integrated livelihood & income generation practices and intensification of agriculture production, processing and marketing.

The additional activities aims to promote diversification of livelihood strategies in line with vulnerability and climate change projections and intensification of agriculture production systems to better manage climate risks and vulnerabilities, processing and marketing to enhance the effectiveness of baseline project activities. Additional activities will include introduction of innovative and location specific vegetable garden models in 10 most vulnerable communities in 10 districts for increasing their resilience. It is expected that the proposed interventions will increase the level of income by 30% benefitting 2 500 households (20 000 individuals). In addition, the diversification strategy will include the introduction of drought tolerant *findi* (hungry rice), sesame, traditional and industrial cassava and also bee keeping to promote income opportunities for rural women. Complementary strategies will include vegetables processing, as well as *findi* processing where feasible.

Primarily, bee keeping at household level will be promoted as an alternate income generation activity for women. Nonetheless, this practice is climate-resilient and can reduce the risk of bush fire during extended dry conditions mainly caused by breaks in rainy season. The local communities often make fire to drive honey bees while honey collection and during dry season this often lead to widespread bush fire and causes extensive damage to livelihood assets. Bee keeping at household level can reduce unsustainable honey collection from the forests by making fire. Honey bees are efficient pollinators in a number of crops and bee keeping at household level can improve pollination in field crops and thereby increased yield and production could be achieved. Similarly, there are activities that promote sustainable crop intensification that consider climate risks and vulnerabilities; and these practices include: promoting dual purpose grain legumes, certified seed production of flooded rice, drought- and salt-tolerant varieties of crops, evaluation of varieties of tomato and onion for rainy season, water harvesting, and additional area under cropping through tidal irrigation.

The LDCF interventions will also benefit from the recently completed "The Gambia's Livestock and Horticulture Development Project" that focused on reducing rural poverty by raising the incomes of

rural producers. The focus is to improve the returns from horticulture and livestock production, and build capacities at the grassroots level. The project targets production, processing and marketing of livestock and horticultural products at the community level. Specific interventions include small ruminant and poultry production and marketing and value-chain integration/upscaling (e.g. to address small blockages in value chain and/or upscale promising technologies). The LHDP project also focuses on provision of better extension services and promoting locally relevant production and livestock management practices and group entrepreneurship development. The major weakness is that these practices are not directly addressing climate related risks to livestock sector as articulated in NAPA priority project 8 that is relevant to this component. It is necessary to facilitate a location specific process to promote implementation of improved management practices for poultry and small ruminants for enhancing adaptive capacity and sustainable income generation.

Additional activities of the project will focus on improving poultry, small ruminants and cattle production considering the risks of climate variability and climate change. Additional activities will focus on local community groups to enhance effectiveness and for wider dissemination. In that respect, the poultry producers associations in 26 districts will be strengthened on technical support to and by strengthening by-laws and locally acceptable rules and regulations for provision of drinkers, seeders, chicken wires to 1000 farmers and provision of 5000 cockerel from Department of Livestock Services (DLS) to improve genetic material so as to match the climatic risks. Disease control measures will be strengthened to benefit 400, 000 poultry birds in selected villages through better vaccination. The resources will also be used to strengthen local entrepreneurship to promote hatchery. Additional activities also include strengthening of The Gambia Indigenous Livestock Multiplication Association (GILMA) to control endemic diseases and this will benefit 400,000 small ruminants in 4 regions.

#### **Component 4: Improving rangeland management practices to increase access of livelihood assets and to sustain sources of income of livestock dependent communities**

Under Component 1 (Improved agriculture, land, water and nutrient resources management) of The Global Agriculture and Food Security Programme (GAFSP) activity 6 focuses on (i) capacity building of communities in sustainable soil and water management techniques and capacity building on agro forestry, rangeland management and biodiversity conservation techniques using farmer field school approaches. The outcome of the capacity development at the local level should be complimented with on the ground implementation of the technologies and practices that are promoted by the GAFSP. The baseline activity will therefore be linked to the project's expected Output 4.2 on improved rangeland management interventions which will benefit from the capacity generated by GAFSP at the community level.

Improved production and management practices will be carried out to improve vegetative cover and to sustain livelihoods of livestock dependent communities. This includes establishment of "deferred" grazing areas in 10 sites + planting of multi purpose leguminous tree species (10 intensive feed gardens). Livestock watering points (surface ponds) are necessary to support the most vulnerable communities. Tree intensive feed gardens will protect the natural assets and provide necessary livestock fodder during the dry season. Demarcation of cattle tracts are planned to increase cattle access to feed during rainy season and reduce over grazing during the dry season. Re-seeding with multi-purpose livestock grass/legume species (e.g Panicum, Andropogon, Stylosanthes, Cenchrus) is expected to improve natural assets of the livestock dependent communities.

Improved management of livelihood assets to sustain livelihood activities of livestock dependent communities will improve grazing areas, multi-purpose leguminous tree species and improve water storage capacity of the grazing lands and innovative tree intensive feed gardens. Support to demarcate cattle tracts will increase cattle access and reduce over grazing during the dry season. The intervention will promote regeneration of vegetation through the adoption of new practical silvi-cultural practices and improved management of grazing lands that in turn will improve the productivity of rangelands.

#### **Component 5: Monitoring, Evaluation and Knowledge Management**

The performance monitoring will rely essentially on the project M&E system. The M&E system will specify the impact, outcome and output indicators, the activities to be performed, the methodology, and clarify the roles and responsibilities of partners and stakeholders. The monitoring and evaluation system will include outcome and output indicators of the Adaptation Monitoring and Assessment Tool (AMAT) relevant to LDCF objectives 1 (reducing vulnerability) and 2 (increasing adaptive capacity)..

The impact of adaptation practices and improvement of adaptive capacities and livelihoods, will be assessed through surveys (farmer groups and households) and will be compared against the initial baseline scenario. Best climate change adaptation practices will be screened based on the indicators: environment friendliness, potential to reduce the impacts of climate risks, economic viability, sustainability, social acceptability, gender sensitivity, income generation, enterprise diversification, seasonal relevance and community's need. The GEF funds will be used to carry out a mid-term evaluation/review and a final evaluation, and to disseminate good practices and lessons-learned for up-scaling by the partners and stakeholders.

### **1.1.2 FAO's comparative advantage**

The FAO Country Representation in the Gambia was established in 1978 to contribute to the fulfilment of the stated mandate in collaboration with the Government and other relevant stakeholders. In the fulfilment of this mandate, FAO country Representation achievements in The Gambia have since 2005 have been evidenced by the 41 Technical Cooperation Projects (TCPs), 5 FAO Trust Fund projects, 5 OSRO funded Projects and Special Programme for Food Security (SPFS) and 22 Tele-food Mini Projects. These interventions have culminated in success stories comprising: enhanced institutional capacity for agriculture and natural resources management, enhanced production, processing and marketing capacity of producers/processors; introduction of aquaculture and capacity building for extension workers and smallholder aquaculture farmers and introduction of aquaculture in local community; improvement of livestock breeds; timely and appropriate emergency assistance to victims of natural disasters; improved and more supported sustainable and rational management of natural resources, increased stakeholder access to agricultural information and forged meaningful partnership and advocacy in the fight against hunger and malnutrition.

The Country Programme Framework (CPF: 2012 - 2015) was implemented in partnership with stakeholders particularly the Ministries of Agriculture (MOA), Fisheries and water Resources (MOF & WR), The Ministry of Environment, Climate Change, Water and Wildlife (MOECCWW), multilateral and bilateral donors, UNDAF members, NGOs, farmer organizations and Civil Society Organizations (CSOs). The CPF has identified three priority areas for The Gambia: (i) Improved food and nutrition security, (ii) Agricultural productivity and commercialization, and (iii) Improved crop production and productivity. The project is closely linked to the priorities of FAO's just completed CPF in particular Outcome 3.2 on smallholder adaptation to climate change and is also closely linked to the interim Country Programming Framework (CPF) of 2016 -2 107 Priority area 3 on Disaster Risk Reduction and Climate Change Adaptation.

The project matches with FAO's comparative advantage in capacity development in agriculture and livestock sectors. FAO has been supporting the Gambia's efforts to develop more resilient agriculture systems and national food security strategies. Technical support will be provided locally from the national level expertise and also from the FAO Sub-Regional and Regional Offices in Accra, Ghana and from the climate impact and adaptation team of the Climate and Environment Division (NRC) in FAO headquarters. The project is directly related to FAO's strategic objective "sustainable management of land, water and genetic resources and improved response to global environmental challenges affecting food and agriculture" and organizational result "countries have strengthened capacities to address emerging environmental challenges such as climate change and bio-energy". The project integrates FAO's core functions encompassing elements such as monitoring, assessments, knowledge and information, policy advice, capacity building, communication, interdisciplinary approach and partnerships.

From the FAO perspective, food security is considered as a necessary pillar of climate change adaptation. FAO is best placed to provide the relevant multidisciplinary approach and divergent technical guidance necessary to analyse different vulnerable food systems to impacts of climate variability and change that enables designing adaptation practices. FAO is able to provide normative and field level support to this project through technical staff in headquarters and decentralized offices. The project fits into FAO-Adapt, which provide an umbrella to FAO’s adaptation activities, including short-term and long-term adaptation measures.

### 1.1.3 Participants and other stakeholders

There are number of stakeholders identified during the PIF preparation phase through national level consultations. The expected specific roles and responsibilities of the stakeholders were agreed during the PPG stage. The priorities and perspectives of the local communities and most vulnerable populations (e.g. women) are reflected into the project document. Their participation during the project implementation phase will be achieved by development and implementation of a detailed stakeholder and beneficiary engagement plan. The community mobilization expert will mainly focus on stakeholder engagement especially women, civil society organizations, indigenous communities and other relevant beneficiaries during the project implementation. FAO’s tools and methods for community mobilization for planning for adaptation<sup>7</sup> will be adopted to ensure inclusion of women and most vulnerable communities.

Table 2. Key stakeholders and their perceived roles

Key stakeholders	Role and responsibilities	Potential benefits
Ministry of Agriculture (MOA)	Lead national implementing partner. The MOA will be the chair of the Steering Committee and draw members from other ministries and its departments.	Improved capacity to contribute to climate change mainstreaming into the agriculture Policies and Plans
Ministry of Fisheries, Water Resources and National Assembly Matters	UNFCCC and NAPA focal point	Improved capacity and opportunity to incorporate climate change into relevant policy instruments
Ministry of Finance and Economic Affairs	Provision of funds for all government contributions into the project. Steering committee member	Improved understanding of potential negative impact of climate change events on national development and economic goals with respect to the Agriculture sector.
The Ministry of Environment, Climate Change, Water and Wildlife	Focal Ministry for MEAs (UNFCCC, UNCBD, UNCCD); Member of Project Steering Committee	Improved capacity in the implementation GEF projects and tracking of outcomes and outputs.
Ministry of Local Government and Lands	Steering Committee Member; advocate for policy support to climate risk reduction for local communities	Improved capacity to integrate climate change concerns in development issues at the local level
Ministry of Trade, Industry and Employment	Steering Committee Member, advocate for value addition, agribusiness and trade	Promotion of value addition and marketing for the drought tolerant crops and varieties to be introduced by NARI and MOA.
Department of Water Resources (DWR)	Main player in climate and weather data collection, monitoring, processing, analyses and translation into forecasts, outlooks, and early warnings.	Improved coordination of this project with the proposed LDCF project on “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change – 2nd

<sup>7</sup> E-learning tool on community based adaptation to climate change: <http://www.fao.org/climatechange/67624/en/>

Key stakeholders	Role and responsibilities	Potential benefits
		Phase". DWR is coordinating the work of NAPs.
Agricultural Communications Unit	Member of project coordinating unit and steering committee. Contribution to developing communication aspects of the project	Improved capacity for development and dissemination of risk information to all stakeholders in the country and also to the local communities through regional and local offices.
National Planning Commission	Steering committee member; Linking project goals with overall Government policy	Better incorporation of climate change concerns in agriculture sector into relevant policy instruments
National Environment Agency (NEA)	Steering committee member; strong participation in sensitization for sectoral climate proofing.	The output on "Strengthen the quality control laboratory in National Environment Agency (NEA) to monitor nutrition and chemical profiles of diversified crops and varieties" will be implemented by NEA.
Department of Agriculture (DOA)	Promoting livelihood diversification and intensification to farmers (crop & livestock), community mobilization, and local monitoring, compilation of feedback from farmers.	Enhanced capacity on climate change adaptation through training and learning by doing at the local level.
Regional Directorates of Agriculture (RDAs)	Coordinate the project implementation at the regional level as part of the Regional Technical Advisory Team.	Close engagement of RDAs ensures sustainability of investments at the local level. The RDAs will have the project monitoring role.
National Agricultural Research Institute (NARI)	Steering Committee Member. Advice on adaptation measures related to agricultural activities at project sites (planting dates, types of seeds, water harvesting, etc.),	Strengthening Research and Development linkages; Implementation of project activities relevant to stress tolerant crops and improved crop varieties.
Department of Community Development	Active participation in pilot studies on effective two-way communication	Improved understanding of climate risk reduction issues and delivery at community level
National Farmers Platform	Member of the Steering Committee; advocacy for increased project benefits to farmers.	Improved awareness and capacity in climate change adaptation.
Gambia indigenous livestock multiplication association (GILMA); Polutry Producers Associations	Active participation to facilitate implementation of the project activities to improve desired outputs.	Strengthening the capacity of local organization to better prepare to address the impacts of climate change locally.
Local communities (most vulnerable and ethnic populations)	Direct beneficiaries	In the North Bank, Upper River and Lower River regions, about two thirds of the population is poor. There are 8 main ethnic groups in the Gambia. The project will target most vulnerable populations (especially women and rural youth) and ethnic groups.
UNEP	Knowledge sharing based on experiences from GEF LDCF	Increased experience in implementing LDCF projects and coordination of activities to enhance complementarity.
UNDP	Steering committee member	Increased Inter-agency cooperation in assisting The Gambia in reducing vulnerability to climate change.
Action Aid	Advice on assessment of local needs and advocacy related to access and ownership of resources especially by Women.	Improving project's outputs and outcomes especially related to targeting of vulnerable communities.

#### 1.1.4 Lessons learned from past and related work including evaluations

Capacity Gaps in relation to climate change adaptation: Inadequate education, sensitization and public awareness, low level of community, Non-government organization (NGO) and private sector involvement in natural resource management, poor database for planning and monitoring, Low level of technology transfer, Inadequate negotiation skills and Networking are perceived as capacity gaps. The identification of capacity development needs in relation to the UNFCCC was carried out during the preparation of the 2nd National Communications and the inception of the Third National Communications, and can be summarized as follows: weak enabling environment for effective climate change management; lack of skills for vulnerability and CCA assessment; low level of implementation of adaptation measures; low level of scientific and technical capacity for effective climate change management; Inadequate national policy and decision-making processes for sustainable climate change management; Low national capacity for the diagnosis of climate change impacts; Inadequate, weak and ineffective research bodies and programmes.

Lessons learned on weather and climate information for agriculture sector: Under the UNDP-supported Early Warning Systems project (LDCF), capacity assessment reports on needs and challenges in development user-friendly meteorological decision-support tools noted the need to: integrate science-based climate information with socio-economic information and into community level decision-making. The information produced by DWR currently has spatial, temporal and socio-economic limitations and limited relevance to community level concerns. There are several priorities identified already that include: develop strategies for better ways of delivering meteorological products and services, translate early warning products into local languages, rehabilitate the hydrological monitoring network such as investments in hydrological data measuring stations and upgrade the climate monitoring network through investments in automatic weather stations.

Livelihood diversification and agribusiness: Experiences and lessons learnt from the past work showed that farmer organizations need to, first, excel on their core function of supporting members to improve productivity, production planning and marketing; and, second, have acquired the appropriate marketing and management capacities, before diversifying activities and resources into additional enterprises such as capital intensive value adding agro-processing technologies. Low cost value addition through organizational innovations is important to support diversification of livelihood and income generation. Value addition is also often synonymous with investments in high-value processing. However significant value can be added to raw produce without changing the physical form of the product by introducing activities including for instance, storage, cleaning, sorting, grading, packaging or labeling. Value can also be added by putting in place logistical, marketing and quality control systems that mostly involve strategic planning and cooperation with value-chain partners.

In past projects, attempts have been made to increase interest in value-added commodities, with value chain actors working towards the adoption of mechanized technologies in an effort to earn higher returns that are typically captured by upstream actors. The rationale was that significant value can be added by introducing activities including storage, cleaning, sorting, grading, packaging or labeling. As a consequence of putting in place enabling mechanisms, a growing number of MSMEs and emerging entrepreneurs demanded appropriate business management and skills training accompanied by well-defined credit products. The rejuvenation of the rural economy through an enabling business development environment and services led to increased production and offer of market driven entrepreneurial services. However, this was not accompanied by appropriate marketing support which led to the quick slow-down of the economic revival experienced under PRP.

Efforts to improve traditional extensive upland (rainfed) farming systems are seriously compromised. Barbed wire fencing on its own failed to block incursions by cattle, but live hedges protected them quite adequately and women in particular were often unable to handle land preparation, water-lifting, irrigation and crop transport using manual equipment. Training for diversification, processing and marketing is the priority. Up-to-date marketing information can be sought from the private sector. Farmers should be put in touch with hotels and other tourist outlets for the sale of fresh fruit and

vegetables. Where there are few or no markets for fresh produce, simple processing methods for tomatoes (sauces and purees), fruit (dried fruit and fruit juices) and vegetables can be propagated.

Simple and inexpensive processing techniques, for example for the preparation of sauces and juices, were not propagated and the need for up-to-date marketing information was neglected. MoA field staff with relevant expertise is in short supply. RFCIP failed to reach the poorest segments of the rural population but also admits that sustainability of village-level financial institutions requires a certain level of economic potential and capacity to save. The key missing elements in these projects is lack of linkage of research institute (mainly NARI) with the extension agents and farmers.

By processing miscellaneous fruits and vegetables the Njawara FO is able to produce and market over a longer time frame. Too many cases in which the equipment is not appropriate, for various reasons, including when poor-quality equipment breaks down rapidly. Support provided for food processing has often overlooked the issue of managing the processing units after they are put in place. Use of simple record keeping tools for processing activities or the formalization of simple planning tools for determining raw material or volume requirements for marketing purposes are virtually non-existent. The Sami Madina group which produces fonio (findi) now relies on a village transporter to convey the output to Banjul and market a portion of it.

Operational profitability and return on investment are rarely calculated and, when they are, too few beneficiaries have a real entrepreneurial vision of the new activities. Use of renewable energy for processing (in addition to drying) should be encouraged, in view of the short- and medium term utilization costs. Three years is clearly not a long enough period to obtain significant results in terms of sustainability.

Under MDG 1C *linkages with informal Micro Finance Institutions* (such as Village Savings and Credit Associations or VISACAs) have also proven vital to promoting agricultural production, processing and market linkages. *Direct involvement of the private and commercial sectors*, linking smallholder producers to markets have been highlighted in national policy as key lessons. In this regard, *contract farming* (e.g. *out-growing schemes*) has yielded overall good economic and social returns throughout West-Africa.

The success of various projects to enhance production and productivity in the past has been limited due to inadequate storage facilities at farmer level to store their seed and food. Even if surpluses are obtained, farmers are forced to sell their produce due to lack of quality storage. The community level storages provided must conduct a needs assessment in the area, build in community ownership (through cost-sharing with community members), sell storages at cost to members and develop institutional arrangements for managing these storages (seed committee). Reducing post-harvest losses: through threshing machines – spare parts and maintenance guaranteed and clay pots technology, with varying sizes.

Livestock and rangeland management: Conducting farmer awareness on livestock adaptations, Providing capacity building for farmers on best management practices for cattle, small ruminant and poultry (housing, feeding, breeding and health care), providing capacity building for farmers on more efficient technologies for climate change adaptation, Increase access and coverage of veterinary services and providing support to (financial, technical and organisational) to input delivery service providers.

Strengthen management and sustainable use of rangeland resources through improvement of access to pasture, exclusion of fires, preservation and improvement of rangelands, regulation of transhumance and providing access to watering facilities for livestock, providing support to communities in the improvement of endemic ruminant breeds through the establishment of village small ruminant breeding schemes and provide support to the Gambia Indigenous Livestock Multipliers Association (GILMA), Promote better integration between crop and livestock activities and Promote Integrated, holistic and multi-sectoral approach.

Livestock producer associations and related value chain associations are generally weak in terms of institutional managerial, advocacy and resource mobilization capacities. Besides the institutional, organisational and financial capacity gaps of the associations, there are also technical capacity gaps of the association members relevant to climate change adaptation. During the countrywide stakeholder consultations major capacity gaps were identified in feeding practices (fodder production and feed conservation techniques), housing, breeding practices, health care management practices and improvement of habitats.

The Gambia's Livestock and Horticulture Development Project (LHDP) was implemented with an overall development goal of “reducing rural poverty by raising the incomes of rural producers”. The project targeted production, processing and marketing of livestock and horticultural products at the community level. Specific interventions include Small Ruminant (SR) and poultry production and marketing and value-chain integration/upscaling (e.g. to address small blockages in value chain and/or upscale promising technologies) (new focus Provision of extension services (motorcycles and training). Training (of villagers) in good agricultural practices (GAP), in group entrepreneurship development and training of front-line staff. The project did not address the climate related risks and also rangeland management practices conditioned on the climate impacts and sustainable rangeland management.

### **1.1.5 Links to national development goals, strategies, plans, policy and legislation, GEF/LDCF/SCCF and FAO's Strategic Objectives**

#### **Links to national development goals, plans, policy and legislation**

The NAPA country team (NCT) has prepared the **National Adaptation Programme of Action (NAPA)**<sup>8</sup> in November 2007. The NAPA has identified 10 priority projects to address issues such as: impairment of goods and services, amplification of adverse effects of climate change by human factors, food security and sustainable livelihoods, poverty reduction and equity, technology acquisition, innovation and diffusion and strategies for dealing with incremental effects of climate change. This LDCF project address two major priority projects, priority project 3: Diversification and intensification of agricultural production, processing and marketing; and priority project 8: Improved livestock and rangeland management for food security and environment sustainability.

The Gambia has prepared the **Second National Communications<sup>9</sup> under the UNFCCC** in 2012. This provides plausible climate change scenarios for assessment of the potential impacts of the projected climate change. The potential impacts of climate change on crop production, forestry, fisheries, and rangelands and livestock have been assessed in great detail. The document highlights adaptation and underlines the urgent need to strengthen institutional and technical base of the country to bring about effective implementation of adaptation policies and measures. Some of the priorities outlined in the document are identification and implementation of relevant adaptation measures and technologies in the areas of irrigation, crop selection, food processing and preservation. The adaptation technologies proposed include the adoption of deep-rooted, salt-tolerant tree/grass species and flood tolerant crop species and amendments to improve soil nutrient content and water holding capacity and tidal/flood irrigation.

The **government's vision for the agriculture sector** is to transform The Gambia into a major supplier of agricultural products to local and international markets between 2012 and 2015. To achieve this vision, the Government intends to pursue three courses of action: (i) increase food security and boost the income-generating capacity and the nutritional status of farmers, especially women and youth; (ii) transform the agricultural sector from a traditional subsistence economy to a modern market-oriented commercial sector; and (iii) increase and sustain agricultural production and productivity through year-

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<sup>8</sup> Government of The Gambia (2007) Gambia National Adaptation Programme of Action (NAPA) on Climate Change, Banjul, November 2007.

<sup>9</sup> Government of The Gambia (2012). The Gambia's Second National Communication under the United Nations Framework Convention on Climate Change (UNFCCC), Banjul, July 2012.

round irrigation. The **Agriculture and Natural Resources (ANR) Policy (2009 – 2015)**<sup>10</sup> ‘s overall objective is to increase the agriculture sector’s contribution to the national economy by increasing productivity through commercialization and greater private sector participation predicated on a sound macroeconomic framework aimed at enhanced growth and employment creation. While the ANR policy is the overarching framework, sub-sectoral policies exist for fisheries (2012 – 2015), forestry (2009 – 2019), water resources (2009 – 2019). Complementary policies also exist for nutrition (2010 – 2020) and gender (2010 – 2020). The proposed project considers the complimentary with these policies.

Within the framework of the New Partnership for Africa (NEPAD), in 2003 the Comprehensive Africa Agriculture Development Programme (CAADP) was initiated soliciting each member country of the African Union (AU) to formulate a National Agricultural Investment Plan (NAIP) consistent with the Regional Agricultural Investment Plan (RAIP) to guide each country’s pathway to agricultural and natural resource development. The Gambia National Agricultural Investment Plan (GNAIP)<sup>11</sup> 2011 – 2015 is aligned fully with the national goals of Vision 2020, and aims to support the realization of main national strategic programmes, including the Poverty Reduction Strategy Paper II (PRSP II 2007-2011) and the Agriculture and Natural Resources (ANR) Sector Policy (2010). GNAIP comprises six programmes: (i) Improvement of Agricultural Land and Water Management; (ii) Improved Management of Other Shared Resources; (iii) Development of Agricultural Chains and Market Promotion; (iv) National Food and Nutrition Security; (v) Sustainable Farm Development; and (vi) GNAIP Coordination, Monitoring and Evaluation.

### **Links to FAO’s Strategic Objectives**

This Project is aligned with FAO’s Global Strategic Objective 2 (SO2): **Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner.** The Project’s focus to help local forest user groups improve their forest management practices while benefiting their own livelihoods will contribute in particular Organizational Outcome 1 (OO1) under SO2: Producers and Natural Resource Managers Adopt Practices that Increase and Improve the Provision of Goods and Services in the Agricultural Sector Production Systems in a Sustainable Manner. In addition, the Project’s work to strengthen the relevant policy framework in the Gambia will contribute to SO2, OO2: Stakeholders in member countries strengthen governance – the policies, laws, management frameworks and institutions that are needed to support producers and resource managers – in the transition to sustainable agricultural sector production system. It is also aligned to SO5: Increase the resilience of livelihoods to threats and crises. The project contributes to increased resilience of livelihoods to threats and crises OO2 under SO5: Countries and regions deliver regular information and trigger timely actions against potential, known and emerging threats to agriculture, food, and nutrition.

The project fit into FAO-Adapt, an organization-wide framework programme launched in 2011. It provides general guidance and introduces principles as well as priority themes, actions and implementation support to FAO’s multi-disciplinary activities for climate change adaptation. FAO-Adapt provide an umbrella to FAO’s adaptation activities, including short-term and long-term adaptation measures. FAO-Adapt aim to enhance coordination, efficiency and visibility of FAO’s adaptation work. FAO’s Interdepartmental Working Group (IDWG) on Climate Change and its subgroup on adaptation facilitate the implementation process of FAO-Adapt. Technical units in FAO Headquarters and decentralized offices lead the delivery of outputs and actions consolidated under the priority themes defined in the FAO-Adapt Framework Programme.

The project is aligned with FAO’s Country Programme Framework (CPF: 2012 - 2015) that was implemented in partnership with stakeholders particularly the Ministries of Agriculture (MOA), Fisheries and water Resources (MOF & WR), Forestry and the Environment (MOFEN), multilateral and bilateral donors, UNDAF members, NGOs, farmer organizations and Civil Society Organizations (CSOs). The previous CPF has identified three priority areas for The Gambia: (i) Improved food and

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<sup>10</sup> The Republic of The Gambia (2009) Agriculture and Natural Resources (ANR) Policy (2009 – 2015).

<sup>11</sup> The Republic of The Gambia (2010) Gambia National Agricultural Investment Plan (GNAIP) (2011 – 2015).

nutrition security, (ii) Agricultural productivity and commercialization, and (iii) Improved crop production and productivity. The project is closely linked to the priorities of FAO's CPF in particular Outcome 3.2 on smallholder adaptation to climate change. The project is also closely linked to the Interim Country Programming Framework (CPF) of 2016 -2 107 Priority area 3 on Disaster Risk Reduction and Climate Change Adaptation.

## SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS

### 2.1 PROJECT STRATEGY

The proposed project is consistent with the LDCF results framework, objectives, expected outcomes, core outputs and relevant indicators. The adaptation benefits and additional cost for which the LDCF resources are requested and specific adaptation activities will increase the climate resilience of the defined baseline activities. This project strategy targets the GEF LDCF CCA-1 on reducing vulnerability to adverse impacts of climate change and objective CCA-2 on increasing adaptive capacity to respond to the impacts of climate change. The project will work in line with LDCF programme strategy to support climate change adaptation through integrated livelihood and income generation practices and management of rangelands to protect assets of livelihood dependent on livestock.

The strategy of the project is to promote adaptation measures at local level to reduce risks to economic losses and diversify and strengthen livelihoods and their sources of income. The practices are aimed to reduce climate change risks and vulnerabilities in a cost-efficient way to deliver adaptation benefits. The project will follow the results based management and programmatic approach of GEF/LDCF in addressing climate change adaptation on the ground. All major on going and pipeline initiatives of the Government and development partners are taken into consideration to enhance synergies and to avoid potential duplications.

### 2.2 PROJECT OBJECTIVES

The overall goal of the project is to support the Gambia's agriculture sector to become climate resilient by promoting urgent and immediate adaptation measures and integration of adaptation priorities outlined in the NAPA into agriculture sectorial policies, plans, programmes and local actions. The overall objective of the project is "to promote sustainable and diversified livelihood strategies for reducing the impacts of climate variability and change in agriculture and livestock sector".

### 2.3 EXPECTED PROJECT OUTCOMES

The project framework below outlines five components and is aligned with the LDCF outcomes. The expected outcomes and relevant output indicators are presented hereunder.

- Outcome 1.1 Strengthened adaptive capacity of institutions and mainstreamed climate change adaptation priorities into sectoral policies and plans
  - **Outcome Indicator 1.1:** (AMAT Indicator 2.2.1): No. and type of targeted institutions with increased adaptive capacity to minimize exposure to climate variability
  - **Baseline:** Capacity of the government agencies and local stakeholders is inadequate to respond to impacts of climate variability and change in agriculture sector. No specific capacity developed initiatives taken up.
  - **Target:** 5 MOA, 40 DOA, 35 DLS, 20 NARI, 16 FTS, 150 regional staff (in 3 regions) and 150 entrepreneurs from 10 districts have increased capacity on climate change adaptation and capable of better respond to the impacts of climate change.
- **Outcome Indicator 1.2** (AMAT Indicator 1.1.1): Adaptation actions implemented in national/sub-regional development frameworks (no. and type)

- **Baseline:** Climate change mainstreaming in agriculture sector lacks technical support to mainstreaming, NAPs support started late 2015 but agriculture sector mainstreaming is weak.
- **Target:** Climate change priorities are integrated into 4 national policies/strategies and plans and technical support provided to facilitate NAPs processes in agriculture sector through systematic consultations at all levels and 30 MOA staff trained on mainstreaming and they are aware about importance of integration of adaptation priorities into policies/plans and strategies.
- **Outcome Indicator 1.3:** NEA Laboratory services strengthened to support project implementation
  - **Baseline:** A laboratory exists in NEA, but focuses on pesticide residues and chemicals only
  - **Target:** The existing laboratory upgraded with new instruments and at least 6 staff trained on operation and maintenance and are capable of monitoring the impacts of adaptation interventions on natural resources.
- Outcome 2.1 Increased knowledge and understanding of vulnerability and risk assessment tools, agro-climatic monitoring and climate information services for food Security by national and local level institutions
  - **Outcome Indicator 2.1** (AMAT Indicator 2.1.2.1): Type and scope of monitoring systems in place
  - **Baseline:** There is no systematic risk and vulnerability assessment conducted for 3rd national communication due to lack of data and information
  - **Target:** Improved data, tools and methods such as climate, biophysical and socio-economic variable and analysis for vulnerability and risk assessments and food security early warning systems in place and at least 5 DWR staff trained to monitor and analyse the risks.
  - **Outcome Indicator 2.2** (AMAT Indicator 2.1.1) Relevant risk information disseminated to stakeholders
    - **Baseline:** There is no inter-agency cooperation in place to process, interpret and communicate weather and climate information to users in multiple sectors.
    - **Target:** Multi-disciplinary technical group strengthened and disseminating relevant risk information to target groups (3000 HH in 10 districts)
- Outcome 3.1 Integrated climate resilient strategies for diversified livelihoods strengthened/introduced and sources of income improved for vulnerable households and communities
  - **Outcome Indicator 3.1** (AMAT Indicator 1.3.1): Households and communities have more secure access to livelihood assets (Score)– Disaggregated by gender
    - **Baseline:** There are community gardens being implemented through MDG1c and Songhai model, but constrained by some practical issues.
    - **Target:** Secure access (Score 4) to livelihood assets by 2 500 farm households through community gardens, 250 households with knowledge on value addition, 50 households with honey production and 30 poultry producers associations of which 70% are women beneficiaries.
- Outcome 3.2 Strengthened climate-resilient livelihoods of target populations by promoting sustainable crop intensification and innovative crop improvement and management practices

- **Outcome Indicator 3.2.1** (AMAT Indicator 1.2.1.3): Climate resilient agricultural practices introduced to promote food security (type and level)
  - **Baseline:** The research station trials focus only on crop improvement of major cereals and not on drought tolerant traditional crop species that have more potential in-terms of tolerance to drought.
  - **Target:** Drought tolerant crop varieties of *findi*, cassava, sweet potato, dual purpose cowpea introduced in all 10 districts directly benefitting 1500 households (200 HH benefit from *findi*, 300 HH benefit from sweet potato, 500 HH benefit from cassava).
- Outcome 4.1 Improved management of rangelands and increased access to livelihood assets to sustain sources of income by livestock dependent communities
  - **Outcome Indicator 4.1.1** (AMAT Indicator 1.2.1.3): Climate resilient agricultural (livestock) practices introduced to promote food security (type and level)
  - **Baseline:** The rangelands are degraded and over grazed due to non- availability of proper management alternatives.
  - **Target:** 10 deferred grazing areas established and reseeded with multi-purpose grass/legume species, 10 intensive feed gardens established in each district, 6 livestock water points established, demarcation of cattle tracks in place benefiting 1000 HH.
- Outcome 5.1 Project implemented with a results based management framework and best practices and lessons learned disseminated widely
  - Baseline data, systematic survey results and measurable indicators are set as part of the M & E framework at the beginning and implemented in all 10 selected districts. At least 25 good practices examples are packaged with details for replication and shared nationally.

## **2.4 PROJECT COMPONENTS AND OUTPUTS**

### **Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector**

This Component aims at strengthening institutional and technical capacities for effective climate change adaption by improving the readiness of key national institutions and local stakeholders to respond to climate change impacts and by mainstreaming adaptation in national agricultural policies, plans and programmes.

#### **Outcome 1.1 Strengthened adaptive capacity of institutions and mainstreamed climate change adaptation priorities into sectoral policies and plans**

##### **Output 1.1.1 Technical capacity of institutions at all levels (national, regional, district and local) focusing on climate change adaptation in agriculture sector strengthened**

Training for MOA, DOA, DLS and NARI staff at the national level: Training needs will be assessed at the national level through series of consultations and accordingly training manuals with various modules will be developed. The training programmes will be conducted at the national level to train about 100 staff drawn from MOA, DOA, DLS and NARI on climate change impacts in agriculture, adaptation, diversified agriculture strategies and rangeland management. The number of staff to be trained agreed during the PPG stage include: MOA (5), DOA (40), DLS (35) and NARI (20)) at national level. Training will be carried out in year 1 and 3 to update staff on new and emerging issues on climate change. The specific activities include training needs assessment, training curriculum development and training delivery. Four 4 days trainings per year (25 participants/training event) will be organized in year 1 and year 3. The training of Trainers (TOT)

approach will be employed at the national level to facilitate involvement of national level staff in regional and district level training programmes as trainers.

Training for regional, district and local level agriculture and livestock services staff: Technical expertise of regional, district and village level agriculture and livestock staff will be enhanced on climate change adaptation practices. Through this activity 50 staff (30 agriculture and 20 livestock extension staff) in each region (total 150 trained in 3 regions) will be exposed to in-service training. The staff will be selected from each of the 10 districts.

The regional, district and local level training programmes will be facilitated by a team of trained national level staff. Facilitation of regional level trainings by the national level staff will enhance the sustainability of the capacity development programme. The tested and validated training manuals for national, regional, and local levels will be integrated into the MOA regular/annual training activities. Specific activities will include training needs assessment at different levels, development of training manuals and in service training for agriculture extension staff delivery and evaluation. Specific activities include – a three 3 day training programme for regional level staff (90 regional staff), 2 in-service training programmes of 3 days for district level extension staff (60 extension staff) and training curriculum development and delivery.

Training for outreach programme of the Food Technology Services: Outreach programme of Food Technology Services and Horticulture Technical Services strengthened to develop new value added products to complement crop diversification by training at national level of 16 specialists in food technology on processing, packaging, labelling, storage, quality management, product development and marketing of fruits and vegetables to add value; and horticultural production on crop diversification covering drought tolerant vegetable cultivars.

Training will be implemented periodically and incorporated in the overall training of the MOA. The FTS' pilot processing plant will be supported to improve its functioning in order to better serve the horticulture growers and enterprises. Support will include FTS processing equipment and simple tools for training and demonstration. The FTS will coordinate with EMPRETEC for arrangement of suitable entrepreneurship training for FTS and HTS staff, including business planning and financial record keeping.

Training programme for entrepreneurs on newly introduced practices and agribusiness: The Department of Agriculture (DOA) through its extension services (core of staff trained through the in-service training) will periodically train selected 150 entrepreneurs in 10 districts of the three regions on new and improved production practices of new drought tolerant crops, which are *findi*, sesame and cassava. The National Agricultural Research Institute (NARI) will collaborate with the CPCU and DOA to provide certified seeds and cassava seeds cuttings. Though there is no seed certification programme now, there is a possibility to collaborate with NARI in this area of work once it is established.

Selected entrepreneurs' will be linked to financial institutions (Reliance Financial Services, Credit Unions) facilitated by CPCU and Ministry of Trade and GIEPA. GIEPA will collaborate to support the development of SME investment proposals on crop production. The entrepreneur development training and growth will be facilitated by the EMPRETEC entrepreneurship and BDS programme in partnership with DOA's Agribusiness Service Unit.

The project will explore innovative value chain financing from within, using supplier contracts between different actors, through value-adding linkages with key actors and services in the agro-processing value-chains. It will further collaborate with microfinance institutions and non-bank financial institutions to ascertain the feasibility of piloting individual or group lending models using development grants, such as the Graduation model where interest rates are offset by grant contributions and are thus much lower than the very high official interest rates in the credit market. Reliance, NACCUG and GAWFA have all shown some interest. Specific activities include 6

trainings (25 participants each) to entrepreneurs, customized training manual development, discussion meetings (10 districts) to introduce financing and also to the procedures to access credit facilities.

**Output 1.1.2 Quality-control laboratory in National Environment Agency (NEA) strengthened to monitor and analyse the impacts of adaptation practices on the natural resources and environment**

The quality control laboratory of the National Environment Agency (NEA) will be strengthened to monitor and analyse the impacts of climate change adaptation practices on the natural resource environment. In particular, this output will support environmental monitoring such as soil sediments and surface water bodies to ensure that adaptation practices to be implemented are not harming the environment and also to consider remediation measures put in place to counter any negative impacts. In addition, monitoring will also focus on salt water intrusion into the fresh water zones of the river system; salt water seepage into the upper aquifer of the freshwater system in the coastal areas; and the degradation of natural resources.

This output will also provide support to monitor the use of inputs for adaptation interventions and ensure that no negative impact on the environment. This will also support the diagnosis and formulation of relevant guidelines for staff in environmental monitoring in relation to climate change adaptation. The specific activities include procurement and installation of equipment and capacity development to staff on operation and maintenance of instruments and on guidelines for monitoring the impact of adaptation practices.

**Output 1.1.3 National Adaptation Planning (NAPs) in agriculture sector facilitated and climate change concerns mainstreamed into national agriculture/livestock policies, strategies and programmes**

The activities of the output will contribute to the NAP processes being carried out as part of the Global Support Programme on National Adaptation Planning (NAP) and to update and mainstream climate change adaptation priorities into national policies, plans and programmes. All relevant policies to the ANR sector reviewed and the following policies to be updated and/or mainstreamed in climate change adaption in agriculture are: 1) National Poultry Policy, 2) National Animal Breeding Policy, 3) Successor ANR policy and 4) National Rangeland Inventory/Policy. The National Adaptation Planning (NAP) process will be coordinated by Department of Water Resources and the mainstreaming in agriculture policies through updating and formulation will be coordinated by Central Project Coordination Unit (CPCU) and supported by the relevant technical institutions, to be executed at a specified time of the project's life. Specific activities include: national level consultation (1/2 day), training on mainstreaming (2 days – 30 participants), regional consultations (4 consultations), consolidation workshop, hiring of a mainstreaming expert (4 months/year for 2 years 8 months total) to support NAPs processes and NAPs documentation.

**Component 2: Assessment of vulnerabilities and risks and dissemination of timely climate risk information to users at all levels**

This Component aims at increasing awareness of climate change impacts, vulnerabilities and adaptation and improving the technical knowledge for the identification and prioritization of adaptation measures. It wishes to achieve the following results: i) consolidated climate and crop databases for decision making in agriculture; ii) tools and methods of risk and vulnerability assessment; iii) a new system in place at the Ministry of Agriculture (MOA) to disseminate timely risk information iv) improved methods of crop monitoring; and v) improved forecast products developed at the Department of Water Resources (DWR) for agriculture application and disseminated to rural producers in 3 regions. This will contribute to increase the adaptive capacity of government institutions and local farmer groups.

**Outcome 2.1 Increased knowledge and understanding of vulnerability and risk assessment tools, agro-climatic monitoring and climate information services for food Security by national and local level institutions**

**Output 2.1.1 Improved database, tools and methods for vulnerability and risk assessment, agro-climatic monitoring for food security developed at the national and local level and staff trained**

**Consolidation of data and methods and conduct of vulnerability and risk assessment:** The output will contribute to strengthen the risk and vulnerability assessment by consolidating relevant information using climate change projections based on AR5 scenarios, crop, soil and socio-economic data collated from different agencies. Feasibility of accessing data and information from multiple information systems of various ministries will be conducted. The output will deliver a spatial information product on risk and vulnerability and relevant training programmes to enable sustainability with the executing partners.

The specific activities include assessment of existing information products and services related to risk and vulnerability and identification of gaps for improvement, collection and collation of data from various departments, data analysis and development of spatial vulnerability and risk maps. This will also support development of technical capacity with in DWR through targeted training programmes.

**Improved crop monitoring and early warning for food security:** Building on previous experiences, the project will improve the quality of early warning bulletins for food security in the Gambia. This will facilitate its outreach within the Government institutions and local communities. The technical capacity of multi-disciplinary group that also involves DWR, DOA, MOA and DLS will be improved to update the agro-meteorology bulletins with region specific information. The agro-meteorological bulletins and the food security early warning information products will be disseminated to wider users to enhance effectiveness of food security emergency operations and relevant training programmes will be organized for the Multi-disciplinary groups.

Feasibility of using multiple spatial products available from various sources will also be accessed. This includes satellite imageries, rainfall forecasts, commodity price, etc., This intervention is expected to increase the collaborative activities between the Ministry of Agriculture and Department of Water Resources.

**Output 2.1.2 National Framework for Climate Services (NFCS) supported and weather and climate forecasting customized for agriculture sector and capacity enhanced**

**National Platform for Climate Services:** This output will support to establish the national framework for climate services. This platform for climate services will enhance coordination among the Department of Water Resources and the Ministry of Agriculture and Multi-Disciplinary facilitation teams (MDFTs). This output will enhance the technical capacity of the MDFTs on translation and application of climate information services in the agriculture sector. Two national level consultations and feedback mechanism will be conducted every year for three years. This activity includes the establishment and sustained running of the national framework for climate services, consultations and relevant feedback mechanisms.

**Improved weather and climate forecast information products for agriculture:** This activity will support the dissemination of weather and climate information for the agricultural sector to wider rural communities in 3 regions. Focusing specifically on agriculture and food security sectors, this output will be linked with the UNEP-LDCF Climate Change Early Warning Systems project. The output will support community level early warning systems by closely engaging the district level task team members. The project will support end-to-end climate information communication and feedback mechanism in 3 locations (one in each of the selected regions). This will complement 4

pilot sites established through UNEP-LDCF early warning project. The investments includes establishment of community radios, radio listening groups, mobile phone communication, etc., The DWR will take a lead role to implement this output in close collaboration with the Ministry of Agriculture.

### **Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing**

The main aim of this component is to promote diversification of livelihood strategies and intensification of agriculture production systems to better manage climate risks and vulnerabilities, processing and marketing to enhance the effectiveness of baseline project activities. Adaptation benefits will include introduction of innovative location specific community garden models in 10 most vulnerable communities in 15 districts for increasing income by 30% benefitting 2500 households. In addition, diversification strategy will include introduction of drought tolerant *findi* (hungry rice), traditional and industrial cassava and also bee keeping to promote income opportunities for rural women.

Primarily, bee keeping at household level is included as an alternate income generation activity for women. Nonetheless, this practice is climate-resilient and can reduce the risk of bush fire during extended dry conditions mainly caused by breaks in rainy season. The local communities often make fire to drive honey bees while honey collection and during dry season this often lead to widespread bush fire and causes extensive damage to livelihood assets. Bee keeping at household level can reduce unsustainable honey collection from the forests by making fire. Honey bees are efficient polinators in a number of crops and bee keeping at household level can improve pollination in field crops and thereby increased yield and production could be achieved.

Similarly, there are activities that promote sustainable crop intensification that consider climate risks and vulnerabilities; and these practices include: promoting dual purpose grain legumes, certified seed production of drought tolerant varieties of crops, evaluation of varieties of tomato and onion for rainy season and additional area under cropping through tidal irrigation. The adaptation benefits include improving poultry, small ruminants and cattle production considering the risks of climate variability and climate change. The resources will also be used to strengthen local entrepreneurship to promote hatchery.

#### **Outcome 3.1 Integrated climate resilient strategies for diversified livelihoods strengthened/introduced and sources of income improved for vulnerable households and communities**

##### **Output 3.1.1 Location specific livelihood diversification and income generation models improved and implemented**

Community Gardens: The project will implement 10 community gardens in 3 targeted regions (NBR, CRR-N and URR-N). Investments of resources will be made where commercial vegetable production is viable. A feasibility study will first be carried out before any interventions are planned. This will ascertain competition, processing opportunities and infrastructure needs, market and customer demand, and what returns can be expected at what production costs. The lessons learnt from the past projects (e.g MDG1c and Songhai models) will be considered to re-orient vegetable garden models, thus ensuring the introduction of technologies and practices that are climate - resilient. Suitable seed varieties, appropriate sustainable farming practices and other inputs will be available to a total of 2 500 households (10 gardens x 250 households), mainly women. Extension support will be provided from DOA, through whom growers can access wet-season tomato and onion varieties from NARI's adaptive research program and seed multiplication sites. Varieties will be promoted through demonstration. The possibility of crop-livestock inter-linkages also could reduce fertilizer input costs, an important consideration where farmers have limited resources. The poultry component is linked with this component as described in the figure.

**Infrastructure development:** Each garden (approximately 5 ha) will be fenced with a live fence and provided with a borehole (approximately 50 m deep). As establishment of live fence will take at least 2 years, thus there will be a need for a temporary fence with wooden post and barbed wire or some other type of fencing (e.g. Chain link fencing). The boreholes will have submersible pumps operated by solar panels (8-10 panels) which do not require an inverter. The set up can pump 5000 liters of water per hour directly to the garden. If necessary, a storage tank (10 m high) will be constructed at each site or a series of steel or concrete-lined basins can be erected similar to ones at the Banjulnding/Sukuta/Lamin garden models. The choice will depend on the static water levels and performances of the boreholes at each site. If necessary, the gardens will be equipped with drip and/or sprinklers, depending on the location and feasibility of generating adequate pressure. Sorting and storage infrastructure also important for the farmers to add value and with some commodities, e.g. onions, to be able to store until prices are more favourable.

**Agribusiness and value addition:** The growers will be linked to EMPRETEC’s Business Development Service (BDS) advisory service program where they will be supported with entrepreneurship training, including record keeping, basic business planning and appreciation of cost, cash and profit. Complementary projects will be encouraged to provide literacy-numeracy training support to the women growers. Provision of credit and micro-insurance facilities will be explored, while savings groups will be promoted. Value chain assessment will facilitate suitable linkages with main actors and service providers. The project will place particular emphasis on building the capacity of farmers to run viable enterprises, a key to the sustainability plan and long term success of the projects.

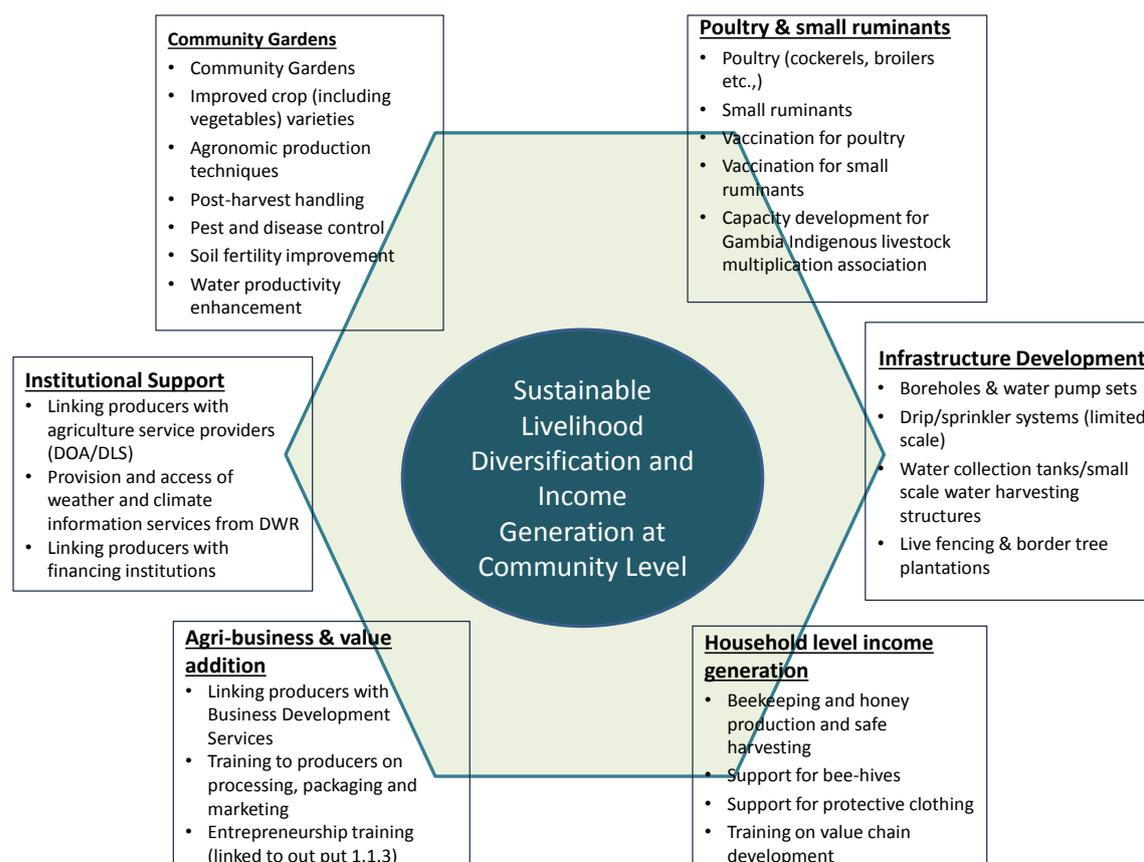


Figure 3. Sustainable livelihood diversification and income generation model at community level

**Household level income generation activities:** This practice will be implemented in 10 sites along with community gardens and women groups are trained on beep keeping and household level

processing and linked to the markets: The project will intervene in the promotion of beekeeping and honey production, marketing and entrepreneurship in 10 communities where vegetable garden models are implemented. There is a challenge in the traditional method of extraction of the honey. Often, the beekeepers use smoke to drive away the bees so they can get to the honey. This has detrimental effects on the life of the bees, it introduces an undesirable taste in the honey and it is a cause of many bushfires. Thus the project will intervene to promote alternative honey harvesting techniques that do not utilize smoking through training programs. The beekeepers will be supported through the provision of protective clothing which can even enable harvesting without driving the bees away, through the purchase of more beehives to encourage more people to become beekeepers.

Another challenge is in the value addition and processing of the honey into a quality product. The project will support the NBA in appropriate technology (strainers), to process, store and package the Gambian honey that respects all standards. It will work with the Forest Farm Facility (FFF) networks to deepen the honey value chain. The by-product of honey extraction, beeswax, can also be used in making candles. The project will assist in identifying markets for the beeswax and in strengthening entrepreneurship of business owners. Beekeeping is a suitable diversification activity in The Gambia, especially for some of the most vulnerable populations with limited participation in the leading agro-value chains.

Table 3. Detailed activities and number of units to be supported and total beneficiaries

Activity	Details	Numbers	Beneficiaries
Community gardens (crops)	<ul style="list-style-type: none"> <li>• Feasibility study for commercial vegetable production</li> <li>• Supply of improved seeds of crops and vegetables</li> </ul>	10 districts in 3 regions	2500 farm households
Infrastructure	<ul style="list-style-type: none"> <li>• Borehole, live fence (or chain), solar operated pump sets</li> <li>• Water storage tank, drip and sprinkler irrigation sets (where necessary)</li> <li>• Storage and sorting infrastructure to add value and also to store the produce until price become favourable</li> </ul>	10 sites in 3 regions	2500 farm households
Institutional support	<ul style="list-style-type: none"> <li>• Linking producers with agriculture/livestock service providers through field visits and facilitation of local trainings</li> <li>• DWR to provide real time weather and climate information (comp 2)</li> <li>• Introductory sessions involving producers and financing institutions</li> </ul>	10 sites in 3 regions	2500 farm households
Agri-business and value addition	<ul style="list-style-type: none"> <li>• Consultation meetings between producers and Business Development Services</li> <li>• Training to producers on processing, packaging and marketing</li> <li>• Entrepreneurship training (linked to comp 1)</li> </ul>	10 meetings, 10 training events on post-harvest aspects	25 selected participants from each site, total of 250
Household level income generation	<ul style="list-style-type: none"> <li>• Beehives for selected 5 households in each site (50 households)</li> <li>• Training on beekeeping, honey production, safe harvesting and value chain (2 trainings – 25 each)</li> <li>• Protective clothing for 50 households</li> </ul>	50 units (5 households from each district/community gardens)	50 households

Poultry and small ruminants	<ul style="list-style-type: none"> <li>• Training to poultry producers associations (1 training, 3 participants from each association)</li> <li>• 5000 cockerels (2/household in 2500 households from 10 sites)</li> <li>• 4 year vaccination programme for poultry (400 000 birds)*</li> <li>• 50 Broiler units supported with 500 1 day old chicks (housing and labour will be provided by the households (5 per site)</li> <li>• Two training programmes for the broiler units (2 x 25)</li> <li>• Training to Gambia Indigenous Livestock Multiplication Association (GILMA)</li> <li>• 4-year vaccination programme targeting the entire small ruminant population (400 000 sheep and goats)*</li> </ul>	30 poultry producers associations 10 sites Entire country 50 Broiler units 50 households 20 GILMA representatives Entire country	30 poultry producers 2500 households Entire country 50 households 50 households 20 participants Entire country
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\* represents country wide coverage

Poultry and small ruminants: Each of the community gardens will be linked with the poultry and small ruminant production. About 10 poultry producer associations will be strengthened in 10 districts on technical aspect, group management and entrepreneurship skills. About 5 000 cockerels from selected strains will be raised up to 10 weeks at the Farmer Training and Demonstration Centre at Abuko. For the improvement of genetic potential of local breeds of poultry, 2 500 farmers in the 10 districts will be provided with cockerels through exchange with local cocks owned by families which keep several hens. Selected households in the targeted villages will be given one or two cockerels in exchange for the local cocks within the household and making sure that only those households with productive hens are selected. A comprehensive 4-year vaccination programme targeting the entire poultry population (400 000 birds) against NCD at project sites will be conducted. Vaccination campaign and technical monitoring of cockerel exchange programme will be conducted by the staff of the Department of Livestock Services.

The project will support 50 broiler schemes with 500 day-old-chicks, materials and inputs. The broiler schemes will receive 500 day-old chicks with inputs and health care. The beneficiaries will provide standard housing and the labour to care for the birds. Biosecurity is important in the control and prevention of NCD and Gumboro diseases and will serve as the cornerstone of the entire programme. The DLS will support the schemes with close veterinary and laboratory surveillance for poultry health. Capacity building programme for rural commercial producers will be included in the package to enhance productivity. Adaptation strategies such as appropriate housing (orientation, roofing, ventilation and spacing), feeding and disease control strategies would be essential components of the capacity building programme.

Capacity of the Gambia indigenous livestock multiplication association (GILMA) will be strengthened through a specific training based on the needs assessment. There is high mortality in small ruminants attributable to preventable diseases in particular Peste des Petits Ruminants (PPR) and Pasteurellosis constitute the major threat to small ruminant production. To address this threat, a comprehensive 4-year vaccination programme targeting the entire Small Ruminant population (400 000 sheep and goats) against these two major infectious diseases at project sites will be conducted every 6 months. DLS will be responsible for the conduct of the vaccination campaign with funding from the project.

## **Outcome 3.2 Strengthened climate-resilient livelihoods of target populations by promoting sustainable crop intensification and innovative crop improvement and management practices**

### **Output 3.2.1 Drought tolerant crop seeds produced, demonstrated at field level with strengthened value addition and marketing**

Strengthening of certified seed production of drought tolerant varieties: This activity will focus on certified seed production of “hungry rice”, cassava, sweet potato and strengthen 5 small-scale entrepreneurs to benefit 500 farmers in 10 districts in 3 regions. It is important for the success of this project that seeds of traditional and improved varieties (hungry rice, cassava, sweet potatoes, wet season tomatoes and onions) are produced and adapted to suitable agro-ecological zones of the country. This role will be assigned to NARI and the project will assist in strengthening its capacity to perform the necessary seed production and certification activities (identifying & training of seed growers, seed field inspections, sampling, and laboratory testing and data management). The seed laboratories at Brikama headquarters and at Sapu will be equipped for seed testing (seed vigour and germination) and certification. The project will mainly target any existing or emerging seed production SMEs and strengthen their capacity to include the above crop seed types in their production.

Improving capacity of National Agriculture Research Institute (NARI) to evaluate and protect traditional and improved varieties of crops: The adaptive research program including the commodity programs (cereals, grain legumes & horticulture), the cropping systems and socio-economics units will be supported to enable the agronomists to test varieties (traditional and improved) and to multiply seeds of adopted varieties. These will be disseminated primarily to establish or start-up seed entrepreneurs who will further multiply and market them onward to farmers, community groups and others. This research program has adequate land resources to conduct needed trials and multiplication of seeds – 10 hectares for tidal irrigation and 15 hectares for pump irrigation. It will be supported to develop a 5 year research plan. The project interventions will include purchase of inputs and supplies (seeds, fertilizers ect.,) and 3 exchange visits of two weeks each (3 persons) to Africa Rice in Bouake, Cote d’Ivoire; the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Niamey, Niger; and the International Institute for Tropical Agriculture (IITA) in Ibadan, Nigeria. Visits by NARI scientists to the CGIAR centres will help to update them on the current issues and they can have answers to nagging questions from their more experienced colleagues.

Promotion of hungry rice” (*Digitaria exilis*) in two regions (Central River Region – North and Upper River Region - North): About 25 farmers in each of 20 communities across 5 districts of CRR-N and URR-N covering 500 households will be supported to access traditional and improved varieties of drought tolerant *findi* from NARI’s research program suitable for specific agro-ecologies. The biggest challenge with *findi* production is processing (decortication). NARI will perform the research into better suitable varieties from Guinea Conakry and Mali and will multiply seeds for distribution to farmers.

The project will explore the opportunity of locally producing the equipment, and will help promote new enterprises on the equipment with the involvement of young rural and urban entrepreneurs. These will be trained in entrepreneurship by the EMPRETEC project and provided with business development services needed to help start up and grow their businesses. The project will also assist in making the market linkages and in facilitating access to suitable finance.

Drought tolerant traditional (Palmeta) and industrial cassava (Escolanta) demonstrated (planting materials, processing and training on packaging) and implemented in 20 communities to benefit 500 household: Cassava is a drought tolerant crop, easy to grow and highly adapted to poor or marginal soils. There is growing interest in using cassava tubers as alternative, cheaper feed for poultry. Planted during the rains in August and harvested in May at the height of the dry season,

cassava is essentially a strategic crop that renders itself useful to many households at the onset of the lean season.

The major constraints in cassava production in The Gambia include the varieties, processing and the cassava mosaic virus (CMV). The peeling of the cassava by hand is tedious and the project will introduce mechanization of the post-harvest handling which will relieve women of more drudgery and allow for processing of large quantities at a time, for delivery to assured markets. There is a newly built modern processing plant (owned by the Chinese) that may offer a good market outlet for large quantities of cassava. This can potentially drive more production and contribute in positively transforming the perception of farmers towards cassava production.

The project will support introduction of appropriate simple technologies (small scale milling machines) to facilitate processing. It will support training on starch extraction at the household level (cottage industry). Training of Trainers will be supported in preparation of different recipes of cassava that are unknown to Gambians but popular in West and Central Africa (e.g. gari, acheke, chickwa, flour production, biscuits, bread mixtures, etc.). The project will also facilitate farmer linkage opportunities to finance, markets and other value chain actors and service providers. This activity will cover 20 communities to benefit 500 households.

Promotion and demonstration of dual (grain and fodder) purpose drought tolerant grain legumes as intercrops: Dual purpose legumes for both grain and fodder are planted in the second half of the rainy season and the grains are picked at the end of the rains, while plants continue to grow vegetatively and be harvested for animal feed. The legumes include some varieties of cowpeas, *Stylosanthes fruticos* or *S. hamata* and alfalfa (*Medicago sativa*) and Croton. Research has shown significant increases in total biomass and crude protein of pearl millet that was inter-cropped with *S. fruticos* after the second year. Alfalfa and moringa has been found to be excellent additions to a cassava based poultry and feed formulation that are low in cost. These could thus be related to the small scale cassava milling operations. The project will support NARI in the research on ideal cereal-legume combination that will optimize grain harvest and a significant live weight gain from livestock fed with the cereal residue and supplemented with hay from the legume. This activity will cover 500 households.

### **Output 3.2.2 Rehabilitation of rice cultivable area by developing tidal irrigation and ensuring value addition and market linkages**

The CRR-N would be the ideal region for the activities that will result in this output. The River Gambia has fresh water in this region and there are flood plains that get inundated every high tide. In the event that the whole 40 ha cannot be found in one contiguous location, the project can consider implementation in two or three villages with smaller rice enclaves that total 40 ha. There will not be any logistic issues concerning heavy earth-moving equipment going across the river to the South. To add value, the targeted sites will through the project benefit from light farm machinery to ease post-harvest handling and to reduce post-harvest losses. One of the key constraint to timely planting at the moment at the moment is non availability of land preparation machineries. The rice is to be cultivated in a manner consistent with minimum tillage. Farmers will thus be trained in the timing and appropriate use of tilling machinery to achieve this. Small power tillers will be provided to the farmers (in limited numbers to support timely cultivation).

Selected sites will be provided with motorized thresher and rice mill and other necessary items such as drying floor, tarpaulins, brooms, pans, etc. to facilitate the post-harvest handling and assure the quality of the milled rice. The marketing can be established with urban centres in CRR, e.g., Armitage High School in Jangjangbureh or WFP through the P4P program to source the home-grown School Feeding Program. The project will facilitate contacts with the market and with actor and services along the entire rice value chain.

## **Component 4: Enhancing resilience of rangelands by implementing improved management practices**

This Component aims at improving and protecting the vegetation cover and sustaining livelihoods of livestock dependent communities by improving production and management practices. This includes establishment of “deferred” grazing areas and livestock watering points (surface ponds) necessary to support the most vulnerable communities. Tree intensive feed gardens will protect the natural assets and provide necessary livestock fodder during the dry season. Demarcation of cattle tracts will be planned to increase cattle access to feed during rainy season and reduce over grazing during the dry season. Re-seeding with multi-purpose livestock grass/legume species (e.g Panicum, Andropogon, Stylosanthes, Cenchrus) is expected to improve natural assets of the livestock dependent communities.

Improved management of livelihood assets to sustain livelihood activities of livestock dependent communities will improve grazing areas, multi-purpose leguminous tree species and improve water storage capacity of the grazing lands and innovative tree intensive feed gardens. Support to demarcate cattle tracts will increase cattle access and reduce over grazing during the dry season. The intervention will promote regeneration of vegetation through the adoption of new practical silvi-cultural practices and improved management of grazing lands that in turn will improve the productivity of rangelands.

### **Outcome 4.1. Improved management of rangelands and increased access to livelihood assets to sustain sources of income by livestock dependent communities**

#### **Output 4.1.1. Condition of rangelands enhanced by promoting deferred grazing areas and reseeded of multi-purpose grass and legume species**

##### Establishment of Deferred grazing areas and reseeded of multi-purpose grass/legumes:

Ten (10) deferred grazing areas will be established at project sites (one per districts). Consultative meetings (10) will be conducted with stakeholders (Local Authorities; Community Groups – Livestock breeders, Crop farmers, Women groups; Government Institutions, etc.). A local rangeland management committee will be established in all 10 sites. The communities will take centre stage in the entire process and will be actively involved at every stage. In view of the loss of several tree and grass species from de-forestation and overgrazing, priority will be given to regeneration of the vegetation cover by tree planting and prevention of losses by bushfire management measures. Tree planting will be conducted at all 10 deferred grazing sites. Communities will be trained on bush fire management and provided assorted fire-fighting equipment in the form of sprayers, fire beaters, rakes and axes to aid communities in their efforts to manage and control bushfires. Some of the activities envisaged are: site selection; provision of materials and equipment. Planting of selected sites with pasture seeds such as panicum and legumes (e.g. *Stylosanthes* and *Cenchrus*), training in alternative feed sources and conservation/preservation for the community members in the project sites will be conducted.

Intensive feed gardens: Ten (10) intensive feed garden with average size of 50 x 50m will be established at project sites (one site per district) for demonstration purposes and to provide knowledge on production of dry season supplementary feeds in a cut and carry feeding system to meet dry matter requirement of some small ruminants. Fodder plants (*Leucaena leucocephala*, *Moringa Olifera* and *Cajanus cajan*) together with grasses (*Panicum maximum* and *Andropogon guayanus*) are preferred species for feed production in the IFGs. To ensure sustainability it is proposed to allocate intensive feed garden to recognised women groups. This will guarantee ownership of the feed gardens. It can also offer opportunity for the group to raise income through value addition feed processing (multi nutrient mineral licks) and the production and sales for pasture seeds for rehabilitation of deferred grazing areas.

#### **Output 4.1.2. Provision of livestock water points and improved demarcation of cattle tracts**

Provision of livestock watering points (6 surface ponds): Six (6) surface ponds in vulnerable communities at project sites will be rehabilitated by the project to benefit most vulnerable communities. Lessons will be learnt from the experience of the successful rehabilitation of a surface pond in Wayaworr in North Bank Region by adopting an integrated approach which include water diversion and erosion control. The communities will take centre stage in the entire process and will be actively involved at every stage. The size of the ponds will depend on the livestock population at the sites (number of users of the facility). The following activities will be conducted: community consultations and mobilisation; site selection; contract of engineering works; establish water management committees; and capacity building of water management committees through training and development of management protocols.

Demarcation and marking of cattle tracts to increase cattle access: This activity will provide access to cattle to feed during rainy season and reduce over grazing during dry season (10 sites with use of 1.5 m poles for marking cattle tracts). For durability of the demarcations, DLS has developed standard specifications for the pillars as follow: Concrete pillars, 1.5 metres high of which 0.5 metres will be below the ground, pillars size 25cm x 25cm, pillars should be reinforced by 10mm iron rods, the concrete should be of standard mixture of sand, cement and gravel. The demarcation and marking of stock routes will empower livestock owning communities to access pasture and prevent conflicts between the two systems (livestock and crop farming). It will ensured free movement of livestock and facilitate access to feed and water during rainy season and reduce overgrazing during the dry season. The following activities will be conducted: consultative meetings with stakeholders (local authorities; community groups – livestock breeders, crop farmers, women groups; government institutions, etc.) and drafting of community agreements; Survey and demarcation of stock routes; Geo-referencing and mapping of stock routes; Inaugural opening of stock routes. A contractor will be hired for the works.

Establishment of local conventions through community participation: The project will facilitate the preparation and actualisation of a set of agreements within local communities at project sites on how to sustainably manage their natural resources. It is envisaged that the communities will work in partnership with government technical services and extension services who will support, build their capacity and monitor their activities which include among others the protection and improvement of rangelands, and livestock feed resource base, their preservation and utilisation, good livestock management practices, animal health management and commercialisation of livestock marketing and support the development and implementation of local convention. The Department of Forestry, Department of Livestock Services, Community Development and NEA will be actively involved.

## **Component 5: Monitoring, Evaluation and Knowledge Management**

The objective of Component 5 is to ensure a systematic results-based monitoring and evaluation of project progress. Thus achieving project outputs and outcome targets that are established in the Project Results Framework, as well as promoting the wider dissemination of project information, data and lessons learned for replication in other areas.

### **Outcome 5.1. Project implemented with a results based management framework and best practices and lessons learned disseminated widely**

#### **Output: 5.1.1. Monitoring and evaluation system designed, implemented at all levels and project related good practices and lessons learned documented and disseminated**

Monitoring and Evaluation Systems: The M&E system will specify the impact, outcome and output indicators, the activities to be performed, the methodology, and clarify the roles and responsibilities of partners and stakeholders. The monitoring and evaluation system will include outcome and output indicators of the Adaptation Monitoring and Assessment Tool (AMAT) relevant to LDCF objectives 1 (reducing vulnerability) and 2 (increasing adaptive capacity). Outcome and output

indicators, targets and baseline will be established during the full proposal preparation stage. The impact of adaptation practices and improvement of adaptive capacities and livelihoods, will be assessed through surveys (farmer groups and households) and will be compared against the initial baseline scenario.

Documentation and dissemination of good practices: Best climate change adaptation practices will be screened based on the indicators: environment friendliness, potential to reduce the impacts of climate risks, economic viability, sustainability, social acceptability, gender sensitivity, income generation, enterprise diversification, seasonal relevance and community's need. The GEF funds will be used to carry out a mid-term evaluation/review and a final evaluation, and to disseminate good practices and lessons-learned for up-scaling by the partners and stakeholders.

## **2.5 ADAPTATION BENEFITS**

The project aims to achieve the following adaptation benefits: (i) institutions and targeted communities have capacities to minimize exposure to climate variability and climate change; (ii) climate change priorities have been integrated into at least 2 policies and 2 action plans; (iii) comprehensive risk and vulnerability information is compiled and weather and climate information is disseminated to 3000 HH in 10 districts; (iv) a food security and agro-met early warning system in place; (v) a total of 5500 farmers of which 70% are women benefit from the income diversification related activities; (vi) 10 deferred grazing areas established and reseeded with multi-purpose grass/legume species; (vii) 10 intensive feed gardens established (one in each district); (viii) 6 livestock water points established, (ix) demarcation of cattle tracks in place benefiting 1000 HH; (x) at least 25 good practices examples are packaged with details for replication and shared nationally.

## **2.6 COST EFFECTIVENESS (ALTERNATIVE STRATEGIES AND METHODOLOGIES CONSIDERED)**

The 'additional costs' associated with loss of development benefits due to climate change and increased climate variability need to have close synergies and complementarity with the baseline project interventions. This means the activities of the partners in the baseline cover most of the basic development issues but some of the key considerations to climate change and increasing climate variability have not been considered. With a co-financing of 36.83 million USD, the FAO/GEF costs are less than 20% of the entire Project.

The Project follows on from previous collaboration between FAO and the Gambia on development of livelihood alternatives. The proposed Project will build on the lessons and implementation approach of the previous support to ensure cost-effectiveness. Several alternative approaches were considered for cost-effectiveness. These alternatives included combination of institutional and technical capacity development. The alternative approach of participatory implementation promotes learning-by-doing approach compared to conventional extension approaches. The Project aims to minimize the mobilization of international experts. This will reduce the costs associated with travel and consultancy. International experts will be hired on specific topics for which local experts are not available. At the local level, the Project will rely extensively on farmer-farmer experience sharing by engaging farmer groups.

## **2.7 INNOVATIVENESS**

The project is firmly rooted in a number of policies and programmes of the Government of the Gambia notably, the Agriculture and Natural Resources Policy (2011) and its investment arm; the Gambian National Agriculture Investment Plan (GNAIP, 2011 – 2015) and its follow up plans that are currently being prepared. Principles and support to people-centered approaches are incorporated in the project especially for strengthening of community gardens and be the basis of implementation strategies as well as the monitoring at the local level. Integration of crop and livestock based enterprises and income generation activities are central to the investment at the community level and this integration is

innovative. Applying inclusive participatory process and systematic capacity development at all level simultaneously will enable the most vulnerable communities to engage in and benefit from investments and take ownership of the interventions. The production oriented interventions are complemented with capacity development on agribusiness and value addition and this approach is considered innovative.

The project has innovative elements especially by leveraging the benefits of the research – development linkages to ensure transfer of new technologies from NARI to the local communities, linking the farmers with entrepreneurs and subsequently to the market. The underutilised and traditional crop species having adaptation and income generating potential will be promoted and these activities are closely linked to mandates of NARI for further improvement and up-scaling. The new and improved integrated livelihood diversification and income generation model to be promoted at the community level is innovative.

**SECTION 3 – FEASIBILITY**

The project is anchored into a number of policies and programmes of the Republic of the Gambia. This provides opportunities to scale-up the project initiatives by the Government and other partners. Support to bottom up community participatory approaches are incorporated into the project document especially at the local level. Applying participatory approaches for implementation, and capacity development, will enable the poor and most vulnerable to engage in and benefit from local investments and take ownership of the interventions. There are opportunities to engage civil society and private sector and thus continuous support at local level is ensured and this will sustain the efforts. The efforts at the local level will be complemented by capacity development activities with the Government institutions at the national, regional and district levels.

**3.1 ENVIRONMENTAL IMPACT ASSESSMENT**

Following the guidelines of the document on Environmental Impact Assessment (EIA): FAO<sup>12</sup> Guidelines for Field Projects, the proposed project is classified in Category C<sup>13</sup>. The Environmental and Social Review Form is attached below.



GEF Project\_The Gambia.pdf

**3.2 RISK MANAGEMENT**

This project presents low to medium risks since there is a strong commitment from the Ministry of Agriculture and the Government of The Gambia to implement the activities proposed under NAPA priority projects 3 and 8. The baseline projects provide a strong foundation to ensure community participation and linking the diversification and intensification and livestock management strategies to processing and market opportunities.

Table 4. Potential risks and mitigation measures

<b>Risk</b>	<b>Level</b>	<b>Mitigation</b>
The availability of credible and timely data to inform targeting of beneficiaries	Medium	Efforts will be undertaken to collate data from recently completed or ongoing nationwide surveys (Integrated household survey, Country status report). Collaborative arrangements with initiatives such as Food Security

<sup>12</sup> See <http://www.fao.org/docrep/016/i2802s/i2802s.pdf>

<sup>13</sup> Category C projects are considered to have minimal or no adverse impacts. Specific environmentally related reports are not necessary.

<b>Risk</b>	<b>Level</b>	<b>Mitigation</b>
		Monitoring System (FSMS) will be established to collate additional data and also for validation.
Insufficient institutional support and political commitments	Low	The proposed project is strongly supported by the Ministry of Agriculture (MOA), and the GEF focal point in The Gambia. Direct linkages to existing and planned baseline project/development activities implemented by the Government, FAO and other partners will provide a strong foundation to mitigate this risk.
Inadequate capacity at national, local and community level to support diversification and intensification; livestock and rangeland management is just emerging and may be difficult to operationalize effectively.	Low to Medium	The project will specifically target capacity development at national, regional and local community levels to strengthen the work of climate change adaptation. It will build on practices and principles already tested through the Food Security through Commercialization of Agriculture (FSCA) and the Gambia Livestock and Horticulture Development Project (LHDP).
Work progresses in a compartmentalized fashion and there is little integration into the government departments.	Medium	The project preparation team has discussed these aspects with the Government counterparts and it was agreed that the interventions will clearly link to the ongoing Government and donor funded programmes. The Component 1 focuses on mainstreaming of climate change adaptation into policies and plans and which will be carried out through a consultative process by engaging all relevant Government Ministries and Departments. The component also supports NAPs processes.
Impacts of increasing climate variability may increase to the extent that even if the project implements activities to improve livelihood diversification at local level, it may not be enough to make a difference. The diversification and intensification strategies may also lead to emergence of new threats such as pest and disease infestations.	Low to medium	<p>The project will make sure to implement a suitable approach to diversification, intensification in crop production and better livestock management that underpins fundamental scientific principles and participatory methods and mechanisms that will enable stakeholders to adopt suitable measures.</p> <p>The project will not be designed to respond rigidly to one threat or another – it will seek to put in place processes and tools that will enable beneficiaries to adapt diversification and intensification strategies so that they translate into practical, improved management on the ground for any given context defined by any given threat.</p>

## **SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS**

### **4.1 INSTITUTIONAL ARRANGEMENTS**

#### **a) General institutional context and responsibilities**

In addition to FAO as a GEF agency, the main institutions involved in the proposed project are the Department of Water Resources (DWR), The Ministry of Agriculture (MOA), central and regional Directorates of Agriculture (DOAs) and Department of of Livestock Services (DLS), the National Agriculture Research Institute (NARI), The Ministry of Environment, Climate Change, Water and

Wildlife (MOECCWW), the Gambia Livestock Marketing Agency (GLMA) and the National Environment Agency (NEA).

The **Department of Water Resources (DWR)** is responsible for technical matters related to climate change. It plays a lead role in monitoring and prediction of weather and climate and is the UNFCCC focal point. The functions and responsibilities of DWR include: i) preparing an inventory of water resources of the nation; ii) coordinate the planning of technical requirements of the water resources services; iii) preparing plans for investigating the rational management, use, control and protection of water resources; iv) collecting, archiving, analyzing and disseminating meteorological and hydrological data and products for various human uses; v) Serving as the official voice in issuing weather warning for public safety as well as the national authority and official source of information and policy advice on the present and future state of the atmosphere and other aspects of national weather and climate, in support of development; vi) exploring the existence, location and behavior of underground water and to ascertain the quantity of such underground water and executing and enforcing laws and regulations affecting water. These activities have positive implications for natural resources conservation.

**The Ministry of Environment, Climate Change, Water and Wildlife (MOECCWW)** has responsibility for climate change related policies. The National Climate Committee has representation from government institutions, to a lesser extent representatives from civil society, as well as the Gambia Chamber of Commerce and Industry, representing the private sector. Institutional structures work on an ad-hoc basis without domestic funding and so are only active during projects implemented with external funding. The Climate Change committee is linked to the decentralized structures through regional, ward and village climate change committees. The National Climate Committee does not have a statutory institutional framework.

The aim of the **National Environment Agency (NEA)** is to make sure that the economic and social development of The Gambia is done in an environmentally sustainable manner. The agency is also responsible for development and maintenance of National Environmental Planning Framework for the Gambia. The agency focuses on providing education about the environment, increasing environmental awareness and empowering communities to take action to identify and solve environmental problems.. Provision of reliable and relevant information for sound environmental management and also conservation and promotion of the sound and rational use of natural resources are some of the other priorities. There are other inter-sectoral coordination mechanisms including the Agriculture and Natural Resources Working Group (ANRWG) led by MOA and the National SLM Platform within the framework of GAMSIF. The intention is for the MoA to chair the National SLM platform, which will be supported by a National SLM Secretariat as lead agency for the coordination and implementation of GAMSIF.

**The Ministry of Agriculture (MOA)** is the main institution responsible for all aspects related to agriculture and livestock services. The ministry consists of the **Department of Agriculture (DOA)**, the **Department of Livestock Services (DLS)** and several other line agencies that include the **National Agricultural Research Institute (NARI)**. NARI has a key role in The Gambian agricultural research system (NARS). The mission of NARI is to provide technological solutions to the problems of producers and inform policy makers on options to increase agricultural production and productivity by conducting applied client oriented and adaptive research. The Department of Agriculture (DOA) consists of Regional Directorates at the decentralized levels and also Service Units – Agriculture business, planning, communication, extension and education, horticulture, agricultural engineering, soil and water management, food technology and plant protection.

#### **b) Coordination with other ongoing and planned initiatives**

##### **Coordination - Outline the coordination with other relevant GEF financed and other initiatives**

FAO and the implementing partners will collaborate with the implementing agencies of other programs and projects in order to identify opportunities and mechanisms to facilitate synergies with other relevant GEF projects, as well as projects supported by other donors. This collaboration will include: (i) informal

communications between GEF agencies and other partners in implementing programs and projects; and (ii) exchange of information and outreach materials between projects. The project will develop mechanisms for collaboration with the following initiatives:

**UNEP LDCF project, “Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change”** is the 2nd Phase of the GOTG/GEF/UNEP LDCF NAPA Early Warning Project. The project objective is to strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Gambia. **UNDP, LDCF project, “Gambia - Enhancing Resilience of Vulnerable Coastal Areas and Communities to Climate Change in the Republic of Gambia”** focuses on reducing Gambia’s vulnerability to sea-level rise and associated impacts of climate change by improving coastal defences and enhancing adaptive capacities of coastal communities.

**Climate for Development in Africa Programme (ClimDev-Africa)** is a joint initiative of the Commission of the African Union (AUC), the African Development Bank (AfDB) and the United Nations Economic Commission for Africa (UNECA). The ClimDev-Africa programme supports Africa’s response to climate variability and change by building regional, sub-regional and national policy capacity. It will improve the quality and availability of information and analysis to decision-makers.

**National Agricultural Land and Water Management Development Project (NEMA) (2013 - 2019).** The overall goal of the IFAD funded *Nema* project is to reduce the poverty of rural women and youth by increasing their incomes from improved productivity based on sustainable land and water management practices. This activities of the project components (watershed development and agricultural commercialization) are related to component 3 and 4 of the proposed LDCF project. Exchange of ideas, avoiding duplication of efforts would be ensured by establishing close coordination mechanisms. The project is implemented by the Ministry of Agriculture (MOA) which is also the main implementing partner of the proposed LDCF project.

**Community-Based Sustainable Dryland Forest Management (GCP /GAM/031/GFF)** project aims to strengthen institutions at national and regional levels with improved capacity to integrate dryland forest management into policies, sectoral planning, and practices (Under Land Degradation) and enhance community forestry legal ownership and efficient and effective transfer of forest ownership to communities. The project will be implemented in the areas north of the Gambia River, namely, North Bank Region, Central River Region (North), Upper River Region (North) and Lower River Region. A total of 82 communities will benefit from the intervention. The project will be implemented between June 2016 and May 2021.

**Establishment of EMPRETEC Model of Enterprise Support Program in The Gambia (UNDP)** Implementing Agencies are Ministry of Trade, Industry and Employment (MOTIE) and (GIEPA). July 2014–June 2017. Total funding USD2 million. The overall objective is to bring about a transformational change in agriculture and industry achieved through unleashing the potential of small scale farmers and micro, small and medium scale enterprises (MSMEs) by 2017 through entrepreneurial skills training and provision of a comprehensive range of business advisory services. The EMPRETEC methodology is to be used to introduce and perpetuate the use of entrepreneurial knowledge and skill to transform economic activities within the rural and farming communities to stimulate economic growth, create self and wage employment opportunities. The components are: institutional capacity development, entrepreneurship development, promoting establishment of start-ups and enterprises’ growth, and development of a national strategy and stakeholder dialogue for MSE development.

**Global Support Programme for National Adaptation Plans (NAPs):** UNDP-UNEP-led Global Support Programme for the National Adaptation Plan (NAP) process agreed to jointly support the Government to develop this roadmap and this was carried out through document review of policies, strategies and assessments and complemented with a stakeholder consultation in the form of a NAP planning workshop. The main objectives of a NAP process are to: take a medium- and long-term

approach to reducing vulnerability to the adverse effects of climate change and to facilitate the integration of climate change adaptation (CCA), in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate. The National Adaptation Plan (NAP) process for The Gambia seeks to build upon the foundation laid by the National Adaptation Programme of Action (NAPA). The NAP process can add value by identifying capacity gaps, especially for the design and implementation of medium-term CCA priorities, as well as to tap international funding opportunities for more effective climate responsive planning and budgeting.

Collaboration will be sought with several NGO's such as: *Action Aid*, which supports activities in the field of women development, child welfare, right to food, horticulture cooperation, seed and cereal banking and *Concern Universal* which is conducting relevant work on rice irrigation, extension support, strengthening agricultural cooperatives and business development advisory service. Coordination with the following projects will be established:

### **Ways and means to avoid duplication and to enhance synergies**

Relevant consultations at national, district and local levels provided in depth knowledge of ongoing and completed projects. The project was prepared following consultation with key ministries: the Ministry of Agriculture (MOA), Ministry of Environment, Climate Change, Water Resources and Parks and Wildlife (MOCCWP&W), Ministry of Fisheries (MoF); Ministry of Forestry and Ministry of Finance and Economic Affairs (MOFEA); Ministry for Women's Affairs, Technical Departments and Private Agencies; Non-Government Organizations (NGOs), Civil Society Organizations (CSOs); Farmers and Farmer Organization and; Development Partners active in agriculture and natural resources.

At regional, district, ward and village levels, consultations were carried out through existing decentralized structures such as the Regional Development Committees, District Development Committees, Ward Development Committees as well as Village Development Committees. It is expected that regional advisory and technical committee will improve coordination and progress at regional levels. Regional Agricultural Directorates, already members of Regional Development Committees, are expected to play key roles in regional advisory and technical committee. Mainstreaming climate change through existing structures will build their capacity, notably to coordinate and harmonize activities at their respective levels, and reinforce sustainability of interventions. Decentralized committees, including regional advisory and technical committees will meet monthly if possible, to review progress at regional, district, ward and village levels and also to ensure information flow.

## **4.2 IMPLEMENTATION ARRANGEMENTS**

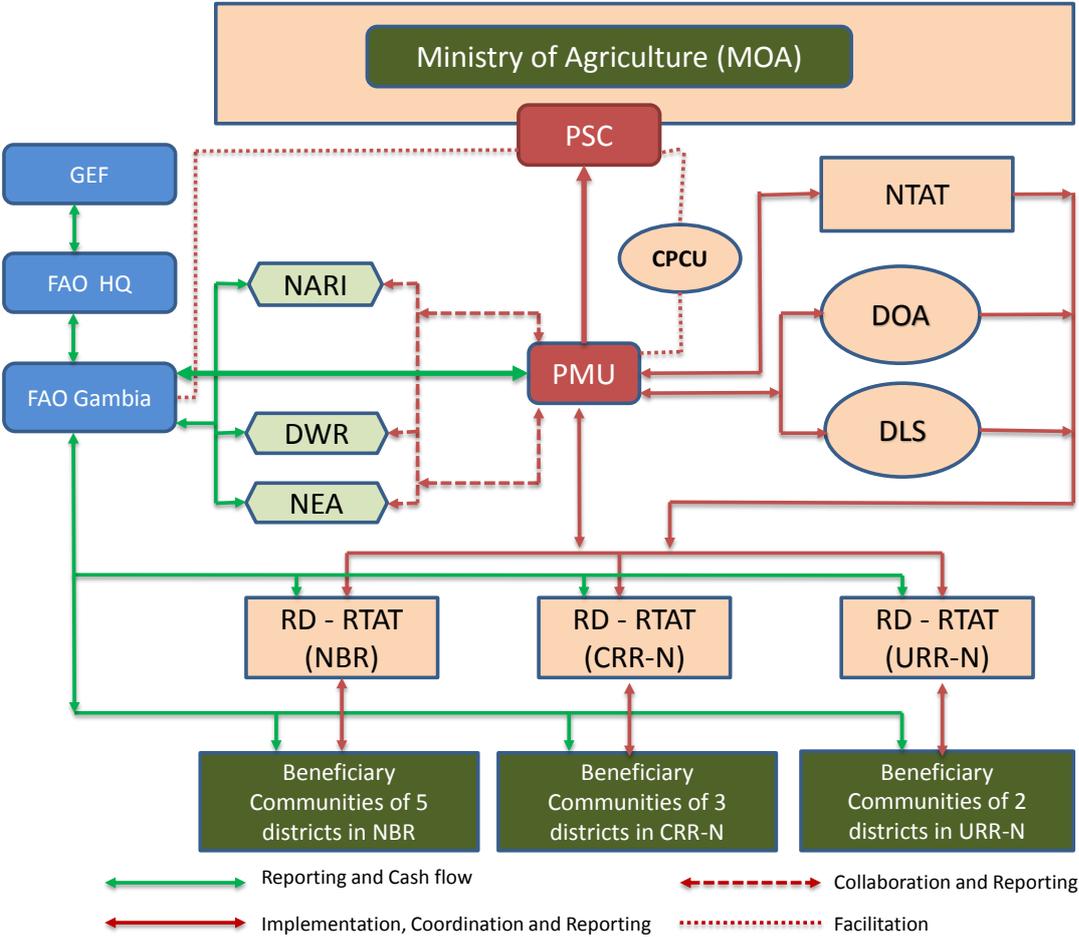
The project will be executed by FAO through a Direct Execution (DEX) modality in close consultation with MOA. FAO and the MOA will be the main executing partners for the project implementation. The implementation will be supported by DOA, DLS and line agencies such as NARI and GLMA and other executing partners including DWR and NEA at the national level. At the regional level and district level, the Regional Directorates of Agriculture and the MOA's service unit representatives will provide implementation support. The service units include agribusiness service, communication and extension services, horticulture, soil and water management and food technology and plant protection services. All of them will offer technical support for the implementation of the project.

Project beneficiaries will be the poor and marginalized communities, and small-scale farmers, who are the most vulnerable to climate risks. The project will be executed in most vulnerable 3 regions of the Gambia, exposed to climate impacts, with no-access or low-access to information, knowledge and education; lack of resources, assets and income sources; and that rely on marginal and climate risk-prone and degraded lands. Areas which possess less access to community and governmental services to cope with climate change risks.

All assistance to the local beneficiaries will be channelled through the farmer networks. Farmers of 250 households at each of the 10 locations will be given a livelihood diversification and income generation model. Farmers organized in groups will do planning and implementation of the practices identified for their location. They will implement livelihood improvement programs.

FAO as the GEF agency will provide supervision and oversight, as well as technical assistance in strengthening technical and institutional capacity for climate change adaptation, assessment, monitoring and provision of advance early warning information on vulnerabilities, risks and agro-meteorological forecasts to assist better adaptation planning and promoting community based adaptation to strengthen livelihood strategies.

Risk and vulnerability assessment and mapping will be designed in collaboration with local actors: RDCs, local government agencies, local communities, civil society, private sector organizations, and locally based NGO/INGOs. Communities will actively participate in awareness-raising activities and demonstrations, to better understand CC impacts and risks.



**Figure 4: Project Management Flow Chart**

PSC – Project Steering Committee; CPCU – Central Project Coordination Unit; DOA, Department of Agriculture; DLS – Department of Livestock Services; NARI – National Agricultural Research Institute; GLMA – Gambia Livestock Marketing Agency; PMU ; Project Management Unit; RD – Regional Directorate (Agriculture); NTAT – National Technical Advisory Team; RTAT – Regional Technical Advisory Team; NBR – North Bank Region; CRR-N – Central River Region – North; URR-N – Upper River Region-North.

**Project Steering Committee (PSC):** The PSC will be jointly established by FAO and MOA and will be hosted by MOA, and will comprise of representatives from: the Ministry of Environment, Climate Change, Water Resources and Parks and Wildlife (MOCCWP&W), the Ministry of Fisheries (MOF), the Ministry of Finance and Economic Affairs (MOFEA); the Ministry for Women’s Affair, the Technical Departments of MOA, DWR, NEA, NARI, selected UNDAF members, and selected NGOs

and Civil Society Organizations (CSOs) representatives. The PSC will be responsible for major decisions related to project coordination and administration. The project Steering Committee (PSC) will be chaired by the Permanent Secretary of the MOA. The PSC will give strategic directions to the project. It will approve adjustments in project plan and budget, if any and will also the progress review of the project. The PSC will meet twice a year.

The PSC will establish a National Technical Advisory Team (NTAT) and a Regional Technical Advisory Team (RTAT). The government will direct and support local level authorities in providing umbrella supports to farmers groups. The MOA will identify potential participants for the training courses, and will release the selected staff from the various departments involved in project implementation from their normal duties to ensure their participation at the training, workshops and demonstration activities at village level, and to fulfil other commitments related to the project’s training activities at the pilot sites.

**Project management structure and roles and responsibilities of executing partners**

**Project Management Unit (PMU):** The PMU hosted by MOA and will have responsibilities of full implementation the project. It will help NPD in organizing PSC and other meetings, workshops, and training programs for capacity building. It will also coordinate for local level implementation. It will conduct periodical monitoring, evaluation, documentation, and reporting.

The PMU will be constituted and housed within MOA (DOA/DLS) coordinated by CPCU (or any other place provided by MOA) and will act as secretariat to the PSC. The PMU will be led by National Project Director (NPD) and staffed with a full time national technical coordinator (NTC) - a full time project position working in close collaboration with NPD. The NPD and NTC will be supported by other technical and administrative staff. . The PMU will also recruit two regional coordinators – one for CRR-North and URR – North and second one for NBR. The project staff in the PMU will be recruited by FAO and report to the BH. The PMU will carry out its functions in line with FAO rules and regulations.

The following are some of the key functions of the PMU:

- to technically identify, plan, design and support all activities;
- to liaise with government agencies and to regular advocate on behalf of the Project;
- to prepare the Annual Work Plan and Budget (AWP/B);
- to be responsible for day-to-day implementation of the project in line with the AWP;
- to ensure a results-based approach to project implementation, including maintaining a focus on project results and impact as defined by the RF indicators;
- to coordinate project interventions with other ongoing activities and to monitor project progress;
- to be responsible for the elaboration of FAO PPRs and the annual PIR, and;
- to facilitate and support the midterm review.

The PMU will also be supported by a series of national and international consultants to provide short term inputs to the Project. These will be finalised during inception, and are tentatively identified as:

Table 5: Technical service inputs

Expert	Unit	Number of units
<b>International Consultants</b>		
Monitoring and Evaluation Expert	1	14 weeks
Vulnerability and Risk assessment expert	1	10 weeks
Agro-meteorology and Crop Monitoring	1	10 weeks
<b>National consultants</b>		
National Project Coordinator (NPC)	1	48 months
Regional Coordinators (RC)	3	48 months each
Extension support/Community Mobilisers	10	40 months each
Policy, institutions and mainstreaming Expert	1	12 months
Climate Data Analysis, Vulnerability and Risk Assessment Expert	1	18 months

Livelihood Development and Agribusiness Expert	1	24 months
Livestock and Rangeland Management Expert	1	24 months
Monitoring and Evaluation Expert	1	48 months
Finance and Admin staff	1	48 month
Communication expert	1	48 months
Driver/messenger	1	48 months

Terms of Reference for all short and long term personnel are provided in Annex XI

The PMU staff will be recruited by the FAO and will carry out its functions in line with FAO rules and regulations.

**National Project Coordinator (NPC):** The NTC will coordinate the PMU and ensure best international technical and management practices are integrated into the Project work plan and activities. The NTC reports to the BH on operational issues and to the LTO on technical issues. The NTC is a full time position for the entire duration of the project.

The NTC will support all aspects of the day-to-day execution of the Project. The NTC will also be responsible for providing technical advice and guidance in his/her area of technical expertise. The NTC will support the NPD in reporting on Project progress to PSC meetings, and will contribute to the development of semi-annual PPRs and annual PIRs. In addition the NTC will:

- Ensure latest and best international practices and approaches are reflected in the design and planning of Project Activities;
- Design and propose a participatory monitoring system for the Project's work;
- Support the National Project Director in the day-to-day monitoring of Project progress and the alerting of the BH and the LTO to potential problems that could result in delays in implementation;
- Help identify consultant candidates, especially international candidates;
- Support design of the Project's work with stakeholders in the pilot areas;
- Help organize and supervise consultant inputs;
- Propose an approach to managing and sharing knowledge, and to identifying and disseminating lessons learned;
- Provide on-the-job capacity development to all members of the PMU;
- Communicate, advocate and engage in policy dialogue.

**National Technical Advisory Team (NTAT):** Experts from various ministries and technical departments will form the National Technical Advisory Team. The team will provide technical support for implementation of the project. This technical team will be drawn from Ministries of Agriculture (MOA), Ministry of Fisheries (MOF), Ministry of Environment, Climate Change, Water Resources and Parks and Wildlife (MOCCWP&W), Ministry of Finance and Economic Affairs (MOFEA); Ministry for Women's Affairs, Technical Departments, multilateral and bilateral donors, UNDAF members, NGOs, farmer organizations and Civil Society Organizations (CSOs).

**Regional Technical Advisory Team (RTAT):** The Regional Agriculture Directorate (RAD) will chair the team and responsible for monitoring of the project implementation in their respective regions. The regional monitoring team will review the progress of the project and monitor field twice a year. The RTMT will advise on need based planning to develop seasonal and annual program and budget. It will also support VDC and WDC to mobilize the community groups. It will also monitor the field programs, organize monitoring visits. It will conduct evaluation of the interventions in close collaboration with local facilitators. The RC in collaboration with RTAT is responsible for reporting of the progress in the region to the PMU.

**Regional Coordinators (RC):** Two RTCs will be recruited by FAO and attached with Regional Directorates and are responsible for the coordination and planning of all local level activities. The RTCs are the Project's key strategic mechanism for planning, coordination and implementation of the project activities. The RTC will take the lead in communicating with local government, advising on the preparation of local work plans, designing and running training for local government officials, designing

and running training, designing local activities, trouble shooting at the local level, ensuring Project inputs are delivered effectively to local governments and Farmer groups, and ensuring linkages along the following communication line: Farmer groups – district – regional – National government – FAO.

**Extension support/Community Mobilisers:** There will be one mobilizer in each of the 10 selected districts to provide extension support. The mobilizers will be responsible for coordinating and mobilising farmer groups. The community mobilizers will be working closely with the Regional Coordinators and stationed at the district level agriculture/livestock offices.

**Project implementing/collaborating partners:** The project implementers include: NARI, NEA, DWR and GLMA. The implementers will work closely with the PMU through their nominated technical focal points at the national and local levels. The DWR will lead the activities under Component 2 in close collaboration with PMU and other partners. The NARI will also be responsible for providing seeds of stress tolerant varieties and animal breeds and responsible for a component related to stress tolerant crop varieties. Letters of Agreement (LoA) will be elaborated and signed between FAO and the respective collaborating partners. This will include government and civil society organizations and technical agencies. Funds received under an LoA will be used to execute Project activities in conformity with FAO's rules and procedures.

#### ***FAO's role in the project governance structure***

FAO will be the GEF Agency of the Project as well as the financial and operational executing agency. As financial and operational executing agency, FAO will provide procurement services and financial management services for GEF resources. As the GEF Agency, FAO will supervise and provide technical guidance for the overall implementation of the project. The administration of GEF grants will be in accordance with FAO rules and procedures and in accordance with the agreement between FAO and the GEF Trustee. As the GEF agency for the project, FAO will:

- Administrate funds from GEF in accordance with the rules and procedures of FAO;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers and the rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;
- Conduct at least one supervision mission per year; and
- Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, on project progress and provide financial reports to the GEF Trustee.

In accordance with the present Project Document and the AWP/B(s) approved by the PSC, FAO will prepare budget revisions to maintain the budget updated in the financial management system of FAO and will provide this information to the PSC to facilitate the planning and implementation of project activities. In collaboration with the PMU and the PSC, FAO will participate in the planning of contracting and procurement processes. FAO will process due payments for delivery of goods, services and products upon request of the PMU and based on the AWP/B and Procurement Plans that will be annually approved by the PSC.

#### ***FAO's roles in internal organization***

The roles and responsibilities of FAO staff are regulated by the *FAO Guide to the Project Cycle, Quality for Results, 2015*, Annex 4: Roles and Responsibilities of the Project Task Force Members, and its updates.

The FAO Representative in The Gambia will be the **Budget Holder** (BH) and will be responsible for the management of GEF resources. As a first step in the implementation of the project, the FAO Representation in the Gambia will establish an interdisciplinary Project Task Force (PTF) within FAO, to guide the implementation of the project.

The PTF is a management and consultative body that integrate the necessary technical qualifications from the FAO relevant units to support the project. The PTM is composed of a Budget Holder, a Lead Technical Officer (LTO), the Funding Liaison Officer (FLO) and one or more technical officers based on FAO Headquarters (HQ Technical Officer).

In consultation with the LTO, the FAO Representative in the Gambia will be responsible for timely operational, administrative and financial management of the GEF project resources, including in particular: (1) the acquisition of goods and contracting of services for the activities of the project, according to FAO's rules and procedures, in accordance with the approved AWP/B; (2) process the payments corresponding to delivery of goods, services and technical products in consultation with the PSC; (3) provide six-monthly financial reports including a statement of project expenditures to the PSC; and (4) at least once a year, or more frequently if required, prepare budget revisions for submission to the FAO-GEF Coordination Unit through the Field Programme Management Information System (FPMIS) of FAO.

The FAO Representative in the Gambia, in accordance with the PTF, will give its non-objection to the AWP/Bs submitted by the CPCU as well as the Project Progress Reports (PPRs). PPRs may be commented by the PTF and should be approved by the LTO before being uploaded by the FLO.

The **Lead Technical Officer (LTO)** for the project will be the Land and Water Officer in the regional Office. The role of the LTO is central to FAO's comparative advantage for projects. The LTO will oversee and carry out technical backstopping to the project implementation. The LTO will support the BH in the implementation and monitoring of the AWP/Bs, including work plan and budget revisions. The LTO is responsible and accountable for providing or obtaining technical clearance of technical inputs and services procured by the Organization.

In addition, the LTO will provide technical backstopping to the PT to ensure the delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical support from PTF to respond to requests from the PSC. The LTO will be responsible for:

- Review and give no-objection to TORs for consultancies and contracts to be performed under the project, and to CVs and technical proposals short-listed by the PCU for key project positions, goods, minor works, and services to be financed by GEF resources;
- Supported by the FAO Representation in the Gambia, review and clear final technical products delivered by consultants and contract holders financed by GEF resources before the final payment can be processed;
- Assist with review and provision of technical comments to draft technical products/reports during project execution;
- Review and approve project progress reports submitted by the NPC, in cooperation with the BH;
- Support the FAO Representative in examining, reviewing and giving no-objection to AWP/B submitted by the NPC, for their approval by the Project Steering Committee;
- Ensure the technical quality of the six-monthly Project Progress Reports (PPRs). The PPRs will be prepared by the NPC, with inputs from the PT. The BH will submit the PPR to the FAO/GEF Coordination Unit for comments, and the LTO for technical clearance. The PPRs will be submitted to the PSC for approval twice a year. After LTO, BH and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.
- Supervise the preparation and ensure the technical quality of the annual PIR. The PIR will be drafted by the NPC, with inputs from the PT. The PIR will be submitted to the BH and the FAO-GEF Coordination Unit for approval and finalization. The FAO/GEF Coordination Unit will submit the PIRs to the GEF Secretariat and the GEF Evaluation Office, as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO must ensure that the NPC and the PT have provided information on the co-financing provided during the year for inclusion in the PIR;
- Conduct annual (or as needed) supervision missions;

- Review the TORs for the mid-term review/evaluation, participate in the mid-term workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation; and
- Provide inputs for the TORs of the final evaluation as requested by FAO Office of Evaluation;

The **HQ Officer** is a member of the PTF, as a mandatory requirement of the FAO Guide to the Project Cycle. The HQ Officer has most relevant technical expertise - within FAO technical departments - related to the thematic of the project. The HQ Technical Officer will provide effective functional advice to the LTO to ensure adherence to FAO corporate technical standards during project implementation, in particular:

- Supports the LTO in monitoring and reporting on implementation of environmental and social commitment plans for moderate projects. In this PROTIERRAS project, the HQ officer will support the LTO in monitoring and reporting the identified risks and mitigation measures (Appendix 4) in close coordination with the project partners.
- Provides technical backstopping for the project work plan.
- Clears technical reports, contributes to and oversees the quality of Project Progress Report(s) (PPRs – see Section 3.5).
- May be requested to support the LTO and PTF for implementation and monitoring.
- Supports the LTO and BH in providing inputs to the TOR of the Final Evaluation as requested by OED.

The FAO-GEF Coordination Unit will act as **Funding Liaison Officer (FLO)**. The FAO/GEF Coordination Unit will review the PPRs and financial reports, and will review and approve budget revisions based on the approved Project Budget and AWP/Bs. This FAO/GEF Coordination Unit will review and provide a rating in the annual PIR(s) and will undertake supervision missions as necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the FAO GEF Coordination Unit. The FAO GEF Coordination Unit may also participate in the mid-term review and final evaluation, and in the development of corrective actions in the project implementation strategy if needed to mitigate eventual risks affecting the timely and effective implementation of the project. The FAO GEF Coordination Unit will in collaboration with the FAO Finance Division request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed.

The FAO Financial Division will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO-GEF Coordination Unit, request project funds on a six-monthly basis to the GEF Trustee.

### 4.3 FINANCIAL PLANNING AND MANAGEMENT

Financial management and reporting in relation to the GEF resources will be carried out in accordance with FAO's rules and procedures, and in accordance with the agreement between FAO and the GEF Trustee. On the basis of the activities foreseen in the budget and the project, FAO will undertake all operations for disbursements, procurement and contracting for the total amount of GEF resources.

Financial records. FAO shall maintain a separate account in United States dollars for the Project's GEF resources showing all income and expenditures. Expenditures incurred in a currency other than United States dollars shall be converted into United States dollars at the United Nations operational rate of exchange on the date of the transaction. FAO shall administer the Project in accordance with its regulations, rules and directives.

Financial reports. The BH shall prepare six-monthly project expenditure accounts and final accounts for the project, showing amount budgeted for the year, amount expended since the beginning of the year, and separately, the un-liquidated obligations as follows:

1. Details of project expenditures on outcome-by-outcome basis, reported in line with Project Budget (Appendix 3 of this Project document), as at 30 June and 31 December each year.
2. Final accounts on completion of the Project on a component-by-component and outcome-by-outcome basis, reported in line with the Project Budget (Appendix 3 of this Project document).
3. A final statement of account in line with FAO Oracle Project budget codes, reflecting actual final expenditures under the Project, when all obligations have been liquidated.

Financial statements: Within 30 working days of the end of each semester, the FAO Representation in the Gambia shall submit six-monthly statements of expenditure of GEF resources, to present to the Liaison Committees and the Project Steering Committee. The purpose of the financial statement is to list the expenditures incurred on the project on a six monthly basis compared to the budget, so as to monitor project progress and to reconcile outstanding advances during the six-month period. The financial statement shall contain information that will serve as the basis for a periodic revision of the budget.

The BH will submit the above financial reports for review and monitoring by the LTO and the FAO GEF Coordination Unit. Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the GEF Financial Procedures Agreement and submitted by the FAO Finance Division.

Responsibility for cost overruns: The BH shall utilize the GEF project funds in strict compliance with the Project Budget (Appendix 3) and the approved AWP/Bs. The BH can make variations provided that the total allocated for each budgeted project component is not exceeded and the reallocation of funds does not impact the achievement of any project output as per the project Results Framework (Appendix 1). At least once a year, the BH will submit a budget revision for approval of the LTO and the FAO/GEF Coordination Unit through FPMIS. Cost overruns shall be the sole responsibility of the BH.

**AUDIT:** The Project shall be subject to the internal and external auditing procedures provided for in FAO financial regulations, rules and directives and in keeping with the Financial Procedures Agreement between the GEF Trustee and FAO. The audit regime at FAO consists of an external audit provided by the Auditor-General (or persons exercising an equivalent function) of a member nation appointed by the Governing Bodies of the Organization and reporting directly to them, and an internal audit function headed by the FAO Inspector-General who reports directly to the Director-General. This function operates as an integral part of the Organization under policies established by senior management, and furthermore has a reporting line to the governing bodies. Both functions are required under the Basic Texts of FAO which establish a framework for the terms of reference of each. Internal audits of imprest accounts, records, bank reconciliation and asset verification take place at FAO field and liaison offices on a cyclical basis.

**PROCUREMENT:** At the request of the Government of The Gambia, FAO will procure the equipment and services foreseen in the budget (Appendix 3) and the AWP/Bs, in accordance with FAO rules and procedures. Careful procurement planning is necessary for securing goods, services and works in a timely manner, on a “Best Value for Money” basis, and in accordance with the Rules and Regulations of FAO. It requires analysis of needs and constraints, including forecast of the reasonable timeframe required to execute the procurement process. Procurement and delivery of inputs in technical cooperation projects follow FAO’s rules and regulations for the procurement of supplies, equipment and services (i.e. Manual Sections 502 and 507). Manual Section 502: “Procurement of Goods, Works and Services” establishes the principles and procedures that apply to procurement of all goods, works and services on behalf of the Organization, in all offices and in all locations, with the exception of the procurement actions described in Appendix A – Procurement Not Governed by Manual Section 502. Manual Section 507 establishes the principles and rules that govern the use of Letters of Agreement (LoA) by FAO for the timely acquisition of services from eligible entities in a transparent and impartial manner, taking into consideration economy and efficiency to achieve an optimum combination of expected whole life costs and benefits (“Best Value for Money”).

The FAO Representative will prepare an annual procurement plan for major items which will be the basis of requests for procurement actions during implementation. The plan will include a description of the goods, works, or services to be procured, estimated budget and source of funding, schedule of procurement activities and proposed method of procurement. In situations where exact information is not yet available, the procurement plan should at least contain reasonable projections that will be corrected as information becomes available.

Before commencing procurement, the NPC will update the project's Procurement Plan (Appendix 5) for approval by the Project Steering Committee. This plan will be reviewed during the inception workshop and will be approved by the FAO Representative in the Gambia. The PC will update the Plan every six months and submit the plan to the FAO Representative in the Gambia for approval.

#### 4.3.1 Financial plan (by component, outputs and co-financier)

Table 6. Financial plan

Component	Co-financing (USD)				GEF	Total
	FAO/ GAFSP	MOA/ H9200	MOA/ FASDEP of GAFSP	MOA/ WAAP		
Component 1	1 000 000			2 000 000	702155	<b>3 698 370</b>
Component 2	-	1 500 000		1 000 000	487800	<b>2 981 247</b>
Component 3	-	4 000 000	7 500 000	6 000 000	3 713 726	<b>21 212 170</b>
Component 4	-	2 000 000	6 000 000	1 000 000	890 228	<b>9 902 447</b>
Component 5	400 000	-	880 000	2 000 000	195 013	<b>3 474 123</b>
Project Management		1 050 000	500 000	-	299 433	<b>1 850 000</b>
<b>Total</b>	<b>1 400 000</b>	<b>8 550 000</b>	<b>14 880 000</b>	<b>12 000 000</b>	<b>6 288 356</b>	<b>43 118 356</b>

Table 4.3.2 Confirmed sources of co-financing

Sources of co-financing	Co-financier (source)	Type of co-financing	Co-financing amount (USD Millions)
GEF Agency (FAO)	GAFSP (TA component)	Joint work planning (Cash)	1.40
Government (CPCU/MOA)	H9200	Joint work planning (Cash)	8.55
Government (CPCU/MOA)	FASDEP component of the GAFSP	Joint work planning (Cash)	14.88
Government (CPCU/MOA)	WAAPP	Joint work planning (Cash)	12.00

#### 4.3.2 LDCF inputs

The LDCF funds will finance inputs needed to generate the outputs and outcomes under the Project. These include: (i) local and international consultants for technical support and Project management; (ii) Strengthening of technical and institutional capacities and integrating adaptation into national food and agriculture policies, strategies and plans; (iii) assessment, monitoring and providing advance early warning information on vulnerabilities, risks of climate change and agrometeorological forecasts to assist better adaptation planning; (iv) LoA/contracts with technical institutions and service providers supporting the delivery of specific Project activities on the ground; (v) Improving awareness, knowledge and communication on climate impacts and adaptation; (vi) Prioritizing and implementing local investment by promoting Community Based Adaptation (CBA) to strengthen livelihood strategies and

transfer of adaptation technology in targeted areas. Dissemination international flights and local transport and minor office equipment; and (vi) training and awareness raising material.

#### **4.3.3 Government inputs**

The Government of the Republic of the Gambia, through the MOA will provide in-kind support in terms of office facilities (including electricity, telephone and fax line, cleaning, etc.) and time of key staff, including the NPD. The district level offices will provide technical assistance, coordination and participation in project activities. The Government will also provide substantial investments into agriculture and livestock across all the selected districts.

#### **4.3.4. FAO inputs**

FAO will provide technical assistance, backstopping, training and supervision of the execution of activities financed by GEF resources. The GEF project will complement and be co-financed by several projects and activities implemented by the FAO Representation in the Gambia and the Government funded by various donors. With a total value of USD 43.12 million, these contributions will be managed as an integral part of the GEF project by FAO and will be assessed and recorded each year by the Project team in accordance with GEF policies and procedures.

#### **4.3.5 Other co-financiers inputs**

N/A

### **4.4 MONITORING AND REPORTING**

The monitoring and evaluation of progress in achieving the results and objectives of the project will be based on targets and indicators in the Project Results Framework (Appendix 1 and descriptions in sub-section 1.3.2). Project monitoring and the evaluation activities are budgeted at USD 150 000 (see Table 8). Monitoring and evaluation activities will follow FAO and GEF policies and guidelines for monitoring and evaluation. The monitoring and evaluation system will also facilitate learning and replication of the project's results and lessons in relation to the integrated management of natural resources.

#### **4.4.1 Oversight and monitoring responsibilities**

The monitoring and evaluation roles and responsibilities specifically described in the Monitoring and Evaluation table (see Table 8) will be undertaken through: (i) day-to-day monitoring and project progress supervision missions (PMU); (ii) technical monitoring of indicators to measure a reduction in land degradation (PMU and LTA in coordination with partners); (iii) mid-term evaluation/review and final evaluation (independent consultants and FAO Evaluation Office); and (v) monitoring and supervision missions (FAO).

At the beginning of the implementation of the GEF project, the PMU will establish a system to monitor the project's progress. Participatory mechanisms and methodologies to support the monitoring and evaluation of performance indicators and outputs will be developed. During the project inception workshop (see section 4.53 below), the tasks of monitoring and evaluation will include: (i) presentation and explanation (if needed) of the project's Results Framework with all project stakeholders; (ii) review of monitoring and evaluation indicators and their baselines; (iii) preparation of draft clauses that will be required for inclusion in consultant contracts, to ensure compliance with the monitoring and evaluation reporting functions (if applicable); and (iv) clarification of the division of monitoring and evaluation tasks among the different stakeholders in the project.

The M&E Expert (see TORs in Appendix 6) will prepare a draft monitoring and evaluation matrix that will be discussed and agreed upon by all stakeholders during the inception workshop. The M&E matrix

will be a management tool for the NPC, the Regional Project coordinators, and the Project Partners to: i) six-monthly monitor the achievement of output indicators; ii) annually monitor the achievement of outcome indicators; iii) clearly define responsibilities and verification means; iv) select a method to process the indicators and data.

The M&E Plan will be prepared by the M&E Expert in the three first months of the PY1 and validated with the PSC. The M&E Plan will be based on the M&E Table 8 and the M&E Matrix and will include: i) the updated results framework, with clear indicators per year; ii) updated baseline, if needed, and selected tools for data collection (including sample definition); iii) narrative of the monitoring strategy, including roles and responsibilities for data collection and processing, reporting flows, monitoring matrix, and brief analysis of who, when and how will each indicator be measured. Responsibility of project activities may or may not coincide with data collection responsibility; iv) updated implementation arrangements, if needed; v) inclusion of the tracking tool indicators, data collection and monitoring strategy to be included in the mid-term evaluation/review and final evaluation; vi) calendar of evaluation workshops, including self-evaluation techniques.

The day-to-day monitoring of the project's implementation will be the responsibility of the NPC and will be driven by the preparation and implementation of an AWP/B followed up through six-monthly PPRs. The preparation of the AWP/B and six-monthly PPRs will represent the product of a unified planning process between main project stakeholders. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output and outcome targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of output and outcome targets. Specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with all stakeholders and coordinated and facilitated through project planning and progress review workshops. These contributions will be consolidated by the NPC in the draft AWP/B and the PPRs.

An annual project progress review and planning meeting should be held with the participation of the project partners to finalize the AWP/B and the PPRs. Once finalized, the AWP/B and the PPRs will be submitted to the FAO LTO for technical clearance, and to the Project Steering Committee for revision and approval. The AWP/B will be developed in a manner consistent with the Project Results Framework to ensure adequate fulfilment and monitoring of project outputs and outcomes.

Following the approval of the Project, the PY1 AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with the annual reporting calendar. In subsequent years, the AWP/Bs will follow an annual preparation and reporting cycle as specified in section 3.5.3 below.

#### **4.4.2 Indicators and sources of information**

In order to monitor the outputs and outcomes of the project, including contributions to global environmental benefits, a set of indicators is set out in the Project Results Framework (Appendix 1). The Project Results Framework indicators and means of verification will be applied to monitor both project performance and impact. Following FAO monitoring procedures and progress reporting formats, data collected will be sufficiently detailed that can track specific outputs and outcomes, and flag project risks early on. Output target indicators will be monitored on a six-monthly basis, and outcome target indicators will be monitored on an annual basis, if possible, or as part of the mid-term evaluation/review and final evaluations.

#### **4.4.3 Reporting schedule**

Specific reports that will be prepared under the monitoring and evaluation program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) Annual Project Implementation Review (PIR); (v) Technical reports; (vi) Co-financing reports; and (vii) Terminal Report. In addition, the GEF tracking tool for land degradation will be completed and will be used to compare progress with the baseline established during the preparation of the project.

Project Inception Report. After FAO internal approval of the project an inception workshop will be held. Immediately after the workshop, the NPC will prepare a project inception report in consultation with the FAO Representation in the Gambia and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B and the M&E Matrix (see above). The draft inception report will be circulated to FAO, the PSC, the Liaison Committee and the federal entities for review and comments before its finalization, no later than three months after project start-up. The report will be cleared by the FAO BH, LTO and the FAO/GEF Coordination Unit. The BH will upload it in FPMIS.

Annual Work Plan and Budget(s) (AWP/Bs). The NPC will present a draft AWP/B to the PSC no later than 10 December of each year. The AWP/B should include detailed activities to be implemented by project outcomes and outputs and divided into monthly timeframes and targets and milestone dates for output and outcome indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The FAO Representation in The Gambia will circulate the draft AWP/B to the FAO Project Task Force and will consolidate and submit FAO comments. The AWP/B will be reviewed by the PSC and the PMU will incorporate any comments. The final AWP/B will be sent to the PSC for approval and to FAO for final no-objection. The BH will upload the AWP/Bs in FPMIS.

Project Progress Reports (PPR). The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the Project Results Framework (Appendix 1), AWP/B and M&E Plan. Each semester the National Project Coordinator (NPC) will prepare a draft PPR, and will collect and consolidate any comments from the FAO PTF. The NPC will submit the final PPRs to the FAO Representative in The Gambia every six months, prior to 10 June (covering the period between January and June) and before 10 December (covering the period between July and December). The July-December report should be accompanied by the updated AWP/B for the following Project Year (PY) for review and no-objection by the FAO PTF. Once these comments have been incorporated, the LTO will give his/her technical clearance, the BH will approve and remit the final PPR to the Project Steering Committee (PSC) for final approval. The BH will upload the PPRs in FPMIS.

Annual Project Implementation Review (PIR). The NPC, under the supervision of the LTO and BH and in coordination with the national project partners, will prepare a draft annual PIR report covering the period July (the previous year) through June (current year) no later than July 1st every year. The LTO will finalize the PIR and will submit it to the FAO-GEF Coordination Unit for review by July 10th. The FAO-GEF Coordination Unit, the LTO, and the BH will discuss the PIR and the ratings. The LTO is responsible for conducting the final review and providing the technical clearance to the PIR(s). The LTO will submit the final version of the PIR to the FAO-GEF Coordination Unit for final approval. The FAO-GEF Coordination Unit will then submit the PIR(s) to the GEF Secretariat and the GEF Independent Evaluation Office as part of the Annual Monitoring Review of the FAO-GEF portfolio. The PIR will be uploaded to FPMIS by the FAO-GEF Coordination Unit.

Technical reports. The technical reports will be prepared as part of the project outputs and will document and disseminate lessons learned. Drafts of all technical reports must be submitted by the Project Coordinator to the PSC and FAO Representation in the Gambia, which in turn will be shared with the LTO for review and approval and to the FAO-GEF Coordination Unit for information and comments before finalization and publication. Copies of the technical reports will be distributed to the Liaison Committee and the PSC and other project stakeholders, as appropriate. These reports will be uploaded in FAO FPMIS by the BH.

**Co-financing reports.** The NPC will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by all the project co-financiers and eventual other new partners not foreseen in the Project Document. Every year, the NPC will submit the report to the FAO Representation in The Gambia before July 10th covering the period July (the previous year) through June (current year). This information will be used in the PIRs.

**GEF-6 Tracking Tools:** Following the GEF policies and procedures, the AMAT tracking tool will be submitted at three moments: (i) with the Project document at CEO endorsement; (ii) at the project’s mid-term review/evaluation; and (iii) with the Project’s terminal evaluation or terminal report. At Project mid-term and end, the tracking tools will be completed by the PMU in close consultation with the NPD.

**Final Report.** Within two months prior to the project’s completion date, the Project Coordinator will submit to the PSC and FAO Representation in The Gambia a draft final report. The main purpose of the final report is to give guidance to authorities (ministerial or senior government level) on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. Therefore, the terminal report is a concise account of the main products, results, conclusions and recommendations of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for ensuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application to the integrated landscape management in the three microregions in the context of the development priorities at national and departmental levels, as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 3.6 below. A project evaluation meeting will be held to discuss the draft final report with the PSC and the Project Liaison Committee before completion by the Coordinator and approval by the BH, LTO, and FAO-GEF Coordination Unit.

#### 4.4.4. Monitoring and evaluation plan summary

Table 8: Summary of the main M&E reports, responsible parties, timeframe and costs

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs (USD)
Inception Workshop, annual planning meetings/workshops, final project workshop	PMU, supported by the LTO, BH	Inception workshop within three months of project start up, annual workshops as per the schedule and work plan agreed and final workshop a month before closure of the project.	(5 x 3000) USD 15 000
Baseline survey for impact evaluation (questionnaire design, survey, travel expenses)	PMU and external experts. The project team and LTO to provide support to design the survey questionnaire.	Within three months from start of the project.	(10 districts x 2000) USD 20 000
Mid-term review/evaluation (Including questionnaire design, survey and compilation)	External Consultant in consultation with the project team and other partners (includes survey of participating households, travel expenses and report writing)	After completion of two years of implementation.	USD 40 000 (includes staff cost)

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs (USD)
Final impact evaluation (Including questionnaire design, survey and compilation)	FAO evaluation unit and the project team. In addition a detailed ex-post analysis will be made based on the survey with participant households (5 participants per group), survey of control households, travel expenses, impact evaluation report writing and final evaluation.	At the end of project implementation.	USD 40 000
Project Progress Reports (PPRs)	BH (in collaboration with the PMU and the LTO) Approved and submitted to GEF by the FAO-GEF Coordination Unit	Six-monthly.	PMU time covered by the project budget. FAO staff time financed through GEF agency fees
Project Implementation Review (PIR)	BH (in collaboration with the PCU and the LTO) Approved and submitted to GEF by the FAO-GEF Coordination Unit	Annual	FAO staff time financed through GEF agency fees. PMU time covered by the project budget.
Monitoring by the Regional Directorates	Regional Directorates in close collaboration with concerned DADOs. PMU will coordinate the monitoring in collaboration with the technical experts.	Twice in a year	2500 x 2 x 4 years USD 20 000
Project M & E reports (includes project progress reports, co-financing reports, terminal reports)	PMU, with inputs from NPD, NTC and other partners. The project implementation report by PMU supported by the LTO and cleared and submitted by the GCU to the GEF Secretariat.	Semi-annual/annual or as required	USD 10 000
Terminal Report	NTC, LTO, TCSR Report Unit	At least two months before the end date of the Execution Agreement	USD 5 000
<b>Total Budget</b>			<b>USD 150 000</b>

#### 4.5 PROVISION FOR EVALUATIONS

For full-sized projects, a Mid-Term Review/Evaluation will be undertaken at project mid-term to review progress and effectiveness of implementation in terms of achieving the project objectives, outcomes and outputs. Mid-term Reviews are encouraged for medium sized projects. Findings and recommendations of this review/evaluation will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term. FAO will arrange for the mid-term review/evaluation in consultation with the project partners. The evaluation will, inter alia:

- review the effectiveness, efficiency and timeliness of project implementation;
- analyze effectiveness of partnership arrangements;
- identify issues requiring decisions and remedial actions;

- propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and
- highlight technical achievements and lessons learned derived from project design, implementation and management.

It is recommended that an independent Final Evaluation (FE) be carried out three months prior to the terminal review meeting of the project partners. The FE will aim to identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This evaluation will also have the purpose of indicating future actions needed to sustain project results and disseminate products and best-practices within the country and to neighbouring countries.

#### **4.6 COMMUNICATION AND VISIBILITY**

Giving high visibility to the project and ensuring effective communications in support of the Project's message it to be addressed through a number of activities that have been incorporated into the Project design. These include: (i) the recruitment of one PMU staff member responsible (inter alia) for communications and knowledge management; (ii) the preparation of documents and communication tools that capture the Project's economic, ecological and social benefits; and (iii) several awareness raising activities. These inputs and activities will be integrated into the Project Work Plan, and, as such, will come out of the Project's technical activities rather than be stand-alone activities.

### **SECTION 5 – SUSTAINABILITY OF RESULTS**

#### **5.1 SOCIAL SUSTAINABILITY**

At the national level, the socio economic benefits of the project will be from increased food security and agriculture commercialization and enhanced knowledge on adaptation measures. The goal of agricultural development in the Gambia is national food security and commercialization of agriculture for export promotion. Adaptation to the climate change can safeguard the agricultural production from the actual and possible losses due to climate change and related disasters. The protection of agricultural production helps in food security. Reduction in the harms for climate related natural disasters can also reduce the costs of rescue, relief and rehabilitation of climate related victims. Reduced risks in agricultural production can also decelerate the rate of emigration of youths.

The project will generate valuable knowledge on vulnerability and risks and adaptation to the climate change. The knowledge generated will be helpful to the government for mainstreaming the adaptation to national policies, plans and strategies and planning. The information thus generated will also be useful for the government to provide guidelines for programme planning in agriculture at the district level. The knowledge gained by the government staff and capacity built will be useful for future decision making in adaptation as well as integrated development projects with a component of climate change adaptation.

At the local level, the adaptation to the climate change improves livelihoods of 3000 vulnerable farmers in 10 districts reducing additional burdens of climate change. Adaptation measures not only restore their actual or expected loss in agricultural production due to the climate change, but also slow down the rate of rise in costs of agricultural production due to climate change. The adaptation decreases the risks of failure of agricultural production increasing the confidence among the farmers and insurance companies. This also reduces the premium of the insurance. Reduced vulnerability of farming communities not only improves their household food security, but also improves their social status. As the weaker sections of the society like poor, and female are suffering more from the impacts of climate change, the adaptation also decreases the disparities among the people in the society increasing equity. Knowledge gained by the farmers from this project will go far beyond the project period benefitting them in different ways in future.

Increased access of the farmers to new crop varieties and other production technologies helps farmers increase production, better manage risks from droughts and floods and increase resilience. NARI has

developed several drought tolerant varieties of crops for cultivation in rainfed areas of the project districts. The production technologies that benefit the farmers by increasing resilience include conservation farming practices that reduce soil erosion, conserve water and increase biodiversity. Livelihood diversification measures will promote less risky crops and livestock decreasing reliance of the farmers on more climate-sensitive agricultural products.

## **5.2 ENVIRONMENTAL SUSTAINABILITY**

The Project is designed to yield environmental benefits. The Project aims to improve health of agricultural production systems and resilience. The Project also aims to contribute directly to sustainable management of agricultural resources. Hence the Project should only have positive impacts on the environment. There is no reason to expect that any of the Project activities should lead to pollution, watershed degradation, the introduction of alien species or any other form of environmental damage. This situation will be monitored using standard FAO procedures and mechanisms.

## **5.3 SUSTAINABILITY OF CAPACITIES DEVELOPED**

The Project builds on a proven approach to develop capacity of farmers. The Government and FAO have been working to provide food security of most vulnerable communities for several years, and have developed a full approach to develop this capacity. The Project works with and through the local government structure to develop their capacity to take on the Project challenges after the FAO and GEF funding is completed. This Project will support these to perform their mandate – that is a capacity development-by-doing approach. After this Project, the Farmer Groups will have the technical and organizational skills.

## **5.4 APPROPRIATENESS OF TECHNOLOGY INTRODUCED**

This Project is not technology centred. However, new methods and practices will play an important role in helping the farmers groups to develop. These include agricultural adaptation practices that have already been piloted in the Gambia and have been proven to be locally suitable. There is no reason to expect that any of the practices/methods introduced and developed will be inappropriate. This situation will be monitored using standard FAO procedures and mechanisms.

## **5.5 REPLICABILITY AND SCALING UP**

The case studies based on the field level experiences will provide the adaptation benefits and economic value of adaptation practices and its effectiveness in reducing the impacts of climate variability and change. The project component 5 is specifically designed to improve sharing of good practices, lessons and knowledge management. The districts and national level knowledge sharing initiatives provide necessary policy advocacy for integration of good practices and replication in similar areas by provision of additional government funding.

## ANNEX I: RESULTS MATRIX

### Component 1: Strengthening of institutional and technical capacity for adaptation to climate change in agriculture sector

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 1.1 Strengthened adaptive capacity of institutions and mainstreamed climate change adaptation priorities into sectoral policies and plans	<p>(AMAT Indicator 2.2.1): No. and type of targeted institutions with increased adaptive capacity to minimize exposure to climate variability</p> <p>NEA Laboratory services strengthened to support project implementation</p> <p>(AMAT Indicator 1.1.1): Adaptation actions implemented in national/sub-regional development frameworks (no. and type)</p>	<p>Capacity of the government agencies and local stakeholders is inadequate to respond to impacts of climate variability and change in agriculture sector</p> <p>A laboratory exists in NEA, but focuses on pesticide residues and chemicals only</p> <p>Climate change mainstreaming in agriculture sector lacks technical support and is not systematically done</p>	<p>Training module/manual developed</p> <p>Standards on instruments decided and procured</p> <p>Consultations and start up training activities and existing agriculture and food security policies/plans reviewed.</p>	<p>Capacity developed</p> <p>Installation of instruments and capacity development programmes conducted</p> <p>Decentralized consultations completed</p>	<p>Reflected in decision making and response measures</p> <p>The laboratory is involved in monitoring of the impacts of adaptation practices</p> <p>Consolidation of inputs and final consultations conducted</p>	<p>Improvement in institutional and technical capacity sustained within the institutional system</p> <p>Sustainable running of the laboratory ensured</p> <p>Climate change concerns integrated and endorsed by the Government</p>	<p>5 MOA, 40 DOA, 35 DLS, 20 NARI, 16 FTS, 150 regional staff (in 3 regions) and 150 entrepreneurs from 10 districts have increased capacity on climate change adaptation and capable of better respond to the impacts of climate change.</p> <p>The existing laboratory upgraded with new instruments and at least 6 staff trained on operation and maintenance and are capable of monitoring the impacts of adaptation interventions on natural resources. Climate change priorities are integrated into 4 national policies/strategies and plans and technical support provided to facilitate NAPs</p>	<p>Training reports, policy reports, plans, annual progress and evaluation reports</p> <p>Upgraded laboratory and sustained running with government support</p> <p>Consultation reports and updated policies and plans</p>	<p>Trained staffs will get involved in planning, policy and decision making</p> <p>The NEA is willing to expand its activities to monitor the climate change adaptation practices as part of its mandate</p> <p>Government is taking serious steps to address the climate change risks systematically at all levels</p>

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
							processes in agriculture sector through systematic consultations at all levels and 30 MOA staff trained on mainstreaming and they are aware about importance of integration of adaptation priorities into policies/plans and strategies.		
Output 1.1.1 Technical capacity of institutions at all levels (national, regional, district and local) focusing on adaptation in agriculture sector strengthened	<p>No of national/regional/local level training programmes organized and sustained within MOA</p> <p>Number of national/ regional/ local level staff trained and supports climate change adaptation work</p> <p>Number of entrepreneurship trainings organized to strengthen agri-business and promote livelihood diversification and income generation activities</p>	<p>No systematic training programmes conducted for MOA, DOA, DLS, NARI and other stakeholders</p> <p>No climate change adaptation related training programmes integrated into the regular activities of the MOA</p>	<p>Training needs assessment conducted and training manuals developed.</p> <p>First phase of four 2 days trainings per year (25 participants/training event) organized in year 1</p> <p>3 trainings (30 in each total 90) at the regional level staff and 2 trainings (30 in each total 60) for district level staff.</p>	<p>One FTS pilot processing plant set up with processing equipment</p> <p>16 specialists in food technology services trained</p> <p>6 training programmes organized and 150 entrepreneurs from 10 districts trained and linked to financing institutions</p>	<p>Second phase of four 2 days trainings per year (25 participants/training event) organized in year 3</p> <p>Second phase of 3 trainings (30 in each total 90) at the regional level staff and 2 trainings (30 in each total 60) for district level staff organized.</p>	<p>Consolidation of training manuals and resources for further use.</p> <p>Integration of training resources and training programmes into MOA's regular activities and sustainability ensured.</p>	5 MOA, 40 DOA, 35 DLS, 20 NARI, 16 FTS, 150 regional staff (in 3 regions) and 150 entrepreneurs from 10 districts have increased capacity on climate change adaptation and capable of better respond to the impacts of climate change.	Training reports, consultation reports, training manuals, and updated plans through NAP processes.	The Government is willing to nominate the staff for the training programmes and is interested to integrate training resources into their regular activities.
Output 1.1.2 Quality-control laboratory in National Environment Agency (NEA)	An upgraded laboratory with new	There is an existing laboratory but not	Procurement of instruments	A quality control lab of NEA upgraded	Guidelines for running the laboratory and	NEA quality control lab is involved in	The existing laboratory upgraded with	Up gradation of laboratory and reports of impact	The NEA is willing to take up this activity

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
strengthened to monitor and analyse the impacts of adaptation practices on the natural resource and environment	and relevant instruments available  Number of staff trained on operation and maintenance and monitoring of adaptation practices	geared towards monitoring of impacts of adaptation practices in agriculture sector	Installation of instruments	and at least 6 staff trained on operation and maintenance and monitoring of adaptation practices	aligned with the regular mandate of the NEA	assessment of impacts and final report available	new instruments and at least 6 staff trained on operation and maintenance and are capable of monitoring the impacts of adaptation interventions on natural resources.	assessments, training reports of the staff	country wide for all relevant adaptation projects on a regular basis
Output 1.1.3 National Adaptation Planning (NAPs) in agriculture sector facilitated and climate change concerns mainstreamed into national agriculture policies, strategies and programmes	Number of consultations and training organized for the NAP processes and number of agriculture and food security policies mainstreamed with climate change concerns.	Agriculture sector is prominent in the current NAP processes but need additional technical support	A national level consultation for NAP conducted and a 2 days training for 30 participants organized	4 regional level consultations organized for NAPs processes	NAPs consolidation workshop conducted and NAP documentation supported.	The climate change concerns are integrated into at least 4 documents	At least 4 updated policies/plans available with climate change concerns integrated  30 MOA staff trained on mainstreaming and a NAPs documents consists of agriculture and food security related priorities	Consultation workshop reports, updated national policies and plans with climate change concerns integrated	NAP preparatory processes coincides with preparation/update of agriculture and/or food security policies and strategies.

## Component 2: Assessment of vulnerabilities, risks and dissemination of timely climate risk information to users at all levels

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 2.1 Increased knowledge and understanding of vulnerability and risk assessment tools, agro-climatic monitoring and climate information services for food Security by national and local level institutions	(AMAT Indicator 2.1.2.1): Type and scope of monitoring systems in place (AMAT Indicator 2.1.1) Relevant risk information disseminated to stakeholders	<p>Multi-disciplinary technical groups for agro-met and food security early warning available but very weak</p> <p>There is no systematic risk and vulnerability assessment conducted for 3<sup>rd</sup> national communication</p> <p>There is no inter-agency cooperation in delivery of climate services for the benefit of decision makers at all levels</p>	<p>Consolidation of data and information for risk and vulnerability analysis</p> <p>Exploratory study on current weaknesses in the weather and climate information systems, potential and feedback from decision makers</p>	<p>Tools and methods delivered and spatial information products developed</p> <p>Deployment of tools and methods for risk and vulnerability assessment and weather and climate information systems including capacity development.</p>	<p>The information products and early warning systems applied at the national and decentralized levels</p> <p>Application of agro-met and food security early warning products, risk and vulnerability maps and weather and climate information services</p>	<p>Customized products available, strengthened and sustained within MOA and DWR</p> <p>Lessons learnt and update of information products based on the feedback from users</p>	<p>Improved data, tools and methods such as climate, biophysical and socio-economic variable and analysis for vulnerability and risk assessments and food security early warning systems in place and at least 5 DWR staff trained to monitor and analyse the risks. Multi-disciplinary technical group strengthened and disseminating relevant risk information to target groups (3000 HH in 10 districts)</p>	<p>Spatial information products on vulnerability and risk assessment used for UNFCCC submissions, decisions taken based on agro-met and food security early warning bulletins.</p> <p>Risk and vulnerability profile document, early warning bulletins, customized weather and climate information products</p>	<p>Government actively seek data and information products and early warning messages for pro-active decisions.</p> <p>Necessary data and information are available to develop risk and vulnerability maps; Decision makers at all levels actively seek advance information for decision making to reduce the impacts of climate risks</p>
Output 2.1.1 Improved database, tools and methods for vulnerability and risk assessment, agro-climatic monitoring for food security developed at the national and local level and staff trained	<p>New data sets collated from different ministries and departments and number of risk and vulnerability spatial products</p> <p>New/updated and improved crop</p>	<p>No updated vulnerability and risks assessments done after second national communication</p> <p>An agro-met early warning product is available but crop</p>	<p>Data collection quality checking and analysis for risk and vulnerability analysis</p> <p>Customization of tools and</p>	<p>Analysis for spatial information products on risk and vulnerability assessments</p> <p>Delivery of crop monitoring tools in DWR and</p>	<p>Application of spatial vulnerability and risk assessment products for adaptation planning</p>	<p>Improved data, tools and methods such as climate, biophysical and socio-economic variable and analysis for</p>	<p>One comprehensive risk and vulnerability atlas available for the whole country</p> <p>An updated agro-met</p>	<p>Risks and vulnerability maps integrated into UNFCC submissions</p> <p>Regular updated/new</p>	<p>Necessary data is available with different ministries and departments for updating the information products and early warning systems</p>

Results chain	Indicators	Baseline	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	monitoring and early warning for food security available	monitoring and regions specific information is not available.	methods for crop monitoring.	development of new agro-met and food security early warning bulletins	Use of agro-met and food security early warning for decision making at all levels	vulnerability and risk assessments and food security early warning systems in place and at least 5 DWR staff trained to monitor and analyse the risks.	bulletin and food security early warning information regularly sent from DWR in close collaboration with MOA.	agro-met and food security early warning bulletins available.	
Output 2.1.21 National Framework for Climate Services (NFCS) supported and weather and climate forecasting customized for agriculture sector and capacity enhanced	A national framework for climate services established and running  Improved weather and climate information products disseminated to at least three regions to help decision making at local level.	No national platform for climate services and user interface platforms available at the national level.  Weather and climate information is provided to 4 pilot sites through UNEP/LDCF project, but no information is communicated to selected three regions in the new LDCF project.	2 national level consultations  Scoping study for establishment of localized weather and climate information services conducted	2 national level consultations/workshops on national platform for climate services  Establishment of communication network and local technical teams for interpretation of weather and climate information for decision making	2 national level consultations/workshops on national platform for climate services and evaluation of the platform  Weather and climate information communicate to 3 pilot sites (one each in three regions)	Final evaluation of the national platform for climate services (specifically collaboration between DWR and MOA) and utility of weather and climate information system for decision making at the local level.	A functioning national platform for climate services  Customized weather and climate information products disseminated to 3 regions and at least 3000 HH use weather and climate information for decision making	Reports of the national platform for climate services  Improved weather and climate information products and services available at the local level to help decision making.	The multi-sectoral national platform has specific focus on agriculture and food security sector  The DWR is capable of producing value added weather and climate information services

**Component 3: Promoting integrated livelihood and income generation, sustainable production and management practices in agriculture and linking to value addition and marketing**

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 3.1 Integrated strategies for diversified livelihoods and sources of income improved for vulnerable households and communities	(AMAT Indicator 1.3.1): Households and communities have more secure access to livelihood assets (Score)– Disaggregated by gender	There are community gardens being implemented through MDG1c and Songhai model, but constrained by some practical issues	Feasibility study conducted and improved location specific integrated models suggested and implementation initiated	First phase of 5 units successfully established and beneficiaries trained and linked to markets and value addition support provided	Second phase of 5 units successfully established and beneficiaries trained and linked to markets and value addition support provided	Detailed study on each of models documented and success stories disseminated widely to promote up-scaling.	Secure access (Score 4) to livelihood assets by 2 500 farm households through community gardens, 250 households with knowledge on value addition, 50 households with honey production and 30 poultry producers associations of which 70% are women beneficiaries.	Periodical implementation reports and success stories and lessons learnt.	The proposed integrated models capture major weaknesses identified from the past experiences and will have the up-scaling potential through the country.
Output 3.1.1 Location specific livelihood diversification and income generation models improved and implemented	Number of community gardens (crops) established  Number and type of infrastructure established in community gardens  Number and type of institutional support provided at local level  Number and type of activities relevant to agri-business and value addition conducted	There are number of community gardens already established under MDG1c and Songhai model projects but there are practical issues and weaknesses that limit success of the models.  The models focuses on only vegetable production and is very small and the	Feasibility study in 10 districts conducted  Establishment of community gardens initiated in 5 districts (sites) after necessary community mobilization  Establishment of necessary infrastructure started in 5 sites	Community gardens and necessary infrastructure completed in 5 sites and activities initiated in additional 5 sites  Introductory sessions between Business Development Services (BDS) and financial institutions	Community gardens and necessary infrastructure completed in additional 5 sites  DWR completes establishment of local networks in all 3 pilot sites for dissemination of weather and climate information	Establishment of community gardens in all 10 sites continued in 4 <sup>th</sup> year to make sure that all investments are sustained.  Periodical DOA/DLS/NARI field visits organized and participatory discussions conducted in all 10 districts	Secure access (Score 4) to livelihood assets by 2 500 farm households through community gardens, 250 households with knowledge on value addition, 50 households with honey production and 30 poultry producers associations of which 70% are	Implementation and progress reports  Weather and climate information products communicated to local beneficiaries  Training reports  Consultation reports  Visit reports of the regional and	The localized integrated models of livelihood diversification and income generation captures weaknesses and addressed all of them and will have up-scaling potential.

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	<p>Number of household level income generation activities prioritized and implemented</p> <p>Number and types of support provided to enhance poultry and small ruminants production at community level</p>	benefit received by the community is not making much difference in their livelihood and income generation opportunities.	<p>Field visits of DOA/DLS staff from district facilitated in all 10 sites and consultations completed</p> <p>Meetings between DWR and producers in all 10 sites completed and needs documented</p> <p>Introductory sessions between Business Development Services (BDS) and financial institutions organized in 5 sites</p> <p>Procurement of beehives for 50 households processed</p> <p>Vaccination programme for small poultry and small ruminants started in 5 districts</p> <p>First training for GILMA members organized</p>	<p>organized in additional 5 sites</p> <p>Community level training on processing, packaging and marketing organized in all 10 sites</p> <p>Establishment of beehives completed in 50 households and 2 honeybee production and value addition training organized</p> <p>Training for poultry producers association organized</p> <p>25 broiler units supported in 5 districts</p> <p>Second phase of vaccination started in additional 5 districts and simultaneously national wide vaccination is completed.</p>	<p>Coverage of communication of weather and climate information services increased to all 10 sites through community garden networks</p> <p>Second phase of vaccination completed in all 10 districts and simultaneously national wide vaccination is completed for poultry and small ruminants.</p> <p>Support for additional 25 broiler units completed and necessary trainings completed.</p>	<p>The integrated livelihood diversification and income generation models assessed and the lessons learnt communicated widely for potential up-scaling by the community groups and also through other similar projects/program mes.</p>	<p>women beneficiaries.</p> <p>DWR and MOA work closely to communicate weather and climate information products in 3 selected sites reaching at least 3000 HH</p>	<p>district level DOA and DLS staff</p>	
Outcome 3.2 Strengthened climate-resilient livelihoods of	Number of climate resilient practices introduced and	The research station trials focuses only on	Certified seed/plating material	Demonstration sites established in 10 locations	Demonstration sites established in additional 10	The lessons learnt and cost benefit analysis of	All 20 communities are closely	Demonstration reports	NARI is capable of engaging large number of local

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
target population by promoting sustainable crop intensification and innovative crop improvement and management practices	number of household benefitted  Number of field demonstrations organized and community participation ensured	crop improvement of major cereals and focus is not given to drought tolerant traditional crop species that have more potential in-terms of withstanding moisture stress	production of drought tolerant varieties of crops strengthened and traditional crop species such as <i>findi</i> , cassava, sweet potato included.	covering all 10 selected districts in 3 regions and at least 250 households directly benefit through the field demonstrations	locations covering all 10 selected districts in 3 regions and at least 250 additional households directly benefit through the field demonstrations	improved verities in-terms of economic benefit at the household level completed for all 20 sites and feedback from the communities documented.	engaged in field demonstrations and have access to drought tolerant crop varieties of <i>findi</i> , cassava, sweet potato, dual purpose cowpea	Evidences of new varietal distribution through certified seed production by NARO	stakeholders and willing to promote traditional crop species such as <i>findi</i>
Output 3.2.1 Drought tolerant crop seeds produced, demonstrated at field level with strengthened value addition and marketing	Number of field demonstrations organized to promote drought tolerant crop species  Number of certified seed production sites established and number of farmers involved in seed/planting material production  Number of training events organized to promote value addition and marketing of <i>findi</i> , cassava, sweet potato and dual purpose cowpea  Number of NARI staff trained/under took visits to international research centres  Number and type of processing equipment supplied to farmers and	Field demonstrations focus on varies for higher yield  No specific field demonstrations organized focusing on climate change adaptation  Traditional crops such as <i>findi</i> , drought tolerant cassava, sweet potato and dual purpose cowpea are sidelined due to new yield enhancement oriented research programmes by NARI  Exchange visits by NARI scientists focused on conferences and workshops and not specifically focused on	Community mobilization and profiling study conducted in 10 locations covering all 10 selected districts  Certified seed production sites selected and activities initiated in 5 sites by involving small-scale entrepreneurs  Field demonstrations on drought tolerant crop species ( <i>findi</i> , cassava, sweet potato and dual purpose cowpea) established in 5 districts of CRR-N and URR-N for <i>findi</i> and all 10 districts involving 20 communities for traditional and industrial cassava;	Community mobilization and profiling study conducted in additional 10 locations  Certified seed production continued in 5 sites by involving small-scale entrepreneurs  Field demonstrations on drought tolerant crop species ( <i>findi</i> , cassava, sweet potato and dual purpose cowpea) established in all 10 districts benefiting 20 communities and a minimum of 500 households with	Certified seed production, demonstration of drought tolerant crops ( <i>findi</i> , cassava, sweet potato, dual purpose cowpea) are demonstrated  Training programmes on processing, packaging, storing and marketing of traditional crops conducted in all 20 communities  NARI promotes ideal cereal legume combination in at least 5 sites covering all 10 districts to directly benefit at least 500 farm families	NARI provides continuous support to the certified seed production and field demonstrations in all 20 sites  A comprehensive assessment and strategy prepared to up-scale potential traditional crops  Regular exchanges and knowledge sharing promoted between NARI and at least 3 international institutions	Drought tolerant crop varieties of <i>findi</i> , cassava, sweet potato, dual purpose cowpea introduced in all 10 districts directly benefiting 1500 households (200 HH benefit from <i>findi</i> , 300 HH benefit from sweet potato, 500 HH benefit from cassava).	Seed production manuals and field visit schedule by DOA/NARI and relevant monitoring reports  Periodical monitoring reports of field demonstrations  Visit programme of the NARI/DOA staff to the demonstration plots and feedback from farmers  Visit report and recommendation of the NARI staff's visit to international centres in the region.	NARI is empowered and capable of establishing field demonstrations together with DOA and other field level staff to promote drought tolerant crop species and cropping systems  NARI collaborates closely with other activities carried out through DOA and DLS at the regional, district and community levels

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
	number of farmer groups benefitted	transfer of technology from the CG centers	dual purpose cowpea based inter-cropping systems demonstrated in 10 locations  At least 1 findi processing machine supplied to one demonstration site (subject to cost)	each demonstration  AT least 3 NARI scientists visit international research centres in the region with a specific focus on technology transfer	Local producers are linked with business development services in all 20 communities through consultations in relation to value addition and marketing.				
Output 3.2.2 Additional area brought under cropping by developing tidal irrigation and ensuring value addition and market linkages	Number of hectares brought under cropping by developing tidal irrigation (CRR-N region)  Number of farmers/households benefitted from the investment  Number and type of marketing linkages established to promote post-harvest handling and marketing	There is a limited area under rice cultivation and some of them are already affected by salinity  There is sustainable model to link rice production, processing and marketing	Feasibility study in CRR-N region and selection of potential sites for introducing tidal irrigation  Establishment of necessary infrastructure, land reclamation to bring 40 hectares of land under tidal irrigation	Provision of inputs to farmers to start cultivation in reclaimed land with tidal irrigation facility benefiting at least 200 farmers  At least one processing facility provided to the farmers  Consultations to establish linkages between producers and buyers initiated	Continue producing crops using tidal irrigation facility  Processed produce packaged by involving community networks in selected locations  At least one producer – buyer agreement completed	The lessons learnt from the tidal irrigation models packaged and available for up-scaling  Cost-benefit analysis of tidal irrigation system completed for at least one contiguous site	AT least 40 hectares of land brought under tidal irrigation benefiting at least 200 farmers  At least one producer – buyer agreement completed	Periodical progress reports  Reports of the visits by project team  Operations and delivery report  Cost-benefit analysis of tidal irrigation systems	The topography and land forms are suitable for tidal irrigation in CRR-N region and Government still promotes the technology to ensure food security of most vulnerable communities.

#### Component 4: Enhancing resilience of rangelands by implementing improved management practices

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 4.1. Improved management of rangelands and increased access of livelihood assets to sustain sources of income by livestock dependent communities	(AMAT Indicator 1.2.1.3): Climate resilient agricultural (livestock) practices introduced to promote food security (type and level)	The rangelands are degraded and over grazed due to non- availability of proper management alternatives  There is no cattle tracks and lack of local conventions/ regulations with regard to grazing affects the rangeland productivity	Community mobilization conducted and sites selected for implementing rangeland management practices	At least 5 sites supported with deferred grazing, intensive feed gardens, and watering points	All 10 communities have conventions and local regulations in grazing and management of rangeland resources	All 10 sites provided with institutional support for regular operation and implementation of the conventions/reregulation for rangeland management	10 deferred grazing areas established and reseeded with multi-purpose grass/legume species, 10 intensive feed gardens established in each district, 6 livestock water points established, demarcation of cattle tracks in place benefiting 1000 HH.	Physical verification of investments and periodical progress reports	The rangeland management committee is willing to sustain and follow the regulations agreed and government provides continuous support for implementation
Output 4.1.1. Resilience of rangelands enhanced by promoting differed grazing areas and reseeded of multi-purpose grass and legume species	Number of communities benefit from establishment of deferred grazing areas  Number of rangeland management community is functioning effectively and efficiently using the resources  Number of intensive feed gardens developed and operational with community participation	There are very few successful models of deferred grazing sites exists	Community mobilization in all 10 sites initiated  Identification sites for establishing differed grazing, reseeded of multi-purpose grass/legume species and surface ponds  Local rangeland management committee established in all 10 sites	Establishment of 10 deferred grazing areas initiated  Establishment of all 10 intensive gardens initiated  Multi-purpose grass/legume species reseeded in all 10 sites	Establishment of 10 deferred grazing areas and 10 intensive feed gardens completed	Sustained support by DLS ensured and the feedback from communities integrated into the regulations and conventions of the rangeland management committees.	10 deferred grazing areas established and reseeded with multi-purpose grass/legume species, 10 intensive feed gardens established (one in each district)	Physical verification and periodical progress reports	The local grazing associations follow rules and regulations and DLS provides sustained support to maintain the established investments
Output 4.1.2. Provision of livestock water points and improved	Number of surface watering points created and number of livestock herders benefitted	There are few borehole water points developed, but not focused on less expensive water harvesting	Demarcation and marking of cattle tracks initiated in 5 sites	At least 3 surface ponds completed in selected sites	Additional 3 surface ponds completed in selected sites	Sustained support by DLS ensured and the feedback from communities on surface water points and	6 livestock water points established, demarcation of cattle tracks in place in 10 sites	Physical verification and periodical progress reports	The rangeland management committee is capable of effectively implementing the

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
demarcation of cattle tracts	Area covered under demarcation and marking of cattle tracts to increase cattle access	<p>surface ponds to provide water for livestock during the rainy season</p> <p>Very limited sites with demarcation and marking of cattle tracts in LRR-N, URR-N and</p>	Consultations to establish local conventions/regulations by community members	Demarcation and marking of cattle tracts to increase cattle access completed in all 10 sites	The agreed conventions/regulations implemented	demarcation and marking of cattle tracts integrated into the regulations and conventions of the rangeland management committees.	benefiting 1000 HH.	Progress of implementation and ownership of the rangeland management committee in implementing the plans/rules and regulations	conventions and rules and regulations

# Precise baseline will be developed through baseline survey before the commencement of the project interventions.

## Component 5: Monitoring, Evaluation and Knowledge Management

Results chain	Indicators	Baseline#	Milestones				End of project target	Means of verification and responsibility	Assumptions
			Year 1	Year 2	Year 3	Year 4			
Outcome 5.1. Project implemented with a results based management framework and best practices and lessons learned disseminated widely	M & E system developed and implemented effectively	Baseline projects and programmes are established, but these projects and programmes lacks climate change adaptation perspective	M & E plan developed  AMAT tool established  Baselines established	Progress reports prepared and submitted	Mid-term workshops and evaluation/monitoring conducted	Final workshops and evaluations conducted	Very well structured baselines, evaluation of project at the end against the established baselines.	Inception reports, baseline survey reports, mid-term monitoring/evaluation reports and final evaluation reports	The project M & E framework adhere to the practical realities and deliverables are clearly quantified.
Output: 5.1.1. Monitoring and evaluation system designed, implemented at all levels and project related good practices and lessons learned documented and disseminated	Agreed M & E plan at the start of the project  AMAT tool available and followed during the monitoring  Targets and baselines clearly defined  Number and typology of good practices integrated and disseminated for wider adoption and replication	There is no comprehensive document elaborating good practices for adapting agriculture to climate change	M & E Plan prepared and agreed with stakeholders  AMAT tool revised taking care of recent developments at the start of the project  Baseline survey conducted within 3 months after initiation of the project	Questionnaire design, survey documents prepared for mid-term review/evaluation  Periodical supervision visits by DOA/DLS from regional and district levels	Mid-term impact review/evaluation  Compilation of good practices  Preparation of policy briefs for wider circulation  Conduct of initial cost benefit analysis of the good practices	Final evaluation  Compilation of all good practices and consolidation for replication  Final workshop for knowledge sharing and sustainability of investments and technical assistance  Preparation of terminal reports	A well structured M & E system in place and implemented as per the M & E plan  At least 15 good practices examples consolidated and cost benefit analysis conducted and shared widely for replication/up-scaling	M & E reports  Periodical progress reports  Document with compiled good practices examples	The M & E framework is simple enough to be implemented and the activities follows the results matrix and M & E framework is aligned closely with the results matrix.  The baseline data is credible and data collection completed within stipulated timeframe.

# precise baseline will be developed through baseline survey before the commencement of the project interventions.

**ANNEX II: WORK PLAN (RESULTS BASED)**

Output	Activities	Responsible institutions	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4												
Output 1.1.1 Technical capacity of institutions at all levels (national, regional, district and local) focusing on adaptation in agriculture sector strengthened	Training needs assessment	MOA, DWR	■	■														
	Training curriculum development	MOA, DWR		■	■				■	■								
	Training at National level (TOT)	MOA, DWR			■	■				■	■							
	In-service training for regional/district agriculture extension and livestock services staff	MOA, DWR				■	■				■	■						
	Training for food technology services	MOA				■						■						
	Entrepreneurship training	MOA				■	■					■	■					
Output 1.2.1 Quality-control laboratory in National Environment Agency (NEA) strengthened to monitor and analyse the impacts of adaptation practices on the natural resource and environment	Assessment of existing lab facilities in NEA	NEA	■															
	Procurement of instruments and tools	NEA		■														
	Training to staff on maintenance of instruments and quality control	NEA			■													
	Assessment of impact of adaptation practices on natural resources	NEA					■	■				■	■		■	■		
Output 1.3.1 National Adaptation Planning (NAPs) in agriculture sector facilitated and climate change concerns mainstreamed into national agriculture policies, strategies and programmes	National level consultations	DWR	■	■			■	■										
	Training on mainstreaming	DWR		■	■													
	Regional consultations	DWR		■	■		■	■										
	Consolidation workshop	DWR								■								
	NAP documentation (sectoral perspectives)	DWR								■	■							
Output 2.1.1 Improved database, tools and methods for vulnerability and risk assessment, agro-climatic monitoring for food security developed at the national and local level and staff trained	Inter-agency consultations and data inventory	DWR	■	■														
	Data collection and risk and vulnerability analysis	DWR		■	■													
	Training programme on data analysis and management	DWR			■	■												
	Vulnerability and risk mapping	DWR			■	■												
	Capacity development on analytical tools and methods on crop monitoring and yield forecasting	DWR				■	■											
	Transfer of tools and methods	DWR					■	■										
	Improvement of agro-met bulletins and validation	DWR					■	■			■	■		■	■		■	■

Output	Activities	Responsible institutions	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4												
Output 2.2.1 National Framework for Climate Services (NFCS) supported and weather and climate forecasting customized for agriculture sector and capacity enhanced	National level consultations	DWR																
	Establishment of user interface platforms	DWR																
	Delivery of products and services at the national level	DWR																
	Improved weather and climate information provided to regional, district and local users	DWR																
	Feedback mechanisms established and information use validated	DWR																
Output 3.1.1 Location specific livelihood diversification and income generation models improved and implemented	Feasibility study on community gardens	MOA, DOA, DLS																
	Establishment of infrastructure	MOA, DOA, DLS																
	Establishment and technical support for community gardens	MOA, DOA, DLS																
	Establishment of income generation activities and support at the community level	MOA, DOA, DLS																
	Training to community representatives on livelihood diversification	MOA, DOA, DLS																
	Agribusiness and value addition related activities	MOA, DOA, DLS																
	Technical support for poultry and small ruminant production	MOA, DOA, DLS																
Output 3.2.1 Drought tolerant crops demonstrated with strengthened value addition and marketing	Strengthening certified seed production of drought tolerant varieties of crops	MOA, NARI																
	Improving technical capacity of NARI to evaluate traditional crops	MOA, NARI																
	Activities of promoting hungry rice in two regions	MOA, NARI																
	Demonstration of drought tolerant traditional varieties of crops	MOA, NARI																
	Promotion of dual purpose cowpea and related cropping systems through field demonstrations	MOA, NARI																
Output 3.2.2 Additional area brought under cropping by developing tidal irrigation and ensuring value addition and market linkages	Identification and feasibility study for tidal irrigation systems	MOA, DOA																
	Land reclamation and development	MOA, DOA																
	Technical support and transfer of agronomic techniques to promote cultivation using tidal irrigation	MOA, DOA																

Output	Activities	Responsible institutions	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4												
	Documentation of case studies for replication and up-scaling	MOA< DOA																
Output 4.1.1. Rangelands improved by promoting differed grazing areas and reseeded of multi-purpose grass and legume species	Identification of community network and community level consultations	MOA, DLS																
	Establishment of deferred grazing areas	MOA, DLS																
	Re-seeding of multi-purpose livestock grass/legume species	MOA, DLS																
	Establishment of intensive feed gardens	MOA, DLS																
	Transfer of technologies to sustain the deferred grazing areas and re-seeded rangelands	MOA, DLS																
	Capacity development related to bushfire management measures	MOA, DLS																
Output 4.1.2. Provision of livestock water points and improved demarcation of cattle tracks	Survey and identification of location for watering points	MOA, DLS																
	Establishment of watering points	MOA, DLS																
	Demarcation of cattle tracks to increase cattle access	MOA, DLS																
	Community consultations and establishment of local conventions through rangeland management plans	MOA, DLS																
Output: 5.1.1. Monitoring and evaluation system designed, implemented at all levels and project related good practices and lessons learned documented and disseminated	Inception, annual planning meetings and final workshop	MOA, DWR, NARI, NEA																
	Baseline survey for impact evaluation	MOA, DWR, NARI, NEA																
	Mid-term evaluation/review including questionnaire development and survey	MOA, DWR, NARI, NEA																
	Final impact evaluation	MOA, DWR, NARI, NEA																
	Supervision visits by DOA/DLS staff	MOA, DWR, NARI, NEA																
	Monitoring by regional directorates	MOA, DWR, NARI, NEA																
	Project M & E reports	MOA, DWR, NARI, NEA																
	Project terminal reports	MOA, DWR, NARI, NEA																

### ANNEX III: RESULTS BASED BUDGET



Budget  
GCP-GAM-033.xlsx

				Component 1	Component 2	Component 3	Component 4	Component 5		
	Unit	Number of units	Unit cost	Total	Total	Total	Total	Total	PM	GEF
<b>5300 Salaries professionals</b>										
<b>5300 Sub-total salaries professionals</b>										
<b>5570 International Consultants</b>										
Monitoring and Evaluation Expert	weeks	14	2500	9545	6364	9545	6364	3182		35000
Vulnerability and risk assessment expert	Weeks	10	2500		25000					25000
Agrometeorology and crop monitoring expert	Weeks	10	2500	0	25000	0	0	0		25000
ICRU				592	3495	592	395	197		5270
<b>Sub-total international Consultants</b>				10137	59858	10137	6758	3379	0	90270
<b>National consultants</b>										
National Project Coordinator (NPC)	Month	48	2000	26182	17455	26182	17455	8727		96000
Regional Coordinators (3)	Month	144	500	0	0	43200	28800	0		72000
Extension support/Community Mobilizers (10)	Month	400	200	0	0	48000	32000	0		80000
Policy, institutions and mainstreaming expert	Month	12	1500	18000	0	0	0	0		18000
Climate data analysis and vulnerability and risk assesemnt expert	Months	18	1500	0	27000	0	0	0		27000

Livelihoods Development and Agribusiness Expert	Months	24	1500	0	0	36000	0	0		36000
Livestock and rangeland management expert	Months	24	1500	0	0	0	36000	0		36000
Operations and administration expert	Months	48	3500	0	0	0	0	0	168000	168000
Project finance expert	Months	48	2374	0	0	0	0	0	113952	113952
Communication Expert	Months	48	1500	19636	13091	19636	13091	6545		72000
Driver/Messenger	Months	48	300	3927	2618	3927	2618	1309		14400
ICRU				4200	3730	10971	8058	1028	17481	45468
<b>Sub-total national Consultants</b>				71946	63894	187916	138021	17610	299433	778820
<b>5570 Sub-total consultants</b>				82083	123752	198053	144780	20989	299433	869090
<b>5650 Contracts</b>										
Output 1.1.1: Capacity development support under component 1 for national and regional level trainings (training needs assessment, curriculum development, delivery of training and manuals preparation)	Lumpsum	2	30000	60000	0	0	0	0		60000
Output 1.1.1: Capacity development support under component 1 for entrepreneurship and food technological services (training needs assessment, curriculum development, delivery of training and manuals preparation)	Lumpsum	1	30000	30000	0	0	0	0		30000
Output 1.1.2. Strengthening of Quality-control laboratory in National Environment Agency (NEA) instrumentation and capacity development activities	Lumpsum	2	120000	240000	0	0	0	0		240000
Output 2.1.1 Strengthening data, vulnerabilities and risks assessment and strengthening of agromet and food security bulletins	Lumpsum	1	50000	0	50000	0	0	0		50000

Output 2.1.2. Setting up of weather and climate information hubs at 3 sites in 3 regions and periodical communication of weather and climate information to users	Lumpsum	3	50000	0	150000	0	0	0	150000	
Output 3.1.1 Feasibility study and detailed analysis of sustainable livelihood diversification and income generation model at community level	Lumpsum	1	20000	0	0	20000	0	0	20000	
output 3.2.1. Strengthening of certified seed production of drought tolerant varieties involving entrepreneurs to benefit 500 farmers in 10 districts of 3 regions	Lumpsum	10	15000	0	0	150000	0	0	150000	
Output 3.2.1 Development of 5 year research plan and strengthening of adaptive research programme of NARI	Lumpsum	1	30000	0	0	30000	0	0	30000	
output 3.2.1 Drought tolerant cassava, hungry rice and dual purpose cowpea demonstrations and input provisions in 10 communities for 3 years (10 x 3 = 30)	Lumpsum	30	6000	0	0	180000	0	0	180000	
Output 5.1.1 Medium and final evaluation (External M&E consultant/FAO Evaluation unit)	Lumpsum	2	40000	0	0	0	0	80000	80000	
<b>Sub-total Contracts</b>				330000	200000	380000	0	80000	0	990000
<b>5900 Travel</b>				0	0	0	0			
Travel - Consultants – International (+DSA)	Numbers	7	7000	0	49000	0	0	0	49000	
Travel - Consultants – National (+DSA)	years	4	20000	21818	14545	21818	14545	7273	80000	
Travel – Training	years	3	25000	75000	0	0	0	0	75000	
Travel - NARI Scientists exchange visits (1 week each travel + DSA)	Numbers	3	8000	0		24000			24000	

Travel - national staff	Lumpsum	1	10000	2727	1818	2727	1818	909		10000
<b>5900 Sub-total travel</b>				99545	65364	48545	16364	8182	0	238000
<b>5023 Training and workshops</b>										
M &E: Inception workshop, Annual planning workshops, Final workshop	Lumpsum	5	3000	0	0	0	0	15000		15000
Output 1.1.1 National level TOT training programme (4 trainings/year 4 days each (25p) in year 1 and 3) on climate change adaptation	Trainings	8	4000	32000	0	0	0	0		32000
Output 1.1.1.Regional (3 trainings of 4 days - 90p) and district (2 in-service trainings of 4 days - 60p) level training climate change adaptation (year 1 & 3)	Trainings	10	3500	35000	0	0	0	0		35000
Output 1.1.1. Training for outreach programme of food technology service (3 days, 16p)	Trainings	1	3000	3000	0	0	0	0		3000
Output 1.1.1. Entrepreneurship training (5 trainings of 2 days each, 20 participants/training) at district level	Trainings	5	2000	10000	0	0	0	0		10000
Output 1.1.3. Training on mainstreaming for National Adaptation Planning (NAPs) (3 days, 30 participants)	Trainings	1	3000	3000	0	0	0	0		3000
Output 1.1.3. National and regional level consultations (5 Nos) and a consolidation workshop (1) for NAPs	Workshops	6	2500	15000	0	0	0	0		15000
Output 2.1.1 Training on vulnerability and risk assessment and agrometeorology tools to Multi-Disciplinary teams (2 in-service trainings of 1 week each)	Trainings	2	5000	0	10000	0	0	0		10000

Output 2.1.2: National Framework for Climate Services workshops (2/year x 3 years) and 1 national and 2 regional trainings (3 days each) on interpretation of weather and climate information	Workshops/ Trainings	9	3000	0	27000	0	0	0	27000	
Output 3.1.1. Community level workshops/meetings/trainings on household level livelihoods (beekeeping etc.), value addition & marketing and linking to financial institutions (1 day each x 3 types x 10 districts x 1/year for 3 years)	Meetings, workshops & trainings	90	300	0	0	27000	0	0	27000	
Output 3.2.2 Community mobilization, development of rangeland management plans, and establishment of local conventions at 10 sites	Consultations, workshops	30	500	0	0	0	15000	0	15000	
<b>5023 Sub-total training</b>				98000	37000	27000	15000	15000	0	192000
<b>6000 Expendable procurement</b>										
Output 3.1.1. Location specific livelihood diversification and income generation models improved and implemented (Integrated model)	No. of Groups (250 farmers each)	10	200000	0	0	2000000	0	0	2000000	
Output 3.2.2. developing tidal irrigation and ensuring value addition and market linkages (40 hectares)	40 ha of area under tidal irrigation	40	7000	0	0	280000	0	0	280000	
Output 4.1.1. Establishment of "Deferred" grazing areas and reseeding of multi-purpose grain legumes	No. of sites	10	25000	0	0	0	250000	0	250000	
Output 4.1.2. Provision of livestock water points and improved demarcation of cattle tracts	No. of sites	10	30000	0	0	0	300000	0	300000	
Output 5.1.1. Compilation of good practices, knowledge management, document printing and communication and visibility	Lumpsum	4	10000					40000	40000	

Agriculture inputs and tools for implementation of good practices (Comp 3 & 4)	Locations	10	10000	0	0	60000	40000	0		100000
Periodical M & E reporting (inception, semi-annual, annual, co-financing and terminal reports)	Numbers	10	1000	2727	1818	2727	1818	909		10000
Utilities (telephone, internet, cleaner, fuel and vehicle maintenance, etc) for PMU and regional offices	year	4	24000	26182	17455	26182	17455	8727		96000
<b>6000 Sub-total expendable procurement</b>				28909	19273	2368909	609273	49636	0	3076000
<b>6100 Non-expendable procurement</b>				0						
Support PMU office (desk top computers, multi-media sets, projector, printer, photocopier, essential furniture)	Lumpsum	1	15000	4091	2727	4091	2727	1364		15000
Support Regional Project Office - 3 (desk top computers, multi-media sets, projector, printer, photocopier, essential furniture)	Numbers	3	10000	8182	5455	8182	5455	2727		30000
Vehicle/operation/rental	Lumpsum	1	40000	10909	7273	10909	7273	3636		40000
Power tillers	Lumpsum	20	5000	0	0	100000	0	0		100000
Processing machines and post harvest machinery for pilot demionstrations	Numbers	3	16000	0	0	48000	0	0		48000
Cassava milling mechine	Numbers	3	10000			30000	0	0		30000
Motocycles for district level logistics	Numbers	13	4000	0	0	31200	20800	0		52000
<b>6100 Sub-total non-expendable procurement</b>				23182	15455	232382	36255	7727	0	315000
<b>6300 GOE budget</b>										
Contingencies	year	4	5817	6345	4230	6345	4230	2115		23266
<b>6300 Sub-total GOE budget</b>				40436	26957	458836	68557	13479	0	608266
<b>TOTAL</b>				702155	487800	3713726	890228	195013	299433	6288356

## **ANNEX IV: TERMS OF REFERENCE (TOR) FOR NATIONAL AND INTERNATIONAL EXPERTS**

### **National Project Director (NPD) (Appointed by the Government and no cost to the project)**

Under the supervision of the Ministry of Agriculture (MOA), and in close coordination with the FAOR office in Banjul, The Gambia and FAO Technical Officer (s), the National Project Director (NPD) will be responsible for the overall execution of the project. He/she will ensure adequate collaboration between the project team and all selected regional and district offices; as well as other government agencies at national, regional, district and local levels and other partners thus ensuring smooth and effective project implementation. He/she will be responsible for the organizational and logistical arrangements and the mobilizing and coordinating the technical support services required from national level for the effective implementation of all aspects of the project. He/she will be responsible for the overall reporting *vis-à-vis* the MOA and FAO. In particular, he/she will:

- Be responsible for overall management and implementation of the project activities
- participate in the preparation of the detailed work plan for the project;
- assist in identifying candidates for the national consultancy;
- supervise and advise on the implementation of the field activities;
- provide overall technical guidance to the design and implementation of the national, district and local level training and capacity building process;
- ensure intensive and regular networking and transparent collaboration with other government line agencies at national, district and local levels as well as with other partner agencies and subcontractors;
- act as a member secretary to the Project Steering Committee (PST) and liaise with other members of the steering committee for inter-ministerial and departmental collaboration and for effective delivery of project outputs and outcomes.
- ensure project representation and contribute to relevant meetings/consultation related to climate change adaptation in agriculture sector.

**Qualifications:** longstanding field experience at local and national level with planning, implementation and monitoring of sustainable agricultural development and/or natural resource management and/or climate change adaptation activities.

**Duty Station:** Banjul and need based travel to selected regions and districts.

**Duration:** entire period of the project.

### **National Project Coordinator (NPC)**

Under the overall supervision of the FAOR and the technical supervision of the Lead Technical Office (LTO)/HQ Officers, and in close collaboration with the relevant agencies of the Ministry of Agriculture (MOA) and other project partners, the national expert will conduct the following major tasks at national and local levels;

- provide overall implementation support to the National Project Director (NPD) and provide technical coordination support for smooth implementation of the project.
- assist NPD in organizing project meetings, workshops and training programmes at national, district and local levels;
- facilitate the work of the national and international experts, project partners, subcontractors in carrying out their situation assessment, training need assessment, documentation of climate change adaptation practices;
- assist the Project Steering Committee members through the NPDC in preparation of relevant documents and organization of periodical steering committee meetings
- conduct a series of brainstorming sessions with a range of key stakeholders to discuss the future role and the comparative advantage of MOA in Climate Change Adaptation and collect the expectations from other agencies *vis à vis* the role of MOA in CCA at national and local level;
- analyse the institutional aspects and policy requirements to better link the agriculture sector into Climate change policies and plans in the Gambia and monitor mainstreaming of CC priorities into relevant policies and plans;
- building on the lesson learned from project implementation process and pilot interventions in selected districts, facilitate a discussion process within MOA at all levels to better integrate agricultural perspectives.
- assess institutional and policy requirements to better link the current and longer term climate change adaptation at district and local levels;
- prepare a field demonstration plan at the beginning of each season and assist the NPD in organizing the demonstrations through subcontracted organizations and district technical coordinators;
- assist the NPC in organizing workshops, training programmes, study tours and exchange visits;
- participate in the project wide workshops and training programmes organized by MOA in association with the subcontracted organizations;
- assist the subcontracted organizations in setting up of climate information networks within MOA and at the district levels;
- assist district level officers and community mobilizers in preparing the community level range management plans and to implement the priorities.
- Assist NPD and FAO to prepare periodical reports (workshop reports, inception, mid-term review and evaluation and monitoring reports)
- submit a substantive technical report at the end of the assignment
- any other duty required to support a successful implementation of the project.

**Qualifications:** advanced degree in agriculture and related subjects together with long standing field experience at local and national level on planning, implementation and monitoring of climate change adaptation programmes in the Gambia

**Duty Station:** Banjul, The Gambia and need based travel to selected regions and districts.

**Duration:** 48 months

## **National Experts**

### **Regional Coordinators (3)**

Under the overall supervision and guidance of the FAOR and the technical guidance of relevant technical units in FAO and in close collaboration with Project Management Unit (PMU) and Regional Technical Advisory Committee (RTAC), FAO technical backstopping officers and other project staff and partner agencies, the regional technical coordinators will perform the following tasks:

- collect relevant primary and secondary data from the district and community councils as and when required;
- support Regional Project Unit (DPU) to implement the project in respective districts and communities;
- assist in organizing and conducting orientation workshops/meetings in each community to explain the project objectives and activities;
- initiate awareness creation process on climate change adaptation and support the project implementation team in awareness raising efforts at district and community levels;
- identify local partners/farmers groups/farmer field school/ individual households, including women and women's groups, potentially interest to collaborate in the pilot demonstrations;
- promote and facilitate discussion between farmers, farmer groups and district task groups about selection of locally preferred/ acceptable climate change adaptation options for pilot testing;
- assist in organizing field demonstrations at field level to test and familiarize viable adaptation practices;
- assist to implement and monitor the field demonstrations and collect periodical data for comparison and impact assessments;
- assist the district level officers in preparing easily understandable extension tools and methods for familiarising "good practice" examples;
- assist in organizing district and community level workshops, participatory discussions, brain storming sessions and training programmes;
- facilitate broader replication of successfully tested adaptation practices and technology options within the farming communities;
- liaise with the project team at the national level and district level implementation task groups on day to day activities and provide feedback to all necessary project partners, consultants and other project staff.

**Qualifications:** Basic/Undergraduate degree in agriculture and/or related subjects together with field/on-farm experience on planning, implementation and monitoring of field demonstrations, disaster preparedness and climate change adaptation programmes/activities. Master's degree with experience of conducting of field trials/demonstrations is preferable.

**Duty Station:** Selected 3 regions of the project in the Gambia and need based travel to communities and to Banjul.

**Duration:** 48 months

## **National Expert**

### **Livelihoods Development and Agribusiness Expert**

Under the overall supervision of the FAOR and the technical supervision of the relevant technical units in FAO, and in close collaboration with the Ministry of Agriculture (MOA) and other partners, the national expert on livelihood development will carry out the following tasks:

- in-depth assessment of the physical/environmental parameters influencing or influenced by the local hazard context, and conditions for agricultural production;
- livelihood profiling using existing methodologies to characterize:
  - the livelihood groups most vulnerable to climate risks;
  - their capacity and coping strategies;
  - their existing agricultural practices (crops, livestock, fisheries, and homestead, etc.);
  - their access to the natural resource base, agricultural inputs, services and other assets;
- local institutional assessment; their role, capacities and strengths weaknesses, needs (including training needs) and gaps in the context of climate change adaptation in agriculture; capacities of local institutions to implement coping and adaptation strategies against climate risks, giving special consideration to assessing the role of women, the elderly and children; local perceptions and ideas about the role, capacities and needs (including training needs) of farmer associations.
- development and prioritization most suitable and location specific livelihood strategies and income generating activities relevant to different livelihood groups including women and most vulnerable groups;
- review and assess from a gender perspective relevant materials related to gender, natural resource management and lessons learned from past and ongoing development and research projects in the Gambia related to climate change adaptation;
- with technical support from the ESW officer, provide technical and methodological advice for inclusion of gender issues in project baseline and monitoring and evaluation activities, paying particular attention to the livelihood profiling and local perceptions components of the project baseline studies;
- provide technical advice and support to the district technical team and community level mobilizers to properly identify and prioritize suitable livelihood options
- provide technical support for implementation of livelihood options and income generating activities at the community level
- Support the national expert on rangeland management, who will develop an integrated approach for the improvement of vegetative cover and range resources management measures by providing gender-sensitive considerations.
- at the conclusion of the consultancy, prepare a report covering livelihood development and gender

**Qualification:** Higher degree in social sciences and with sufficient background/experience in livelihood development and gender related aspects. Experience in working with farmers and extension workers to manage climate risks is preferred.

**Duty Station:** Banjul, The Gambia and need based travel to pilot districts.

**Duration:** 24 months

## **National Expert**

### **Climate data analysis and vulnerability and risk analysis**

Under the overall supervision of the FAOR and the technical supervision of the relevant units in FAO, and in close collaboration with the Department of Water Resources (DWR) and MOA and with other project partners, the expert will conduct the following major tasks at national and local levels;

- provide technical advice on climate data collection, analysis and synthesis of climate change scenarios to be used for land use scenario analysis
- contribute to improvement of databases, tools and methods for vulnerability and risk assessment
- conduct basic assessment for designing a comprehensive risk and vulnerability data base for selected watersheds in close collaboration with the international expert and also the contractor to be hired for technical support on assessment
- provide technical support for organizing relevant training on risk and vulnerability assessment
- contribute to strengthening of the current database management systems in the Department of Water Resources and Ministry of Agriculture (MOA)
- provide technical advice to implement tools and methods for assessment of vulnerability and impacts

**Qualifications:** advanced degree in meteorology/agro-meteorology or in biological sciences with significant work experience in agricultural meteorology.

**Duty Station:** Banjul, The Gambia and need based travel to districts.

**Duration:** 18 Months

## **National Expert**

### **Livestock and Rangeland Management Expert**

Under the overall supervision of the FAO Representative in the Gambia and the technical supervision of the relevant units in FAO and in close collaboration with the Ministry of Agriculture (MOA) and Department of Livestock Services (DLS), the national project focal point, FAO technical backstopping officers and other project staff, the national expert in rangeland management will perform the following tasks:

- review experience gained in the Gambia on the rangeland management and synergy involved in crop-livestock interaction to enhance productivity and reduce vulnerability to drought and other climate related risks;
- prepare inventory of rangeland management techniques and crop-livestock management techniques (relevant to dryland and mountain ecosystems in the pilot districts) that show the most promise in improving both productivity and environmental benefits (i.e. ecosystem resilience, increased biomass cover) and takes into account vulnerabilities related to climate change and drought;
- identify gaps in the technical skills and knowledge of farmers and extension experts in rangeland management and crop-livestock interaction and guide the Project Implementation;
- provide technical input and serve as a resources person at the national and district level workshops and in the training of local facilitators;

Qualifications: Advanced degree in agriculture with emphasis on rangeland management and livestock management, feed and rangeland management. He/she would provide key technical support for crop specific programme issues at the pilot site. Fluent written and spoken English and Sesotho languages and excellent computer skills are essential.

Duty Station : Banjul, The Gambia and need based travel to regions and districts

Duration : 24 months

## **National Expert**

### **Policy and Mainstreaming**

Under the overall supervision of the FAOR and the technical supervision of the relevant units in FAO, and in close collaboration with the Department of Water Resources (DWR), Ministry of Agriculture (MOA) and other project partners, the contractor will conduct the following major tasks at national and local levels;

- conduct a series of brainstorming sessions with a range of key stakeholders to discuss the future role and the comparative advantage of MOA and DWR in climate change adaptation
- analyse the institutional aspects and policy requirements to better link the agriculture sector into new climate change policy and strategy in the Gambia
- assess institutional and policy requirements to better link the current and longer term climate risk management activities at district and local levels;
- participate in all national level policy development activities related to agricultural sector and analysis the possibilities for mainstreaming climate change concerns into agriculture and food security policies and plans
- assist NPD in organizing consultation meetings at the national level to identify needs for mainstreaming
- assist to analyse the policies, plans and strategies of agriculture sector and assess the level of integration of climate change concerns into those documents
- assist to analyse the climate change policies, plans and strategies and identify the level of integration of agriculture and food security aspects into the climate change policies
- submit a substantive technical report at the end of the mission;
- any other duty required to support a successful implementation of the project.

**Qualifications:** advanced degree in agriculture and related subjects together with long standing field experience at local and national level on planning, implementation and monitoring of climate change adaptation programmes in the Gambia. Experience in institutional assessment and mainstreaming is an advantage.

**Duty Station** : Banjul, The Gambia and need based travel to regions and districts.

**Duration** : 24 months.

## **International Expert**

### **Vulnerability and risk assessment expert**

Under the overall supervision of the FAOR and the technical supervision of the relevant units in FAO, and in close collaboration with the Department of Water Resources (DWR) and other project partners, the contractor will conduct the following major tasks at national and local levels;

- provide technical advice on improvement of databases, tools and methods for vulnerability and risk assessment and to define the hotspots of vulnerability
- conduct basic assessment for designing a comprehensive risk and vulnerability data base for selected watersheds
- provide technical support for organizing relevant training on risk and vulnerability assessment
- contribute to strengthening of the current database management systems in the Ministry of Agriculture (MOA) and Department of Water Resources (DWR)
- provide technical advice to implement tools and methods for assessment of vulnerability and impacts
- work closely with the contractor to be hired through LOA for assessment of vulnerabilities and risks for three livelihood zones

**Qualifications:** advanced degree in meteorology/agro-meteorology or in biological sciences with significant work experience in agricultural meteorology.

**Duty Station:** Banjul, The Gambia and need based travel to districts.

**Duration:** 10 weeks

## **International Expert**

### **Agro-meteorology and Crop Monitoring**

Under the overall supervision of the FAOR and the technical supervision of the relevant technical units in FAO, in close collaboration with the Ministry of Agriculture (MOA), the National Project Director (NPD), FAO technical backstopping officers and other project staff, the national expert will perform the following tasks:

- add to the current climate and crop data collection practice, and routine parameters/questions sheets so that the data will become more useful as a basis for climate risk management related information and crop monitoring and yield forecasting, and able to respond to information demands of farmers;
- participate in regional level training programmes and offer training to front line extension staff on data collection (climate impacts, damage to infrastructure, loss to production, etc.) according to the new format to be elaborated;
- design and assist to develop a database at the DWR and prepare a strategic documents guided by the stakeholders to ensure sustainability;
- assist to develop a suitable crop monitoring and yield forecasting methodology in close collaboration with the international expert
- assist to develop necessary data, tools and methods for crop monitoring and crop yield forecasting
- Assist to improve periodical agro-met and food security bulletin issued from DWR
- submit a substantive technical report at the end of the assignment;
- provide any other duties which may be identified and agreed upon with the Lead Technical Unit (LTU)

**Qualification:** Higher degree in Meteorology, preferably agro-meteorology with sufficient background on database management and data archiving, crop monitoring and yield forecasting.

**Duty Station:** Banjul, The Gambia and need based travel to pilot districts.

**Duration:** 10 weeks

## **Monitoring and Evaluation Expert (International)**

Under the overall supervision of the FAOR and the Lead Technical Officer (LTO), and the direct supervision of the NTC, the Monitoring and Evaluation Expert will advise the Project Coordination Unit (PCU) on the design and establishment of a monitoring and evaluation (M&E) system for the project to record progress in meeting goals, assessing results, and facilitating the systematization of experiences.

### **Main responsibilities**

- Design an M&E system taking into account the project Results Framework, the GEF Tracking Tool, and the outcomes, outputs and activities set forth in the Work Plan (see relevant Annex in Project Document), and the Annual Work Plan(s) and Budget(s) (AWP/Bs)
- Generate effective monitoring tools that can be used in each of the project intervention sites.
- Develop proposals that consider participatory evaluation in each site as a method to help strengthen the capabilities of local actors in systematization and planning and to include young people and women.

### **Functions and activities**

- i. Review the project Results Framework and make recommendations to adapt it to the needs of the project;
- ii. Complete the evaluations made in the preparatory phase of the project to ensure that baseline data for the project is taken into account;
- iii. Complete the monitoring and Evaluation Matrix and the Monitoring Evaluation Plan and discuss monitoring responsibilities and timing which each party involved during the project's inception;
- iv. Support the project monitoring activities and ensure quality of reports by conducting periodical backstopping missions;
- v. Support the project in compiling and disseminating key lessons learned.

### **Required professional profile**

- Professional with higher education in institutional development, economics, planning or related subjects.
- Minimum of 8 years of experience in collaborating with research centers, government institutions, or rural development projects for the implementation of M&E systems.
- Experience in the implementation of methodologies for assessing gender equity, the participation of indigenous peoples, capacity building, and the sustainable management of natural resources, among others.
- Knowledge and use of computer systems for the development of M&E tools that can be shared by several users.

**Duration:** 14 weeks

**Duty Station:** Banjul, The Gambia and need based travel to pilot districts.

## **Operations and Administration Expert**

Under the direct supervision of the FAOR and in consultation with the PMU, the Operations and Administrative Officer (note: might be two separate positions) will have the following responsibilities and functions:

- Ensure smooth and timely implementation of project activities in support of the results-based work plan, through operational and administrative procedures according to FAO rules and standards;
- Coordinate the project operational arrangements through contractual agreements with key project partners;
- Arrange the operations needed for signing and executing Letters of Agreement (LoA) with relevant project partners;
- Maintain inter-departmental linkages with FAO units for donor liaison, Finance, Human Resources, and other units as required;
- Day-to-day manage the project budget, including the monitoring of cash availability, budget preparation and budget revisions to be reviewed by the PC;
- Ensure the accurate recording of all data relevant for operational, financial and results-based monitoring;
- Ensure that relevant reports on expenditures, forecasts, progress against work plans, project closure, are prepared and submitted in accordance with FAO and GEF defined procedures and reporting formats, schedules and communications channels, as required;
- Execute accurate and timely actions on all operational requirements for personnel-related matters, equipment and material procurement, and field disbursements;
- Participate and represent the project in collaborative meetings with project partners and the Project Steering Committee, as required;
- Undertake missions to monitor the outputs-based budget, and to resolve outstanding operational problems, as appropriate;
- Be responsible for results achieved within her/his area of work and ensure issues affecting project delivery and success are brought to the attention of higher level authorities through the BH in a timely manner;
- In consultation with FAO Evaluation Office, the HQ officer(s), and FAO-GEF Coordination Unit, support the organization of the mid-term evaluation/review and final evaluation, and provide inputs regarding project budgetary matters;
- Provide inputs and maintain the FPMIS systems up-to-date; and
- Undertake any other duties as required.

### **Qualifications**

- University Degree in Economics, Business Administration, or related fields;
- Five years of experience in project operation and management related to natural resources management, including field experience in developing countries;
- Proven capacity to work and establish working relationships with government and non-government representatives;
- Excellent English language skills; and
- Knowledge of FAO's project management systems (desirable).