



Watershed approaches for climate resilience in agro-pastoral landscapes

Part I: Project Information

GEF ID

10178

Project Type

FSP

Type of Trust Fund

MTF

CBIT/NGI CBIT NGI**Project Title**

Watershed approaches for climate resilience in agro-pastoral landscapes

Countries

South Sudan

Agency(ies)

UNDP, UNIDO

Other Executing Partner(s)**Executing Partner Type**

Ministry of Agriculture and Food Security / Ministry of Trade and Industry, and East
African Community Affairs / Ministry of Livestock and Fisheries / Ministry of
Environment and Forestry Government

GEF Focal Area

Multi Focal Area

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Least Developed Countries, Climate resilience, Livelihoods, Community-based adaptation, Land Degradation, Sustainable Land Management, Sustainable Agriculture, Income Generating Activities, Community-Based Natural Resource Management, Restoration and Rehabilitation of Degraded Lands, Influencing models, Demonstrate innovative approaches, Strengthen institutional capacity and decision-making, Stakeholders, Beneficiaries, Civil Society, Community Based Organization, Type of Engagement, Participation, Local Communities, Gender Equality, Gender results areas, Capacity Development, Access to benefits and services, Access and control over natural resources, Gender Mainstreaming, Women groups, Gender-sensitive indicators, Sex-disaggregated indicators, Capacity, Knowledge and Research, Innovation

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Duration

60 In Months

Agency Fee(\$)

891,547

Submission Date

4/5/2019

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCA-1	LDCF	6,471,461	19,930,000
CCA-2	LDCF	2,000,000	6,570,000
LD-1-1	GET	913,242	3,000,000
	Total Project Cost (\$)	9,384,703	29,500,000

B. Indicative Project description summary**Project Objective**

Building resilience to climate change risks amongst agricultural and pastoral communities of South Sudan.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Institutional capacities for gender-responsive climate change adaptation across the agricultural sector.	Technical Assistance	Outcome 1: strategies and capacities to implement community based and gender-sensitive climate change adaptation for agriculture and food value chains across South Sudan.	<p>Output 1.1: Integration of climate change adaptation strategies in agriculture and natural resources management policies (UNDP)</p> <p>Output 1.2: Integration of adaptation measures in relevant value chains support policy frameworks (UNIDO)</p> <p>Output 1.3: Guiding materials to support climate-responsive extension services developed, delivered and distributed (UNDP)</p> <p>Output 1.4: Training of trainers and extension personnel delivered to support climate-smart agriculture and natural resources management (UNDP)</p>	LDC F	1,040,000	7,125,000

Climate change resilient agriculture and food value chains	Investment	Outcome 2: Best practices in climate change resilient agriculture and food value chains adopted by rural communities.	<p>Output 2.1: Integrated and diversified climate-smart farming practices adopted to reduce risk of crop failure through improved seeds, multi-cropping, crop diversification, crop-livestock systems and agro-forestry (UNDP)</p> <p>Output 2.2: Farmer field schools established and community based organisations (e.g. women self-help groups, farmer groups) strengthened to enable adaptive practices and provide local support to farmers with the adoption of low cost techniques for climate resilient agriculture (such as micro-irrigation, tillage, soil moisture conservation, fertility management and composting) (UNDP)</p> <p>Output 2.3: Small scale agribusinesses engage in agro and food processing and preservation, and trigger investments in improved technology and facilities, and adapted uptake of skill training to increase the value of agricultural products (UNIDO)</p> <p>Output 2.4: Alternative livelihood options such as bee keeping, backyard poultry, kitchen gardens and small ruminants made available to communities with a focus on vulnerable households (UNDP)</p>	LDC F	4,872,813	15,475,000
--	------------	---	---	----------	-----------	------------

Community-based natural resources management to offset the impacts of climate change on ecosystem goods and services.	Investment	Outcome 3: Communities in micro-watersheds adopt natural resources management and restoration to reduce climate change impacts.	<p>Output 3.1: Restoration plans based on ground surveys of micro-watersheds delivered, vetted and approved by micro-watershed based committees comprised of representatives of all stakeholders (UNDP)</p> <p>Output 3.2: Improved ground water recharge and soil moisture retention through community based soil and water conservation measures in micro-watersheds (UNDP)</p> <p>Output 3.3: Reduced impacts of floods through creation of water storage and spreading structures and drainage control measures in the catchment (UNDP)</p> <p>Output 3.4: Increased resilience to drought through creation of water points from shallow boreholes (UNDP)</p>	LDC F	2,111,758	3,900,000
---	------------	---	---	----------	-----------	-----------

Community-based natural resources management to offset the impacts of climate change on ecosystem goods and services.	Investment	Outcome 3: Communities in micro-watersheds adopt natural resources management and restoration to reduce climate change impacts.	<p>Output 3.1: Restoration plans based on ground surveys of micro-watersheds delivered, vetted and approved by micro-watershed based committees comprised of representatives of all stakeholders (UNDP)</p> <p>Output 3.2: Improved ground water recharge and soil moisture retention through community based soil and water conservation measures in micro-watersheds (UNDP)</p> <p>Output 3.3: Reduced impacts of floods through creation of water storage and spreading structures and drainage control measures in the catchment (UNDP)</p> <p>Output 3.4: Increased resilience to drought through creation of water points from shallow boreholes (UNDP)</p>	GET	913,242	3,000,000
Sub Total (\$)					8,937,813	29,500,000
Project Management Cost (PMC)						
LDCF					446,890	
Sub Total(\$)					446,890	0
Total Project Cost(\$)					9,384,703	29,500,000

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Government	Ministry of Environment & Forest	Public Investment	Investment mobilized	2,202,632
Government	Ministry of Agriculture & Food Security	Public Investment	Investment mobilized	10,663,157
Government	Ministry of Livestock & Fisheries	Public Investment	Investment mobilized	1,790,132
Government	Ministry of Agriculture and Food Security	In-kind	Recurrent expenditures	2,665,789
Government	Ministry of Water Resources and Irrigation	Public Investment	Investment mobilized	4,967,369
Government	Ministry of Water Resources and Irrigation	In-kind	Recurrent expenditures	1,241,842
GEF Agency	UNIDO	In-kind	Recurrent expenditures	5,969,079
Total Project Cost(\$)				29,500,000

Describe how any "Investment Mobilized" was identified

Government contributions are indicative figures at this PIF stage and will be further refined during the PPG. Co-financing from the Ministry of Agriculture and Food Security and the Ministry of Water Resources & Irrigation correspond to funds for the implementation of the Comprehensive Agricultural Development Master Plan (CAMP) and related Irrigation Development Master Plan (IDMP). UNIDO's co-financing comes from two projects. An EU-funded project for sustainable food security in the and a value chain focused project, both in the former Northern Bahr el Ghazal region (now Aweil and East Aweil State). There have been additional indications of potential co-financing that will require more engagement and consultations during the PPG stage, in particular for land degradation activities.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	LDCF	South Sudan	Climate Change	NA	6,896,461	655,164	7,551,625
UNIDO	LDCF	South Sudan	Climate Change	NA	1,575,000	149,625	1,724,625
UNDP	GET	South Sudan	Land Degradation	LD STAR Allocation	913,242	86,758	1,000,000
Total GEF Resources(\$)					9,384,703	891,547	10,276,250

E. Project Preparation Grant (PPG)

PPG Amount (\$)

200,000

PPG Agency Fee (\$)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	LDCF	South Sudan	Climate Change	NA	150,000	14,250	164,250
UNIDO	LDCF	South Sudan	Climate Change	NA	50,000	4,750	54,750
Total Project Costs(\$)					200,000	19,000	219,000

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
15000.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
15,000.00			

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title

Submitted

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	40,000			
Male	35,000			
Total	75000	0	0	0

Part II. Project Justification

1a. Project Description

1a. Project Description. Briefly describe:

1.1 Global environmental and/or adaptation problems and Root causes

The Republic of South Sudan is among the most fertile regions in Africa. The 620,000 km² of the country includes the catchment area of the Nile and its floodplains - the Sudd, among another four rivers. These wetlands and floodplains cover 5% of the country and harbour a sizeable fisheries potential, 85% of which is currently subsistence based. Ninety-five percent of the land area is suitable for agriculture and livestock, half of which is considered prime agricultural land which has not been tapped. The agriculture sector including forestry, livestock and fisheries is estimated to comprise about 15% of the GDP of South Sudan in 2013 with women contributing over 50 % of the workforce. The sector is seen as a major driver of growth, economic diversification and structural transformation in South Sudan in its quest for moving away from its extreme dependence on oil.

Ninety-five percent of South Sudan's population depends on climate-sensitive natural resources particularly agriculture which is almost entirely rain-fed. Seventy-eight percent of households depend on crop farming or animal husbandry. Rainfall variability is therefore the greatest determinant of agricultural production causing droughts across the country and floods along the floodplains. Vulnerability to climate change is therefore closely linked to poverty and livelihood security of men and women in South Sudan. The lingering conflict in South Sudan combined with changes in rainfall patterns, scarce livelihood options, limited humanitarian assistance and rising food prices has increased the population's vulnerability to climate change. Aweil and Aweil East states, in particular, are highly vulnerable to climate change as they are on the northern fringes of the country, where encroaching desertification and conflicts make it difficult for population to adapt to climate change.

In the past four decades, the rate of warming in South Sudan was estimated to be two and a half times greater than global averages. Summer rainfall is estimated to have decreased by ten to twenty percent in the western and southern areas. If this trend continues, the area receiving over 500mm of rainfall necessary to sustain agricultural livelihoods will contract by 30% of what it was during 1960-1990. Temperature has increased by more than a degree Celsius in central and 1.3 degree Celsius in South Sudan during this period. This warming trend has moved southward, amplifying the impact of water shortages and drought and further reducing both crop harvests and pasture quality in some of the most vulnerable regions of the country.

South Sudan has tremendous potential of being positioned as a vital new climate smart agricultural and food production zone which can diversify and revitalise the livelihood base of its young population and put it on the pathway to sustainable development. Many decades of conflict have left this potential unrealised, placing it among the least developed nations in the world. This underscores the critical relevance of the business case for focusing on climate resilient agriculture with linkages to livelihoods and food security. Lack of food security is a contributing driver of resource based conflict especially when seen through a recovery and resilience lens. An estimated 4.8 million persons are "severely food insecure," with Northern and Western Bahr el Ghazal and Unity States worst hit and food insecurity is causing severe cases of malnutrition and forced migration and displacement as well.

53% of food consumed within South Sudan is supplied or harvested from household-based farm production systems, while market purchase accounts for 32% and the remaining 15% constitutes non-monetary, informal exchange with friends and family members. Often community food produced for households is exchanged in return for labor, a common occurrence in rural societies across the country. The country has challenges in providing sufficient, reliable and adequate food supplies to the population, and food shortages are projected to continue to increase until long-term planning can curb the situation and sustain the national food production output. Consolidating socio-economic and political reconstruction plans, including the integration of environmental conservation measures in national plans and optimizing associated adaptation benefits is a key priority, which can be reinforced by intergrated watershed management and value chains development approaches.

The link between climate change and conflict has not been clearly established, but some studies offer insight into the potential relation between drought and flood episodes and documented conflicts . Pastoralism is prevalent throughout South Sudan and pastoral communities, in order to adapt to changing conditions and overgrazing, have been forced to migrate to wetter areas already inhabited, often creating conflicts. People moved by climate-related events are often treated differently from those displaced by conflict, mostly because climate shocks, such as floods, are seen as temporary and affected people are expected to move back to their original areas. While climate-related displacements are indeed temporary, their occurrence has and will continue to increase. This prompts specific policies and interventions to address this issue in the long-term. Overall, conflicts are expected to increase over rights and access to water and natural resources . The recent peace agreement signed in 2018 has promised the end of conflicts in South Sudan, but the situation remains fragile. Adaptative interventions and the restoration of degraded land have the potential to contribute to peace and security in South Sudan.

1.2 Baseline Scenario and Projects

Financial allocations to rural development and natural resources, including agriculture in South Sudan comprise a small fraction of the national budget (4% in 2015). Currently, the country is in the midst of a severe macroeconomic crisis with a projected fiscal deficit of nearly 50 percent of the budget which has crowded out even the limited quantum of development resources available to the agriculture sector. Climate change related risks to natural resources are inadequately articulated in national policy and appear to be low on government priorities and programmes. This is probably a function of the limited sensitivity and programmatic awareness about climate change related risks and how they need to be addressed.

The project development phase will build on the initial set of close consultations to develop coordinated outputs and activities which are harmonized and synergistic with all the key stakeholders, concerned line ministries and UN agencies active in the region. The project proposal will avoid duplication of effort and ensure value for money and maximise the adaptation benefits through these consultations. It will draw on lessons learned and build a portfolio of activities which are informed by a need and gap analysis for addressing climate change risks, while building on the existing programmes on the ground in a complementary manner. The involvement of key implementing agencies in capacity building programmes and implementation of activities under the GEF project will be tapped into fully. In this context the following major initiatives provide a baseline for the LDCF proposal.

Baseline project 1: Emergency Livelihood Response Programme (ELRP) - 2014, ongoing

Objectives and coverage: This FAO led initiative comprises of numerous projects and funding sources and combines urgent humanitarian assistance with longer term resilience building activities. The latter involves distribution and production of improved seeds, crop diversification, veterinary services and agricultural extension to extension workers and communities through farmer field schools. FAO works in regions classified under the IPC Phases 3 and 4, and implements the programme through national and international NGOs across all the states.

Lessons: The ELRP offers a rich set of lessons and experiences in providing agricultural extension and veterinary services in South Sudan.

Linkages with the LDCF proposal: The LDCF project will coordinate its efforts with the FAO on both thematic areas and local interventions. It will leverage and build upon existing resources and expertise while identifying and addressing gaps in interventions relating to climate change adaptation in agriculture and NRM.

Baseline project 2: Strengthening the Livelihoods Resilience of Pastoral and AgroPastoral Communities in South Sudan's cross-border areas with Sudan, Ethiopia, Kenya and Uganda - 2017 to 2020

Objectives and coverage: The project aims to strengthen the livelihood resilience of pastoral and agro-pastoral communities in the border areas of South Sudan. The intervention will support the peace process through evidence-based programming of investments for peaceful coexistence among communities; equitable access to natural resources; and economic opportunities to alleviate human suffering arising from forced displacement and irregular migration. Linkages with the LDCF proposal: The project has a strong focus on food security and peace building of pastoral communities and makes provision for improving early warning information in South Sudan and its border areas, which the GEF intervention can build upon to improve climate-related services.

Baseline project 3: Enhanced Local Value Addition and Strengthening Value Chains, 2015-2019

Objectives and coverage: The project (UNIDO/European Union/Ministry of Agriculture and Food Security), aims to strengthen the livelihood resilience of pastoral and agro-pastoral communities in the border areas of South Sudan. The intervention will support the peace process through evidence-based programming of investments for peaceful coexistence among communities; equitable access to natural resources; and economic opportunities to alleviate human suffering arising from forced displacement and irregular migration.

Linkages with the LDCF proposal: The project has a strong focus on food security and peace building of pastoral communities and makes provision for improving early warning information in South Sudan and its border areas, which the GEF intervention can build upon to improve climate-related services.

Baseline project 4: Upgrading the Fishery Sector in Upper Nile State, South Sudan , 2013-2019

Objectives and coverage: The project (UNIDO/Government of Canada/ Ministry of Livestock Fisheries) aims to enhance local value addition and strengthen agro-value chains in the Greater Bahr El Ghazal region in South Sudan to contribute to the improvement of food security and income of the rural population along selected water and fisheries catchments along the Nile Corridor. The project has a strong focus on food security and livelihoods. With GEF intervention, the targeted states would be supported to scale up the market and climate smart technology solutions that mitigate pressure on watersheds and address social and climate vulnerabilities.

Linkages with the LDCF proposal: The project has a strong focus on food security and strengthening the capacity of small holders to engage in food processing and related business activities as a means to boost the rural economy and reach a sustainable food security level in the country. With GEF intervention, communities of farmers, farmer and food processing small and community business units and existing and new production groups in the GEF project targeted states would be supported to scale up the market and climate smart technology solutions that mitigate pressure on watersheds and address social and climate vulnerabilities.

Baseline project 5: Comprehensive Agriculture Master Plan (CAMP) and the Irrigation Development Master Plan (IDMP), 2015-2040

Objectives and coverage: The CAMP/IMDP are investment plans developed to align with national development policies and objectives such as Vision 2040 and National Development Strategy (NDS), and with the policies and strategies of the Ministry of Agriculture and Food Security (MAF), Ministry of Livestock and Fisheries (MLF), and Ministry of Environment and Forestry (MEF), and Ministry of Water Resources and Irrigation (MWRI). The plans cover the period 2015-2040. The CAMP consists of 110 sub-sector ongoing and pipeline projects necessary for agricultural development across the country. Both investment plans are meant to attract and align investments (mostly from donors).

Linkages with the LDCF proposal: The projects presented in the CAMP/IMDP focus on agricultural development and irrigation, two sectors highly sensitive to the impact of climate change and which the LDCF project will target for increased resilience.

1.3 Proposed alternative scenario

The LDCF proposal envisages the strengthening and building of institutional capacities at the national, sub-national and community level to design and adopt climate change resilience and adaptation measures in agriculture and natural resource management. The primary stakeholders of the project are subsistence farmers, agro-pastoralists and pastoral communities amongst whom women comprise a substantial proportion. The project will undertake multi-stakeholder consultations to identify select sites falling within the Aweil and Aweil East states (formerly Northern Bahr el Ghazal) which lies in the Western Flood Plain agro-ecological zone and is one of the most food insecure regions with the highest rate of malnutrition in the country .

Northern Bahr el Ghazal has topographically distinct flood plains and uplands and a mix of agricultural, agro-pastoral and pastoral communities which will ensure that strategies developed during the project can be replicated elsewhere. Furthermore, the region is seen as stable with a pro-active state government which has prioritised agricultural development projects. Through this project, gaps in capacities for climate-smart agriculture, food value chain and NRM will be identified and addressed through policy and grass-roots level action. In water-stressed areas, pastoralist communities are forced to search for better alternative pastures, often leading to conflicts with local populations. This will be taken into account for site selection and the project will undertake or update existing value chain strategies to identify food systems and products that can generate multiple benefits such as enhancing food security, reducing pressure on resources including watersheds, and mitigating post-harvest losses. By increasing the adaptive capacity of populations, the project will also reduce risks of conflicts over resources, provide various livelihood options and contribute to peace and stability in the intervention area.

This LDCF proposal has three components and outcomes which address the barriers described earlier. It is expected to raise \$29,500,000 in terms of co-financing for these components.

Barriers to the proposed adaptation solution:

- 1) Limited access to information and limited technical capacities for decision support and extension services: While there is awareness about the potential impact of climate change on agriculture, this is not adequately reflected in technical and policy documents of the government. Capacities to access best practices, information and technical know-how to assist decision makers in developing guidelines for climate change adaptation in agriculture are nascent and need to be strengthened. Technical capacities in providing extension services, raising awareness or in training farmers and pastoralists are very limited both among government line departments and in non-government institutions.
- 2) Unscientific agricultural practices and farmland management: Prevalent practices in cultivation and livestock rearing are often unsustainable and inappropriate given the increasing variability in rainfall and rising temperatures. Land management practices are wasteful of both nutrients and moisture and expose the farm to erosion. Lack of drainage, flood control and water conservation reduce available moisture during the dry season and increase the impact of flooding during the rainy season. There continues to be a high reliance on manual tilling, use of fires for controlling weeds and stubble and a virtual absence of any soil or water conservation measures or cover-cropping on the farms. On-farm diversification is minimal and available opportunities for raising multiple crops, vegetables, poultry, growing fruit, forage trees or bee-keeping are not utilised. Over 95% of agriculture is subsistence based and the use of locally available organic fertilizers is minimal as is the use of animal draught and other inputs such as improved seeds and implements, fertilisers and pesticides. Shallow ground water resources remain unexploited due to limited access to suitable technologies and sizes of farm plots remain small due to dependence on manual labour for tilling and limited adoption of animal draught.
- 3) Inadequate food production capacities: Population lack basic food processing skills and facilities, which results in high levels of post-harvest losses and poor livestock, vegetable and fruit production and limit alternative livelihood opportunities for communities. Local food processing units are micro-scaled, scattered and do not contribute significantly to meet the high and growing demand for processed food.

4) Inadequate management of natural resources for climate resilience: There is limited capacity and consequently no systematic effort to conserve soil or water in micro-watersheds. Simple, low-cost soil and water conservation structures can substantially improve moisture retention during the dry season and help mitigate the impact of floods during the rainy season. There is also a large untapped potential for planting quick growing species to support the production of charcoal and supplement forage and fruit availability. The potential for increasing quality and amount of biomass for grazing is also not being tapped. Many regions have a shallow ground water table which when combined with ground water recharge measures, can provide a sustainable source of water for both livestock and agriculture, particularly during periods of drought.

1.4. Alignment with GEF focal area

The project was designed as an adaptation project with sustainable land degradation co-benefits, in alignment with the GEF7 programming strategy. With a focus on climate-smart farming practices and improving the resilience of value chains, component 2 will promote a more diverse food production system in the intervention areas. Component 3 relies on a sustainable land management approach to restore ecosystem services in micro-watersheds, at the same time improving the resilience of population to floods and more broadly the impact of climate change. For this reason, the government agreed to integrate part of their GEF STAR allocation for Land degradation as part of this LDCF project. South Sudan is setting Land Degradation Neutrality targets and measures which will, when approved, be in line with the LDN concept introduced in the GEF-7 LD focal area. Activities on sustainable land management, improvement of soil productivity and rehabilitation of degraded land as outlined under Outcome 3 will directly contribute to achieving those voluntary LDN targets. The project will track these contributions through dedicated indicators so as to enable the government to track the progress achieved through this project against the relevant LDN targets (once they are effective).

The project is fully aligned with the GEF LDCF programming strategy and all the activities contribute to increase adaptive capacities of beneficiaries in South Sudan. Additionally, the project has added benefits in terms of peace and security in line with the GEF-7 entry point on Climate Risk and Security.

1.5. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

The LDCF proposal seeks to address specific gaps and challenges to help communities adapt to climate change. This will be done by strengthening existing government policies and programmes by mainstreaming climate change adaptation and gender concerns. Integrated guidelines for watershed based, gender responsive climate action will be developed. Climate smart agricultural extension services and management of natural resources will be strengthened through development of training materials and the training of extension workers. Communities will be provided assets and materials for climate resilient agriculture combined with training in their use. Social capital within communities will be enhanced by creating gender-equitable organisations as support groups. Capacity building of government agencies and partners, including civil society and communities, are integral to the action and aim to augment the scale of baseline development projects and adaptation interventions. As an example, efforts to promote off-land and diversified resource use for small scale and organized community businesses constitute one of the short-term adaptation priorities, with the aim of reducing and eventually taking the destructive dependence off wood forests, agricultural and pastoral lands and natural resources. Climatic and population vulnerabilities can also be addressed in the context of the food systems approach by efficiently preserving and linking farms produce to off farm-adaptation enabling interventions focusing on climate-resilient value chains.

In the absence of these investments, the limited efforts on climate resilience in agriculture will remain dispersed and their impact diluted and unsustainable. Furthermore, the large potential to build resilience of communities through self-sustained initiatives in both agriculture and NRM will remain unattained and underutilised. The proposed project presents an approach by which communities can be involved as partners in integrated, gender responsive implementation of activities that build their resilience to climate change risks and wherein the government is able to support these activities through appropriate policies and extension services. These have been presented, component wise, below.

Component 1: Institutional capacities and guidelines for gender-responsive climate change adaptation across the agricultural sector and natural resources management strengthened.

This component is expected to result in enhanced capacities at both national and sub-national level and improved technical resources and capacities for gender responsive grass-roots level climate change adaptation in agriculture and NRM. Potential sites for project activities will be selected using primary data combined with available GIS/RS data sets. These will be supplemented with existing baselines with the National Bureau of Statistics, the Agricultural and Food Information System. A digital watershed atlas for South Sudan will be prepared showing hydrological delineations and major land-uses identifying the most vulnerable catchment areas and these datasets will be made available publicly and will support climate responsive land use choices and watershed restoration decisions.

Integration of climate change adaptation and mitigation strategies in agriculture and natural resources management policies: Baseline data required to build implementation strategies is often not available in South Sudan. Moreover, existing policies provide insufficient guidance on best practices for gender mainstreaming, participation of communities and sustainability from both the technical and socio-economic perspective. Traditional knowledge and practices and existing strategies for coping with climate related stress within communities have not been documented adequately. The LDCF project will collect and collate necessary data to develop guidelines for watershed based interventions in climate-smart agriculture and NRM in close consultation with stakeholders. Gender sensitive guidelines for selection of beneficiaries and strengthening of CBOs as implementation partners will be formulated in line with the National Gender Policy of South Sudan and international good practices. These will be shared with national and state governments for their inputs and for consideration as supplements to relevant policies.

Existing government policies and programmes are governed by national and state policy documents in the form of long term (25 year) master-plans and short term (two to four year) strategic plans. These documents outline priority programmes, projects and development action. However, their integration with climate change risks is insufficient and falls short of providing suitable response mechanisms to ensure climate change adaptation and vulnerability reduction. This can lead to underestimation of the risks involved in development projects and poor project design. The LDCF project will identify and address shortcomings in provisions for climate change adaptation across key policy documents. These will be presented to the concerned ministries for their consideration as appendices or supplements to existing policies.

Training materials to support extension activities developed and distributed: Information for interventions in climate smart agriculture and NRM is scattered, incomplete and often in forms that are unavailable or inaccessible to stakeholders. The LDCF project will prepare documents and create training materials for different stakeholders including i) policy makers; ii) line department staff, extension and development personnel from NGOs and iii) semi-literate and illiterate members of the community. Subject experts will be engaged to identify and fill in gaps in training materials and information. The material will be vetted by a gender expert to address gender concerns and will be published in both English and in Dinka (Rek, the standard or prestige variety of Dinka). Translations of the materials will be made into Dinka for distribution via inexpensive SD card audio players and radio. All the material will be published under an open source Creative Commons license to facilitate further use and adaptation.

Training of trainers and extension personnel delivered to support climate-smart agriculture and natural resources management: The number of extension staff and their knowledge of interventions required for climate change adaptation in agriculture and NRM are insufficient. The LDCF project will train extension and development workers from both government line departments and relevant NGOs. A series of training of trainer workshops will be organised at the national and sub-national levels. Training of extension officers and field teams will coincide with relevant project activities and agricultural seasons. Field teams will be

trained in each agro-ecological zone to conduct meetings and participatory surveys with potential beneficiaries. This data will be used to shortlist specific groups of villages (Bomas) within micro-watersheds, formulate gender dis-aggregated plans for targeted interventions and to coordinate the procurement of inputs and resource required for activities on the ground.

Promote mainstreaming of adaptation measures in relevant value chains support policy frameworks, public-private investments. Investments to increase the value of the agricultural products, knowledge management and community skills training, at scale.

Policy frameworks and investment plans relevant to value chains need to reflect climate change impacts in order to increase adaptive capacity of populations. Planning and capacity building will be conducted to ensure that policies and plans for agribusiness development investments and non-farm livelihood opportunities are climate-resilient and include adaptation measures, in particular to address post-harvest losses and stabilize farm gate value and end-market consumer prices in times of bumper harvests. Policy analyses and trainings on value chain and agribusiness support measures with linkages to compliance with good agricultural, post-harvest handling and preservation practices, including storage and grading services, are envisaged. Mainstreaming of climate change adaptation in policies related to vocational and entrepreneurship skills development will be considered, focusing on technical and vocational skills needs for industries and agribusinesses along the value chain, and diversified off-farm employment in rural communities.

Component 2: Best practices in climate change resilient agriculture and sustainable farmland management adopted.

Farmers, agro-pastoralists and pastoral communities are clearly aware of changes in rainfall patterns and the increasing frequency of extreme weather events like drought and floods. However, coping strategies that are being adopted, such as collection of wild fruit or charcoal production are either inadequate or environmentally destructive. Prevalent cultivation practices are unscientific, inappropriate, unsustainable and not resilient to climate related stress resulting in very high rates of crop failure leading to malnutrition and a growing chronic dependence on external food aid.

The LDCF project will break this vicious cycle of failing agricultural production, destructive coping strategies and post-harvest losses. This component is expected to result in the adoption of climate-resilient agriculture and food value chains for climate change resilience through extension activities consisting of on-site demonstrations, farmer-field schools and providing selected groups with materials and tools to enhance climate resilience and provide community safety nets.

Customary or new CBOs mobilised and strengthened to build social capital within communities: The first line of defence during crisis is formal and informal networks and organisations that exist within communities. Absence of this social capital limits the ability of vulnerable groups to cope in times of stress and emergencies. The LDCF project will invest in the strengthening of existing CBOs such as communal farm groups or will create new ones if they do not exist with a clear attention to gender dis-aggregation and equitable representation. All project activities will be routed through CBOs and farmer field schools. This will help create local institutional capacities and social capital to ensure wider access to project benefits and to sustain the activities.

Integrated and diversified climate-smart farming practices adopted to reduce risk of crop failure: The large agricultural potential of South Sudan remains underutilised partly because farming is not diversified to maximise productivity and increase resilience by spreading the risk of crop failure. Most farmers use traditional implements and do not practice any form of nutrient or moisture conservation. The LDCF project will introduce and build capacities for adoption of multi-cropped systems, integrated crop-livestock systems and agro-forestry. Training on low cost nutrient management and compost production based on local materials will be conducted. Appropriate farmland management techniques such as conservation agriculture, low cost micro-irrigation, mulching and field bunding will be introduced to build up fertility and soil moisture and improve yields. Farmers will be encouraged to integrate multiple crops of different duration with livestock and agro-forestry species to spread the risk of crop failure and simultaneously ensure productivity during lean periods. The prevalence of long duration disease and pest prone varieties is leading to crop failures due to the shortening growing season. The LDCF project will identify and introduce drought and disease resistant varieties of crops with shorter maturity period and higher yields to reduce the risk of crop failure and improve yields.

Climate change resilient post harvest food systems and value chains: The LDCF project will introduce a systematic and holistic value chain development strategy and approach, starting with diagnostics targeting the most common products forming the basic diet of local populations. The project will also support the procurement of demonstrational technology and equipment by advising on the appropriate technical specifications for climate resilient solutions (e.g. type of equipment, technical parameters, quantities of equipment necessary). Beneficiary profiling will help link technological improvements to the real needs of local populations.

Communities will be supported through the introduction of technology solutions and training on techniques and skills for increasing the value of the agricultural raw material (mostly cereals, legumes and nuts and related basic staple foods such as flour production), and diversification by scaling up more advanced processing (pasta/biscuits/bread production) in case of demand on local and external markets. Drying techniques for vegetable and fruit processing and milling/crushing/grinding/sowing/sorting/packing for staple cereals add value to products, but are also key to reducing post-harvest losses and bridge the supply with the demand for such products on the local market. These activities will improve the resilience of food systems and value chains and reduce the vulnerability of beneficiaries and their communities.

Proposed interventions include upgrading of at least two (2) small scale and private sector investment projects, technical advice towards adopting and implementing cost-efficient mechanisms for stabilizing market access, prices and climate resilience of small holder based food systems; focusing on good quality practices, value chain governance and business linkages with cooperatives, and valorizing waste streams.

Alternative livelihood options made available to communities with a focus on vulnerable households: Lack of diversity in livelihood options greatly increases the vulnerabilities of households to crop failures due to drought, unseasonal rains and in some regions, floods. The LDCF project will introduce a range of activities which diversify sources of nutrition and income. Activities with low initial investment and ease of maintenance by the selected stakeholders will be introduced as means of sustenance during periods of stress for both farmers and those with small holdings. The mix will include backyard poultry, bee keeping, small ruminants and short-season vegetable gardens combined with fruit trees and fodder varieties.

Component 3: Effective watershed management and water conservation implemented

Watersheds provide a host of ecosystem goods and services which includes a range of livelihood alternatives through periods of prolonged droughts and mitigation of weather extremes, both temperature spikes and extreme rain events. The third component of the project brings in the crucial element of NRM through the restoration of micro-watersheds. This component principally targets agro-pastoral and pastoral groups and will facilitate interactions between subsistence farmers and pastoral groups. This component will provide adaptation and land restoration co-benefits by restoring ecosystem services in degraded landscapes while maintaining or improving their livelihood opportunities.

Community based watershed management: South Sudan is facing an unprecedented rate of decline in forest cover. This is partly a consequence of destructive livelihood strategies such as charcoal production and fuel-wood sale. The long term impacts of de-forestation can have disastrous consequences on ecosystem services from watersheds, particularly provision of water and forage. There appear to be no localised community based micro-watershed restoration projects in South Sudan. The LDCF project will initiate community based, gender-equitable watershed development activities in selected micro-watersheds with gender-equitable micro-watershed committees comprised of representatives from village clusters or Bomas as a platform for planning activities and managing and sharing resources. The committees will formulate watershed development plans with technical experts from the project and formalise the sharing of resources generated through project activities.

Improved ground water recharge and soil moisture retention through community based soil and water conservation measures: Unmanaged watersheds supporting large cattle populations and smaller ruminants are often degraded. This can trigger large scale erosion and uncontrolled run-off, especially during extreme rain events. A prolonged dry season can translate into reduced water and biomass availability for agriculture and livestock forcing migrations of large

herds of cattle which can in turn become a driver of conflict. The project proposes to use simple soil and conservation to improve ground water recharge, sustain surface water bodies for extended periods and improve soil moisture which will have positive impacts on fodder availability and timber and non-timber forest produce. Activities envisaged include i) building of contour dams and check dams to store and recharge water; ii) clearing of drainage channels iii) afforestation with multiple use local species and iv) turfing measures. These interventions will prevent soil erosion and improve forage, timber and non-timber forest produce, even during prolonged drought. They increase the resilience of ecosystems and help communities become more resilient during periods of climate-related shocks when they occur. The improved or restored ecosystem services and natural resources management will provide new livelihood opportunities for communities who will benefit from more reliable water supplies and more productive soil functions.

Reduced impacts of floods through creation of water storage and spreading structures and improved drainage in the catchment: The extensive floodplains of South Sudan provide immense opportunities for agriculture. However, an increased frequency of extreme rain events due to climate change has increased loss of crops due to flooding. The project will build resilience to flooding and resulting loss of crops by involving farmers in building drainage structures on farmlands, cleaning and maintaining channels and streams and constructing small dykes, diversion canals and water storage and spreading structures will be taken up in flood prone regions to buffer against floods.

Increased resilience to drought through creation of water points from shallow, hand pump based boreholes: The shallow water table in many regions of South Sudan can serve as a low cost and sustainable source of irrigation and water for livestock during drought. The LDCF project will create water points at strategic locations based on an analysis of land form and, where possible, by pairing them with water conservation structures. Shallow boreholes will be excavated and fitted with simple mechanical pumps operated manually, by wind or solar power. All activities will require participation of communities in planning and design as well as cost sharing through provision of implements, materials and labour.

1.6 Adaptation benefits

The proposed LDCF project is expected to help national and state policies in agriculture and NRM integrate climate change adaptation and mitigation measures. Improved capacities of extension staff at the local level will ensure extension services in both agriculture and animal husbandry are equipped to provide low cost and appropriate solutions which address challenges of climate change. The project will strengthen local organisations and the role of women in farming. The ability of local communities to implement individual as well as group activities in climate-smart agriculture, animal husbandry and NRM will be improved.

The project will focus on the highly vulnerable subsistence farmers, and will support over 75,000 women and men from the farming, agro-pastoral and pastoral communities in South Sudan, in line with the national policies and bringing additional value to baseline projects. Investments made by GEF will build institutional capacities and ensure targeted delivery of extension services and materials to vulnerable groups to enable adaptation. Resilience to climate change, reduced vulnerability and increased production from agriculture and animal husbandry as a result of adoption of measures to mitigate impacts of climate change are expected as a result. On the ground implementation of climate-smart agricultural practices, distributing seeds of drought tolerant and early maturing varieties of crops, diversification of livelihoods and cropping and measures for soil and water conservation and harvesting in about 30 micro-watersheds covering approximately 15,000 ha will be taken up. This will boost productivities and spread climate related risk between multiple crops and livelihood alternatives.

The project is expected to reduce the occurrence of climate-related conflicts in the intervention areas. Better management of resources, the introduction of livelihood options and the restoration of degraded land will make population more resilient and reduce pressures prone to inducing conflicts.

Mobilisation of CBOs will ensure greater participation of women in agricultural activities and create mechanisms for equitable share of watershed resources between different communities. Water points for irrigation and livestock will be established to build resilience during prolonged droughts providing a source

for irrigation and watering animals.

Documentation of project results and integrating lessons and good practices from the baselines projects will involve community business units and the private sector (nationally and in target state areas and value chains). In case of training centers located in remote areas, outreach to the wider communities and beneficiaries will be supported to optimise outreach, especially to remote and social, food, water and land stressed communities.

1.7 Innovation, sustainability and potential for scaling up

Most existing interventions in agriculture are focused on increasing productivity and pay insufficient attention to the need for climate change adaptation in the sector. For example, CAMP document, which is the most important initiative outlining the policy of the government only refers to climate change in the context of compliance to international climate change norms in relation to forestry value chains. While some other initiatives are more focused on climate change adaptation, the nature of interventions is disaggregated and dispersed. There is a disconnect between institutional needs, capacity building and actual implementation. The lack of guidelines to incorporate climate change in project design has led to poor performance of interventions in both agriculture and NRM. Furthermore, many efforts have failed to address gender concerns. Women form the bulk of the agricultural workforce and head most rural households in South Sudan. Yet their representation in decision making roles in projects continues to be overlooked. Many past interventions have made large outlays in infrastructure and equipment which cannot be maintained or sustained given local constraints.

The LDCF proposal therefore incorporates the following innovations to overcome these lacunae. i) Integrative watershed approaches with synergistic interventions that address aspects of climate change adaptation and resilience both in agriculture and in NRM. ii) Creation of social capital through strengthening CBOs and their links to other institutions. This will ensure women are fairly represented and provided a strong role in decision making. iii) Scientifically robust selection of sites using both environmental and social criteria will facilitate the selection of those regions and specific communities who are most likely to successfully adopt and replicate project activities. iv) The use of multi-media such as audio recordings in local Dinka language which can be transmitted by radio or shared through inexpensive memory cards will greatly improve the reach of capacity building efforts. v) By building upon existing information and materials the project will minimise duplication while it adds value to the pool of training materials and modules available for climate change adaptation in the sector. Making this information available under an open source Creative Commons license will further ensure their adoption.

The scalability approaches to community business entities will be supported by adopting demonstration of business models for improving the availability and access to adopted technologies, including agricultural equipment and tools required to establish new and expand ongoing businesses, presenting another major capacity building approach. Along with limited management and business skills as key issues, insufficient knowledge about food hygiene and safety also present an additional challenge. This applies specifically to women, given their major role in the later stages of the fisheries and vegetables value chains, as was noted for instance at catering services or eateries conditions in larger towns such as Juba and Nimule and many peri-urban areas that have been evaluated for climate resilient conditions.

In order to safeguard the sustainability of the results the project, the activities will utilise appropriate, locally suitable technologies and low-cost interventions using equipment materials which can be locally sourced and maintained. Sustainability of results will also be ensured through contribution into project activities by project beneficiaries which will increase their stake and ownership of project activities. Selection of sites and participants for project activities will be based on preliminary baseline data and field surveys This will help identify areas and communities where project activities are most likely to be successful. This coupled with the strengthening of CBOs and ensuring appropriate representation of women in project activities will further increase its sustainability. It also needs to be noted that the proposed project area is located in one of the most secure and conflict free regions of South Sudan where the leadership is committed to supporting development activities with agriculture being high on the priority (further detailed in section 4, Risks).

Potential for scaling up of this project is very high for the following reasons: i) The agro-ecological zone in which the project lies has challenges which are shared and representative of many other regions of South Sudan. Any successful intervention in this project will therefore be replicable in several other

regions. ii) The proposed activities can be replicated in other agro-ecological zones with suitable adaptations to local conditions. iii) Baseline datasets and training materials developed during the project will be freely available which will encourage further development and replication elsewhere.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Specific sites will be identified during the PPG phase and initiation.



Fig. 1. Map of targeted states

Table 1. Project locations with geo-referenced information

Site	geonames.org ID	Brief description
Aweil State	11550543	Western Flood Plain agro-ecological zone. Both regions are food insecure regions with the highest rate of malnutrition, yet with high potential for climate resilient agricultural interventions.
Aweil East State	11550582	

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

Project Stakeholder	Relationship with the Project
Primary or principal stakeholders - indigenous peoples	<p>Members of the rural indigenous communities engaged in subsistence agriculture, agro-pastoral groups and pastoral communities are the primary focus of the project. Interventions will be routed through CBOs to ensure active participation and representation of women and a wider impact of activities, equitable sharing of costs and benefits and collective ownership of the project.</p> <p>Participatory techniques, group discussions and rapid appraisals will be conducted to ensure communities understand the project objectives and to help them identify specific interventions and their mechanism of delivery. The procedure for selection of beneficiaries and their contribution to the project will be discussed with stakeholders. Arrangements for in-kind contributions by stakeholders, in terms of labour, materials and assets will be one of the prerequisites for selection of beneficiaries. This will ensure ownership of the project activities by the primary stakeholders.</p> <p>Interventions in climate change adaptation and mitigation will be adopted by these communities through the project. Capacities of communities will be built through on-the-ground farmer field schools and watershed restoration in micro-watersheds around the habitations and grazing grounds.</p>
NGO Partners - civil society organisations	<p>Project implementation will be done through national or international NGO partners selected through a careful assessment of existing capacities, area of operation and reputation with both the State Government and accrediting agencies such as the NGO Forum. Selected NGOs will need to provide both human resources and infrastructural facilities for coordination of extension services and distribution of materials.</p> <p>NGOs will be directly involved in the selection of Bomas within micro-watersheds from within</p>

	<p>Counties/Payams suggested by the state government agencies. Systematic collection of spatially explicit baselines covering both socio-economic as well as environmental parameters will be done to accomplish this.</p> <p>Capacities of NGO field staff will be built through a series of training programmes. In addition, field staff will be taught in the use of participatory methods and community mobilisation to collect baseline information, form/strengthen CBOs and develop watershed development plans with communities.</p>
Government agencies at the state level	<p>Potential sites at the County and Payam level will be short-listed based on further discussions with state officials in government line departments[1]. This will be done in accordance with existing protocols and mechanisms which are in place to coordinate activities of different agencies operating in the state. The state governments will also facilitate the liaison with County and Payam level extension and development officials of the government as well as the chiefs representing communities at the Boma and village levels. The state government departments to be engaged will be the Ministry of Environment and Forests, Ministry of Agriculture and Food Security and the Ministry of Livestock and Fisheries.</p> <p>The state government will be kept informed about project activities through cluster level meetings. Progress reports and awareness materials will be presented to the authorities as per their requirement. Officials will also be invited to project meetings and events.</p>
National Government	<p>The Ministry of Environment and Forest is the GEF Operational Focal Point of this project and has identified the Ministry of Agriculture and Food Security as the Implementation agency for the project with UNDP through its Direct Implementation Modality (DIM) and UNIDO. The project is designed to align with the activities and plans laid out in the Comprehensive Agricultural Development Plan (CAMP) of the Ministry of Agriculture and Food Security[2]. It is also closely aligned with the Environment Policy of the Government. Under Secretaries from both the Ministry of Environment & Forest and Ministry of Agriculture & Food Security were met and appraised about preparation of the PIF. The proposed project activities are also relevant to the Ministry of Livestock & Fisheries, also documented in the CAMP.</p> <p>The Ministry of Trade and Industry, and East African Community Affairs, MoTIEAC; Ministry of Agriculture and Food Security, MoAFS; and Ministry of Livestock and Fisheries, MoLF would also be close cooperating agencies for the value chains mainstreaming and resilience building components which require backward and forward sector intergration and linkages.</p> <p>Water, Sanitation & Hygiene (WASH) Sector Strategic Framework brought out by the Ministry of Water Resources & Irrigation[3] outlines a strategy for management of water resources through watershed development and setting up watershed management institutions at various levels. The proposed project aligns with the building of institutional capacity at the grassroots level.</p>

	<p>el. At the national level, the project will evolve guidelines for community based watershed development.</p> <p>The Ministry of Gender, Child and Social Welfare, in the National Gender Policy^[4] highlights the limited access of women to productive assets such as land, agricultural inputs and extension services. Articles within the Bill of Rights addresses these customary practices by providing a gender-responsive legal framework and mechanisms. This project aligns with the goal of the policy and gender mainstreaming of all its activities is an integral part of its design.</p> <p>An advisory board comprising representatives from these ministries will be formed to provide overall guidance to the project and a forum to share project progress.</p>
Private Sector (SMEs and organised community producer groups)	<p>The project will mobilise and organise groups of producers that will be the direct beneficiaries of the project's interventions. Those are small and micro-scale businesses that are capacitated to develop food processing and marketing-related income generating activities. The coordination with these private sector entities is organised by the Ministry of Trade, Industry and East African Affairs, in collaboration with the Ministry of Agriculture and Food Security.</p>

[1] Initial discussions were held with state officials including the Dy. Governor, acting Minister of Agriculture, the General Manager of Agriculture and other officials of the agricultural department.

[2] Ministry of Agriculture, Forestry, Cooperatives and Rural Development Ministry of Livestock and Fisheries Industries (2015), Comprehensive Agricultural Development Master Plan, Final Report, Japan International Cooperation Agency.

[3] Ministry of Water Resources & Irrigation (MWRI), "Water, Sanitation & Hygiene (WASH) Sector Strategic Framework", Ministry of Water Resources & Irrigation (MWRI) (2011).

[4] Ministry of Gender, Child and Social Welfare, Government of South Sudan, "National Gender Policy", Government of the Republic of South Sudan (2012), 66.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Women play a dominant role in the agricultural sector in South Sudan. Up to 85 percent of women and youth depend on agriculture for livelihood sustenance. By some estimates the proportion of women engaged in cropping is 80 percent of the workforce, further, 80% of the households working in agriculture are headed by women. Women also dominate the post-harvest handling of crops and are active in livestock rearing and fisheries as well. The prominent role of women in agriculture is contrasted by a lack of customary rights to tenure and inheritance. While the National Gender Policy tries to elevate the legal rights of women at par with men, traditional and customary relationships on the ground are still to be transformed. The design of all outreach activities proposed under the LDCF project will need to be governed by these factors. The following specific actions are proposed:

A gender specialist will be hired at the initial stages of project implementation. A situation analysis report will be prepared which presents and analysis of gender roles and relations in the agricultural sector and suggests specific checks and balances that ensure gender mainstreaming in project interventions. The gender specialist will also ensure gender sensitisation of the project staff and all collaborating teams through regular training and capacity building. Finally, she/he will ensure all training materials, guidelines and documents produced adhere to best principles in gender main streaming and addressing the different needs of women, girls and men.

Recruitment of the project will ensure that there is representation of women at all levels so that interaction with the primary stakeholders is facilitated and the participation of women in project activities and linkages with local, state and national level decision processes is ensured.

Training and capacity building materials will be designed to address beneficiaries who are mostly women. They will be illustrated, translated into Dinka and innovative delivery mechanisms such as radio broadcasts and audio recordings will be used to disseminate information to the rural audience who are often illiterate and semi-literate.

Interventions will be routed through CBOs with equitable gender representation. The implementation strategy will specifically involve women based organisations such as self-help groups or micro credit groups as the route for project delivery. This will ensure that: i) the activities are targeted at groups of households rather than individuals, ii) it spreads the costs of activities by allowing the women to share in the labour (which is an existing practice) and the materials and tools provided, iii) a support structure to facilitate sharing of responsibilities such as child care among the women groups.

Access of women to all aspects of project implementation will be ensured through implementation protocols which ensure gender equity amongst beneficiaries. Efforts will be made to ownership of assets provided by the project is given to women groups or women headed households through careful targeting of beneficiaries and negotiations with households and women groups. Agreements will be formulated with all households receiving project benefits which require signatories to accept equal ownership of assets between women and men.

A large number of women in rural areas are not able to access training. For many small-scale business development initiatives, support is sometimes provided by government agencies and partners targeting women empowerment and supporting gender mainstreaming measures, though the impact remains insufficient and minimal to allow larger numbers of women to successfully start and expand businesses. UNIDO's baseline assessment of small business development reported that communities, in particular women, lacked skilled support service providers and the knowledge on how to operate a working facility and maintain or minimally repair equipments. Most businesses also have limited business and management skills (e.g. costing, pricing, record keeping). As a result, the community members are unable to operate profitably as an enterprise and seek or expand their business activities. The project will support women empowerment by organizing entrepreneurship trainings targeted at women business groups and youth at varying literacy levels and adapted to community context.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

The heavy focus on highly vulnerable subsistence farmers in remote areas in South Sudan, especially in the northern Bahr el ghazal region, and the nature of the activities in this project will limit involvement of the private sector. Despite this fact, the project will also look for option to sustain results and service delivery in the long-term, and in that sense will explore the possibility of establishing public-private partnerships for climate resilient community and small business-targeted services. The project interventions that address capacity building for small businesses will optimize the potential benefits that businesses can make by linking to value chains involving vulnerable subsistence farmers. The small business opportunities generated will be showcased across the various regions and partners in the country with potential for replication and scaling up. The implantation area is one of the most secure and conflict-free areas in South Sudan, at the border with neighboring Sudan, making it a prime target for private entities looking to expand outside of the capital area and connect with Sudan. The project will provide a certain level of financial literacy and business capacity building with the creation of social capital in target groups. This could be a first step in the provision of financial services and skills trainings involving potential private sector investors at local scales and small businesses in those underserved areas and the implementation of microfinance institutions for credit, insurance companies providing climate-linked insurance products, agro-equipment and agricultural inputs.

5. Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Risk	Risk Category	Description and Proposed Mitigation Measures
Conflict and insecurity	High	<p>Conflict and lack of security in parts of the country is the foremost risk for implementing the proposed LDCF project. While the current peace agreement stands, tensions and risks of conflicts remain high. As a result, markets and trade in agricultural commodities has been suppressed. Connectivity between regions has worsened in recent years and has limited the effectiveness and reach of extension services. The proposed project site is among the most secure and conflict free regions of the country and most UN agencies intervene in the area through outposted offices in Northern Bahr el Ghazal. Support from both the National and State governments as well as the UNSDSS will also be solicited prior to initiating activities to ensure that chosen areas are well suited for the intervention with support from the communities. During the PPG, multiple potential sites will be selected within Aweil and Aweil East to allow project activities to be moved to other sites in the event of deteriorating security conditions. In case conflict spreads throughout the country agro-ecological zone, activities will be curtailed to policy documentation, preparation of training materials and capacity building (Component 1) for those areas while other activities will continue elsewhere. In this case, UNDP and UNIDO will consult the GEF Secretariat to discuss and agree on the most appropriate course of action should the security situation jeopardize project activities.</p>
Climate change and related hazards	Medium	<p>Extreme weather events, droughts, floods, increased variability in rainfall and increased temperatures, all have a direct impact on the agricultural sector and many natural processes resulting in a decline in ecosystem goods and services. South Sudan is likely to face warming two and a half times that of the global average and 30% reduction in cultivable areas if current trends persist. Water shortages and reduced quality in forage and pasture-lands are expected. Extreme events and alteration of seasonal patterns in rainfall are other likely consequences of climate change in the country. The maximum impacts will be felt in the western floodplains agro-ecological zone which is being targeted for interventions. Other agro-ecological zones expected to be affected are the north-eastern floodplains, hills and mountains, Nile-Sobat rivers and pastoral zones. The project will help communities adopt climate resilient strategies building upon government programmes outlined in the CAMP and WASH sector strategic plan and baseline projects.</p>

Limited Markets	Medium	Limited markets and reduced access to existing markets to deal with food surplus or accessing inputs is a challenge across the agricultural sector. Available markets will be identified and links to them improved through existing networks at the County and Payam level.
Poor capacities of community based organisations and weak institutional links	Medium	Capacities of CBOs are poor and the links between communities and government and non-government institutions are weak. This makes it difficult to implement development programmes and interventions. The project will strengthen existing CBOs, with a specific attention to gender-mainstreaming and building social capital within communities. Additionally, new CBOs will be formed in order to implement project activities as a group instead of targeting individual beneficiaries. These CBOs will be linked to other institutions at the Payam, County and State
Lack of Implementation Frameworks	Low	Large scale interventions for climate resilience, require among other things, a clear implementation framework and guidelines. The absence of these leads to dispersed and often contradictory approaches by different implementing agencies. It also leads to duplication of effort and inefficiencies in the use of scarce resources. The LDCF project will build upon existing masterplans and sector strategies to formulate clear, spatially explicit and community based implementation frameworks and guidelines for climate resilient agriculture and NRM through watershed approaches. These will be shared with the government at the national and state levels and with other implementation agencies for their suggestions and inputs.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

South Sudan is a young country, existing structures, definition of roles and protocols for coordination between different institutions are weak. This is leading to a duplication of effort, lack of communication between government, multilateral, non-government agencies and private entities, which weaken the delivery of projects. UNDP and UNIDO will act as the Implementing Agencies (IAs) for this project. UNDP will be responsible and held accountable for managing the project on a day-to-day basis as per UNDP's Direct Implementation Modality (DIM). They will utilise the constitutional arrangement and roles already in place in South Sudan to ensure the effective implementation of the project. The outputs under UNIDO's responsibility will be executed in line with UNIDO's rules and regulations. The relevant institutions to be involved in the implementation include the Ministry of Environment and Forestry, Ministry of Agriculture and Food Security, Ministry of Trade and Industry, and East African Community Affairs, Ministry of Livestock and Fisheries. The Project management unit (PMU) within UNDP will be guided by a Project board comprised of UNDP, UNIDO and the Ministries involved in the project.

Independently from the PMU, UNDP and UNIDO will provide an oversight and quality insurance role to the project with support from staff within the Country offices, but also from the regional and headquarters levels. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role will be covered by the GEF Agency.

UNDP will work closely with government counterparts, communities and community-based organizations. Mainstreaming of adaptation in planning and policies will be done through close consultation with the main government entities identified as project's stakeholders. Particular work on resilience agriculture and livelihood will be conducted with the Ministry of Agriculture and Food Security and the Ministry of Livestock and Fisheries while work on ecosystem restoration and land degradation will involve mostly the Ministry of Environment and Forestry.

UNIDO will intervene through its Department of Agribusiness Development to ensure the promotion of market-led and potential scaling up of business interventions by the private sector. UNIDO will consider the capacity of business service providers who could act as potential execution entities for the project. Execution partners should particularly be able or mandated to adopt and replicate market opportunities that are generated in the target sites. UNIDO will execute components that leverage market driven adaptation and resilience building opportunities at scale. This work requiring value chain intervention and private sector development will be done in close cooperation with the Ministry of Trade and Industry, and East African Community Affairs, the Ministry of Agriculture and Food Security, and the Ministry of Livestock and Fisheries.

The project will complement the BRACE II project, "Building Resilience through Asset Creation and Enhancement", funded by the Department for International Development (DFID) and implemented through the WFP over the period 2016-2021. This project seeks to enhance food security and resilience of communities to climate variability and extremes by building shared community assets and containing resource conflict in the former states of Western Bahr el Ghazal, Northern Bahr el Ghazal, Warrap, Lakes and Eastern Equatoria regions. The project is funded by. Lessons learnt from the approach of building community assets as opposed to individual beneficiaries and addressing resource based conflicts through local community organisations will provide important inputs to the LDCF proposal which will adopt a similar implementation framework.

UNDP also completed a project on Protected Area Network Management and Building Capacity in Post Conflict Southern Sudan closed operationally on 31 December 2016. The objective of the project was to establish a core network of protected areas covering an estimated 68,000 Km² of globally important habitat and strengthen the capacity of the GoSS and the MWCT at the site and central levels and consolidate the legal, planning and institutional framework providing the foundation for biodiversity conservation and overall protected area network management in the Southern Sudan. The project had a component on supporting alternative livelihoods for affected communities. The LDCF project will seek to build on the lessons learnt and existing work done where feasible.

UNDP in partnership with FAO, UNICEF, UNHCR is also launching a second phase of Recovery and Stabilization Project in South Sudan. This inter-alia will target building up of local livelihood and economic activities including provision of farming inputs and introduction of techniques to boost agricultural production and improve food security in disaster prone areas, provision of drought tolerant crop varieties, strengthening local adaptive capacities coping mechanisms and integrated water resource management approaches.

The LDCF project will leverage the work done under the project and build upon the work initiated under common targeted sites. Where feasible the choice of sites will be harmonized for maximum development results and impact.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

- National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC
- National Action Program (NAP) under UNCCD
- ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury
- Minamata Initial Assessment (MIA) under Minamata Convention
- National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD
- National Communications (NC) under UNFCCC
- Technology Needs Assessment (TNA) under UNFCCC
- National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
- National Implementation Plan (NIP) under POPs
- Poverty Reduction Strategy Paper (PRSP)
- National Portfolio Formulation Exercise (NPFE) under GEFSEC
- Biennial Update Report (BUR) under UNFCCC
- Others

The project is consistent with the following National Priorities:

National Adaptation Plan of Action (NAPA)

The project is closely aligned with three of the five key thematic areas described in the NAPA where adaptation is required, namely: environment, water resources and agriculture. Within these themes, the project is aligned with the following key adaptation needs:

§ *Environment:* i) Promote agro-forestry practices as a way of diversifying land production systems and promoting alternative livelihood options. ii) Promote afforestation of degraded landscapes/watersheds using multi-use forest species to increase community safety-nets and diversify livelihoods. iii) Develop forest reserves and management plans to protect watersheds and improve future water availability. iv) Increase awareness of local communities on climate change and environmental protection. v) Establish seed/gene banks to protect threatened species and identify climate-resilient varieties. vi) Introduce an integrated natural resource management approach.

§ *Water Resource Management:* i) Undertake assessments to identify areas prone to shortages under climate change and inform integrated water resources management. ii) Promote the development of water harvesting structures, including dykes, water reservoirs and canals, to increase water availability. iii) Improve water and sanitation infrastructure in urban areas to improve water supply and quality. iv) Develop supplementary irrigation systems in rural areas to improve agricultural production and increase food security.

§ *Agriculture*: i) Implement rangeland management plans to control overgrazing and ensure fodder availability under climate change conditions. ii) Identify and promote the use of drought-resilient livestock varieties. iii) Protect and preserve wetlands and water resources, including the regulation and management of such water bodies. iv) Introduce supplementary irrigation technologies to improve agricultural production and increase food security. v) Strengthen agricultural and veterinary extension services to train farmers on climate- resilient agricultural techniques. vi) Introduce conservation agriculture techniques to improve production. vii) Promote the implementation of projects identified in the Comprehensive Agricultural Master Plan, with a focus on those projects that benefit vulnerable communities.

Intended Nationally Determined Contributions (INDC)

The project builds on the following national adaptation objectives of the Government of South Sudan: i) Prioritise the enhancement of climate resilience in the agricultural sector (crop production, livestock) through the promotion of climate-smart agriculture, livestock improvement and soil erosion control. ii) Promoting the harvesting and retention of water for different uses implemented through community-based watershed management with a focus on maintaining the quality and quantity of water resources for multiple uses and stakeholders.

Among the actions envisaged to reduce vulnerabilities to climate reduced hazards, the project will build upon the following: i) Enhance access to water in light of growing climate threats through integrated watershed management. ii) Enhance food security under a changing climate through the introduction of climate-smart agricultural techniques. iii) Promote agro-forestry practices as a way of diversifying land production systems and promoting alternative livelihood options. iv) Promote afforestation of degraded landscapes/watersheds using multi- use forest species to increase community safety-nets and diversify livelihoods. v) Increase awareness of local communities on climate change. vi) Introduce an integrated natural resource management approach. vii) Water technologies for water savings, recycling, harvesting, irrigation and sustainable management for agricultural purposes.

Other national policies and plans are under preparation which includes the National Capacity Self-Assessment (NCSA) which is expected to be completed in Q3 2017, the Initial National Communication to the UNFCCC, expected to be completed in Q2 2017 and the National Biodiversity Strategy and Action Plan (NBSAP) which is expected to be completed in Q3 2017.

The Comprehensive Agricultural Development Master Plan (CAMP) - 2015 to 2040

The CAMP describes the national priorities, development themes and projects of the Ministry of Agriculture and Food Security along with programmes of the Ministry of Environment & Forests as well as Ministry of Livestock & Fisheries for the period between 2015 and 2040. The document does not acknowledge the significant risks posed by climate change to the agricultural sector encompassing crops, forestry and livestock. As a result, the priority themes and projects (tables 2-1, 2-3 and 2-6) do not address the multifaceted challenges due to climate change that confront communities dependent on the sector.

The LDCF project proposal will identify and address gaps in climate change resilience and adaptation in the implementation priorities and projects listed in the CAMP. It will build institutional capacities in agricultural extension and at the grassroots level by introducing drought resistant varieties, crop diversification, strengthening and creation of farm based CBOs and introduction of low-cost technologies for tillage and irrigation. The project will also build institutional capacities for designing integrated watershed development projects at the national and state levels and with communities in agro-forestry and pastureland management through soil and water conservation in micro-watersheds and formation of watershed development committees to ensure coordination and cooperation between pastoral groups and farmers.

Commitment to Land Degradation Neutrality – under discussion with the UNCCD

South Sudan is a member to the United Nations Convention to Combat Desertification (UNCCD), and adopted Land Degradation Neutrality Target Setting Programme as a means to fulfilling this mandate. South Sudan has submitted LDN baseline and voluntary targets together with proposed measures to achieve avoid, minimize and reverse land degradation by 2030 as compared to 2015. The LDN targets and associated measures are under discussion with the UNCCD for inclusion in the Annex of the Convention. The initial targets set by South Sudan as part of this process (indicative until inclusion in the UNCCD Annex):

- Improve productivity in 21,950.6 km² and 2,194.4 km² SOC stocks in lands of South Sudan by 2030 as compared to 2015
- Rehabilitate 27,019.6 km² of degraded and abandoned land of South Sudan by 2030
- Halt the conversion of forests and wetlands to other land cover classes by 2030
- Increase forest cover by 20% by 2030 as compared to 2015
- Reduce the rate of soil sealing (conversion to artificial land cover) by 100% by 2030 as compared to 2015.

The LDCF project will contribute to achieving South Sudan's LDN target by promoting sustainable landscape management approaches in micro-watersheds that aim to rehabilitate those degraded areas, improve soil productivity and restore ecosystem services.

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The central repository of data in South Sudan is the National Bureau of Statistics. In addition, there are numerous government led initiatives and portals such as the AFIS project providing geospatial datasets and analysis of climate and socio-economic data sets for African regions, including South Sudan. However, the availability of baseline data which could be used to design grassroots level interventions in the Republic of South Sudan is inadequate.

The LDCF project will require data for detailed planning, monitoring and evaluation of the activities, with specific emphasis on targeting vulnerable groups and regions. To accomplish this, the project will undertake multidisciplinary collection of data utilising field based rapid appraisals and participatory research methods with a focus on livelihood analysis and vulnerabilities. In addition, agricultural and engineering surveys of farmlands and micro-watersheds will be required in order to formulate plans for farmland management and development of pasturelands and watersheds.

The project will also collect and collate available information and convert it into materials for capacity building both for trainers and for CBOs. Existing materials from other projects will be built upon, rather than re-inventing the wheel, and adapted and translated so it can be used by rural groups of women and men. Materials thus produced will be shared under an appropriate variant of the open source Creative Commons license. Component 1 of the project will generate the bulk of the data and materials for the project. The outputs will have relevance at both the policy levels as well as for agencies engaged in similar activities at the grass-root level.

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 with this template).

Name	Position	Ministry	Date
David Batali Oliver	Director for Pollution Control and GEF Focal Operational Point – South Sudan	MINISTRY OF ENVIRONMENT AND FORESTRY	2/27/2019

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Specific sites will be identified during the PPG phase and initiation.

Fig. 1. Map of targeted states



Table 1. Project locations with geo-referenced information

Site	geonames.org ID	Brief description
Aweil State	11550543	Western Flood Plain agro-ecological zone. Both regions are food insecure regions with the highest rate of malnutrition, yet with high potential for climate resilient agricultural interventions.
Aweil East State	11550582	