



CEO Endorsement (CEO) entry ? Full Sized Project ? GEF - 7

**Part I: Project Information**

**GEF ID**

10178

**Project Type**

FSP

**Type of Trust Fund**

MTF

**CBIT/NGI**

CBIT **No**

NGI **No**

**Project Title**

Watershed approaches for climate resilience in agro-pastoral landscapes

**Countries**

South Sudan

**Agency(ies)**

UNDP, UNIDO

**Other Executing Partner(s)**

Ministry of Environment and Forest

**Executing Partner Type**

Government

**GEF Focal Area**

Multi Focal Area

**Sector**

Climate Change Adaptation Sector

**Taxonomy**

Focal Areas, Climate Change, Climate Change Adaptation, Community-based adaptation, Least Developed Countries, Livelihoods, Ecosystem-based Adaptation, Influencing models, Strengthen institutional capacity and decision-making, Demonstrate innovative approaches, Stakeholders, Civil Society, Community Based Organization, Communications, Behavior change, Awareness Raising, Indigenous Peoples, Private Sector, Individuals/Entrepreneurs, SMEs, Local Communities, Type of Engagement, Participation, Information Dissemination, Gender Equality, Gender results areas, Access to benefits and services, Capacity Development, Participation and leadership, Gender Mainstreaming, Sex-disaggregated indicators, Beneficiaries, Gender-sensitive indicators, Women groups, Capacity, Knowledge and Research

**Rio Markers**

**Climate Change Mitigation**

No Contribution 0

**Climate Change Adaptation**

Principal Objective 2

**Biodiversity**

No Contribution 0

**Land Degradation**

Significant Objective 1

**Submission Date**

6/30/2021

**Expected Implementation Start**

3/1/2023

**Expected Completion Date**

3/1/2028

**Duration**

60In Months

**Agency Fee(\$)**

891,547.00

**A. FOCAL/NON-FOCAL AREA ELEMENTS**

<b>Objectives/Programs</b>	<b>Focal Area Outcomes</b>	<b>Trust Fund</b>	<b>GEF Amount(\$)</b>	<b>Co-Fin Amount(\$)</b>
CCA-1	Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	LDC F	6,471,461.00	15,438,839.00
CCA-2	Mainstream Climate Change Adaptation and Resilience for Systemic Impact	LDC F	2,000,000.00	6,244,833.00
LD-1-1	Maintain or improve flow of agro-ecosystem services to sustain food production and livelihoods through Sustainable Land Management (SLM)	GET	913,242.00	2,323,960.00
<b>Total Project Cost(\$)</b>			<b>9,384,703.00</b>	<b>24,007,632.00</b>

**B. Project description summary**

**Project Objective**

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

<b>Project Component</b>	<b>Financing Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>GEF Project Financing(\$)</b>	<b>Confirmed Co-Financing(\$)</b>
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: 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	<p>1.1 Integration of climate change adaptation strategies in agriculture and natural resources management policies. (UNDP)</p> <p>1.2 Integration of adaptation measures in relevant value chains support policy frameworks (UNIDO)</p> <p>1.3: Guiding materials to support climate-responsive extension services developed, delivered and distributed (UNDP)</p> <p>1.4 Training of trainers and extension personnel delivered to support climate-smart agriculture and natural resources management (UNDP)</p> <p>(UNDP:1,029,358+ UNIDO: 300,000)</p>	LDC F	1,329,358.00	5,491,824.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 2: 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>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>2.2 Farmer field schools established and community based organizations (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>	LDC F	4,866,626.00	10,443,070.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3: 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>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>3.2 Improved ground water recharge and soil moisture retention through community-based soil and water conservation measures in micro-watersheds (UNDP)</p> <p>3.3 Reduced impacts of floods through creation of water storage and spreading structures and drainage control measures in the catchment (UNDP)</p> <p>3.4 Increased resilience to drought through creation of water points from shallow boreholes (UNDP)</p>	LDC F	1,828,587.00	4,593,416.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3: 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>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>3.2 Improved ground water recharge and soil moisture retention through community-based soil and water conservation measures in micro-watersheds (UNDP)</p> <p>3.3 Reduced impacts of floods through creation of water storage and spreading structures and drainage control measures in the catchment (UNDP)</p> <p>3.4 Increased resilience to drought through creation of water points from shallow boreholes (UNDP)</p>	GET	913,242.00	2,323,960.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
				<b>Sub Total (\$)</b>	<b>8,937,813.00</b>	<b>22,852,270.00</b>
<b>Project Management Cost (PMC)</b>						
LDCF			446,890.00		1,155,362.00	
<b>Sub Total(\$)</b>			<b>446,890.00</b>		<b>1,155,362.00</b>	
<b>Total Project Cost(\$)</b>			<b>9,384,703.00</b>		<b>24,007,632.00</b>	

Please provide justification

**C. Sources of Co-financing for the Project by name and by type**

<b>Sources of Co-financing</b>	<b>Name of Co-financier</b>	<b>Type of Co-financing</b>	<b>Investment Mobilized</b>	<b>Amount(\$)</b>
Recipient Country Government	Ministry of Environment & Forest	Public Investment	Investment mobilized	2,202,632.00
Recipient Country Government	Ministry of Agriculture & Food Security	Public Investment	Investment mobilized	2,665,789.00
Recipient Country Government	Ministry of Water Resources & Irrigation	In-kind	Recurrent expenditures	6,209,211.00
Recipient Country Government	Ministry of Trade and Industry	In-kind	Recurrent expenditures	3,000,000.00
Recipient Country Government	Ministry of Agriculture and Food Security	In-kind	Recurrent expenditures	5,000,000.00
Recipient Country Government	Ministry of Environment and Forestry	In-kind	Recurrent expenditures	3,000,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	950,000.00
GEF Agency	UNDP	Grant	Investment mobilized	150,000.00
GEF Agency	UNIDO	Grant	Investment mobilized	50,000.00
Civil Society Organization	World Vision South Sudan	Grant	Investment mobilized	780,000.00
<b>Total Co-Financing(\$)</b>				<b>24,007,632.00</b>

**Describe how any "Investment Mobilized" was identified**

Ministry of Trade and Industry (MoTI) has committed to co-financing 3,000,000 towards a) Enhancing the existing industrial policy framework (IPF); b) conducting feasibility studies for industries; and c) capacity

building and institutional development. The co-financing will also support revival of relevant industries and provide office space, infrastructure and equipment. The Ministry of Water Resources and Irrigation (MoWRI) has committed co-finance a total of 6,209,211 for which 4,967,369 will be towards supporting technical and economic feasibility studies and design studies envisaged under component 1 and 1,241,842 for construction of irrigation facilities under component 3. The Ministry of Environment and Forestry (MEF) is providing in-kind co-finance for USD 3,000,000 to support a) project management, office space and community consultations ; b) training, awareness raising and community mobilization; and c) infrastructure and equipment such as automatic weather stations for early warning systems. Ministry of Agriculture and Food Security (MOAFS) has committed 5,000,000 towards a) project management, office space, community consultations; b) training and community mobilization ; c) extension facilities and infrastructure for office, equipment, irrigation facilities and demonstration sites; and d) infrastructure and equipment. UNIDO will provide in-kind co-finance for 950,000 towards: i) strengthening small businesses linkages to markets for financing solutions such as through micro-finance entities, and demand driven training centres and community networks.

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

<b>Agency</b>	<b>Trust Fund</b>	<b>Country</b>	<b>Focal Area</b>	<b>Programming of Funds</b>	<b>Amount(\$)</b>	<b>Fee(\$)</b>	<b>Total(\$)</b>
UNDP	LDC F	South Sudan	Climate Change	NA	6,896,461	655,164	7,551,625.00
UNIDO	LDC F	South Sudan	Climate Change	NA	1,575,000	149,625	1,724,625.00
UNDP	GET	South Sudan	Land Degradation	LD STAR Allocation	913,242	86,758	1,000,000.00
<b>Total Grant Resources(\$)</b>					<b>9,384,703.00</b>	<b>891,547.00</b>	<b>10,276,250.00</b>

**E. Non Grant Instrument**

NON-GRANT INSTRUMENT at CEO Endorsement

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Includes Non grant instruments? **Yes**

Includes reflow to GEF? **No**

**F. Project Preparation Grant (PPG)**

PPG Required **true**

**PPG Amount (\$)**

200,000

**PPG Agency Fee (\$)**

19,000

<b>Agency</b>	<b>Trust Fund</b>	<b>Country</b>	<b>Focal Area</b>	<b>Programmin g of Funds</b>	<b>Amount(\$)</b>	<b>Fee(\$)</b>	<b>Total(\$)</b>
UNDP	LDC F	South Sudan	Climat e Change	NA	150,000	14,250	<b>164,250.00</b>
UNIDO	LDC F	South Sudan	Climat e Change	NA	50,000	4,750	<b>54,750.00</b>
<b>Total Project Costs(\$)</b>					<b>200,000.00</b>	<b>19,000.00</b>	<b>219,000.00</b>

## 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	15000.00	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 under third-party certification incorporating biodiversity considerations**

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	15,000.00		

**Indicator 4.4 Area of High Conservation Value or other forest loss avoided**

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

**Indicator 4.5 Terrestrial OECMs supported**

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

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

Title

Submitted

**Indicator 11 People benefiting from GEF-financed investments**

	<b>Number (Expected at PIF)</b>	<b>Number (Expected at CEO Endorsement)</b>	<b>Number (Achieved at MTR)</b>	<b>Number (Achieved at TE)</b>
<b>Female</b>	40,000	39,271		
<b>Male</b>	35,000	35,729		
<b>Total</b>	75000	75000	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

## Meta Information - LDCF

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LDCF true

SCCF-B (Window B) on technology transfer false

SCCF-A (Window-A) on climate Change adaptation false

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Is this project LDCF SCCF challenge program?

false

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This Project involves at least one small island developing State(SIDS). false

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This Project involves at least one fragile and conflict affected state. true

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This Project will provide direct adaptation benefits to the private sector. true

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This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). true

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This Project has an urban focus. false

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This Project covers the following sector(s)[the total should be 100%]:\*

Agriculture	70.00%
Natural resources management	30.00%
Climate information services	0.00%
Coastal zone management	0.00%
Water resources management	0.00%
Disaster risk management	0.00%
Other infrastructure	0.00%
Health	0.00%
Other (Please specify:)	0.00%
Total	100%

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This Project targets the following Climate change Exacerbated/introduced challenges:\*

Sea level rise false

Change in mean temperature false

Increased climatic variability true

Natural hazards true

Land degradation true

Coastal and/or Coral reef degradation false

Groundwater quality/quantity false

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[To calculate the core indicators, please refer to Results Guidance](#)

## Core Indicators - LDCF

CORE INDICATOR 1	Total	Male	Female	% for Women
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Total number of direct beneficiaries	75,000	35,729	39,271	52.36%
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**CORE INDICATOR 2**

Area of land managed for climate resilience (ha)	15,000.00
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**CORE INDICATOR 3**

Total no. of policies/plans that will mainstream climate resilience	4
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**CORE INDICATOR 4**

		Male	Female	% for Women
Total number of people trained	12,665	8,226	4,439	35.05%

## OUTPUT 1.1.1

# Physical and natural assets made more resilient to climate variability and change

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		Male	Female
Total number of direct beneficiaries from more resilient physical assets	<b>71,250</b>	<b>33,943</b>	<b>37,307</b>

Ha of agriculture land	Ha of urban landscape	Ha of rural landscape	No. of residential houses
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<b>300.00</b>		<b>14,700.00</b>	<b>0</b>
No. of public buildings	No. of irrigation or water structures	No. of fishery or aquaculture ponds	No. of ports or landing sites
<b>0</b>	<b>129</b>	<b>0</b>	<b>0</b>
Km of road	Km of riverbank	Km of coast	Km of storm water drainage
Other	Other(unit)	Comments	
<b>0</b>			

## OUTPUT 1.1.2

### Livelihoods and sources of income of vulnerable populations diversified and strengthened

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		Male	Female
Total number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	<b>3,750</b>	<b>1,786</b>	<b>1,964</b>
<b>Livelihoods and sources of incomes strengthened / introduced</b>			
Agriculture	Agro-Processing	Pastoralism/diary	Enhanced access to markets

<b>false</b>	<b>false</b>	<b>false</b>	<b>false</b>
Fisheries /aquaculture	Tourism /ecotourism	Cottage industry	Reduced vulnerability of supply chain
<b>false</b>	<b>false</b>	<b>false</b>	<b>false</b>
Beekeeping	Enhanced opportunity for Other employment		Comments
<b>false</b>	<b>false</b>	<b>false</b>	

### OUTPUT 1.1.3

## New/improved climate information systems deployed to reduce vulnerability to climatic hazards/variability

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		Male	Female
Total number of direct beneficiaries from the new/improved climatic information systems	<b>0</b>	<b>0</b>	<b>0</b>
<b>Climate hazards addressed</b>			
Flood	Storm	Heatwave	Drought
<b>false</b>	<b>false</b>	<b>false</b>	<b>false</b>
Other	Comments		
<b>false</b>			

**Climate information system developed/strengthened**

Downscaled Climate model	Weather/Hydromet station	Early warning system	Other
<b>false</b>	<b>false</b>	<b>false</b>	<b>false</b>

Comments

**Climate related information collected**

Temperature	Rainfall	Crop pest or disease	Human disease vectors
<b>false</b>	<b>false</b>	<b>false</b>	<b>false</b>

Other  
**false**                      Comments

**Mode of climate information dissemination**

Mobile phone apps	Community radio	Extension services	Televisions
<b>false</b>	<b>false</b>	<b>false</b>	<b>false</b>

Leaflets                      Other                      Comments  
**false**                      **false**

## **OUTPUT 1.1.4**

# **Vulnerable natural ecosystems strengthened in response to climate change impacts**

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Types of natural ecosystem

Desert <b>false</b>	Coastal <b>false</b>	Mountainous <b>false</b>	Grassland <b>false</b>
Forest <b>false</b>	Inland water <b>false</b>	Other <b>false</b>	Comments

## OUTPUT 1.2.1

### Incubators and accelerators introduced

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	Male	Female
Total no. of entrepreneurs supported	0	
	Comments	
No. of incubators and accelerators supported		
	Comments	
No. of adaptation technologies supported		

## OUTPUT 1.2.2

### Financial instruments or models to enhance climate resilienced developed

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**Financial instruments or models**

PPP models <b>false</b>	Cooperatives <b>false</b>	Microfinance <b>false</b>	Risk insurance <b>false</b>
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Equity <b>false</b>	Loan <b>false</b>	Other <b>false</b>	Comments
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## OUTPUT 2.1.1

### Cross-sectoral policies and plans incorporate adaptation considerations

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Will mainstream climate resilience <b>0</b>	Of which no. of regional policies/plans <b>0</b>	Of which no. of national policies/plan <b>3</b>
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**Sectors**

Agriculture <b>false</b>	Fishery <b>false</b>	Industry <b>false</b>	Urban <b>false</b>
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Rural <b>false</b>	Health <b>false</b>	Water <b>false</b>	Other <b>false</b>
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Comments

## OUTPUT 2.1.2

## **Cross sectoral institutional partnerships established or expanded**

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No. of institutional partnerships established or strengthened      **8**

Comments

### **OUTPUT 2.1.3**

**Systems and frameworks established for continuous monitoring, reporting and review of adaptation**

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No. of systems and frameworks      **1**

Comments

### **OUTPUT 2.1.4**

**Systems and frameworks established for continuous monitoring, reporting and review of adaptation**

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No. of systems and frameworks 1

Comments

### **OUTPUT 2.2.1**

**No. of institutions with increased ability to access and/or manage climate finance**

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No. of institution(s)

Comments

### **OUTPUT 2.2.2**

**Institutional coordination mechanism created or strengthened to access and/or manage climate finance**

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No. of mechanism(s)

Comments

### **OUTPUT 2.2.3**

## **Global/regional/national initiatives demonstrated and tested early concepts with high adaptation potential**

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No. of initiatives or technologies

Comments

### **OUTPUT 2.2.4**

## **Public investment mobilized**

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Amount of investment (US\$)

Comments

## OUTPUT 2.2.5

### Private investment mobilized

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Amount of investment  
(US\$)

Comments

## OUTPUT 2.3.1

### No. of people trained regarding climate change impacts and appropriate adaptation responses

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Total no. of people trained	<b>12,665</b>	Male <b>8,226</b>	Female <b>4,439</b>
Of which total no. of people at line ministries	<b>250</b>	Male <b>160</b>	Female <b>90</b>

Of which total no. of community/association	<b>9,430</b>	Male <b>6,130</b>	Female <b>3,300</b>
Of which total no. of extension service officers	<b>774</b>	Male <b>500</b>	Female <b>274</b>
Of which total no. of hydromet and disaster risk management agency staff	<b>0</b>	Male <b>0</b>	Female <b>0</b>
Of which total no. of small private business owners	<b>2,211</b>	Male <b>1,436</b>	Female <b>775</b>
Of which total no. school children, university students or teachers	<b>0</b>	Male <b>0</b>	Female <b>0</b>
Other	Comments		

## OUTPUT 2.3.2

### No. of people made aware of climate change impacts and appropriate adaptation responses

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No. of people with raised awareness	<b>0</b>	Male <b>0</b>	Female <b>0</b>
Please describe how their awareness was raised			

## **OUTPUT 3.1.1**

### **National climate policies and plans enabled including NAP processes by stronger climate information decision-support services**

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No. of national climate policies and plans

Comments

## **OUTPUT 3.1.2**

### **Systems and frameworks established for continuous monitoring, reporting and review of adaptation**

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No. of systems and frameworks

Comments

### **OUTPUT 3.1.3**

## **Vulnerability assessments conducted**

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No. of assessments  
conducted

Comments

### **OUTPUT 3.2.1**

## **No. of institutions with increased ability to access and/or manage climate finance**

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No. of institution(s)

Comments

### **OUTPUT 3.2.2**

## **Institutional coordination mechanism(s) created or strengthened**

## **to access and/or manage climate finance**

---

No. of mechanism(s)

Comments

### **OUTPUT 3.2.3**

**Global/regional/national initiative(s) demonstrated and tested early concepts with high adaptation potential**

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No. of initiative(s) or technology(ies)

Comments

### **OUTPUT 3.3.1**

**No. of people trained regarding climate change impacts and appropriate adaptation responses**

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Total no. of people trained	0	Male 0	Female 0
Of which total no. of people at line ministries	0	Male	Female
Of which total no. of community/association	0	Male	Female
Of which total no. of extension service officers	0	Male	Female
Of which total no. of hydromet and disaster risk management agency staff	0	Male	Female
Of which total no. of small private business owners	0	Male	Female
Of which total no. school children, university students or teachers	0	Male	Female
Other	Comments		

## OUTPUT 3.3.2

# No. of people made aware of climate change impacts and appropriate adaptation responses

---

	Male	Female
No. of people with raised awareness	0	

Please describe how their awareness was raised

## Part II. Project Justification

### 1a. Project Description

describe any changes in alignment with the project design with the original pif

The overall design of the project is in alignment with the PIF. However, based on direction from the GEF, activities pertaining to monitoring have been moved from the components into a separate M&E component. Budget allocations to these activities that were earlier embedded in the components have therefore been reduced accordingly. Per GEF guidance, the amount allocated for the M&E is less than 3% of the total project budget. The total co-financing proposed during the PIF stage was 29,500,000. This has reduced to USD 24,007,632, a total reduction of USD 5,492,368. This is on account of the completion of several ongoing projects which were expected to contribute to the co-finance. There were therefore reductions of a total of USD 5,663,157 from the Ministry of Agriculture and Food Security, USD 4,969,079 from UNIDO and USD 1,790,132 from the Ministry of Livestock and Fisheries. On the other hand, additional co-finance was obtained from the Ministry of Environment and Forestry (USD 3,000,000), Ministry of Trade and Industry (USD 3,000,000), World Vision South Sudan (USD 780,000) and UNDP (USD 150,000).

Notably, there has been a change made in the Implementation Partner for the project. This was based on capacity assessments and with approval from the government. An Implementing Partner, World Vision South Sudan (WVSS) who is independent from both UNDP and UNIDO was identified to execute the project on behalf of the government.

#### 1a. Project Description.

1) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

(systems description)

High levels of food insecurity and livelihood vulnerability of communities in South Sudan

Livelihoods of ninety five percent of South Sudan's population depends on climate sensitive natural resources including rain-fed agriculture, livestock raising[1]<sup>1</sup> and forests, which provide all the energy needs of households[2]<sup>2</sup>. Eighty five percent of the workforce is employed in subsistence agriculture. Crop production is largely done by women on small hand-cultivated plots[3]<sup>3</sup>. About 60% of the population is dependent on livestock rearing[4]<sup>4</sup> and animal husbandry, which, together with crop

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farming are the primary source of livelihood for 85% of households[5]<sup>5</sup>. About 81% of households in South Sudan cultivate land, 74% own livestock and 22% engage in fishing. In Northern Bahr el Ghazal (NBG) state - where the sites are located, about 85% households cultivate land, 65% own livestock and 12-15% are engaged in fishing[6]<sup>6</sup>. Livelihoods and food security of communities is therefore closely linked climate change.

#### Women and vulnerable groups lack access to resources to cope with climate change

A high proportion of the population in South Sudan is comprised of women and vulnerable groups[7]<sup>7</sup>. The latter includes Internally Displace Peoples (IDP), and Persons With Disabilities (PWD) who are directly affected by decades of violence and insecurity. Two ethnic groups, the Dinka and the Jur Chol traditionally reside in the region. The latter largely in Bar Mayen, Awada and Aroyo payams of Aweil Centre county. Customary laws and traditional leadership patterns are endorsed by the constitution[8]<sup>8</sup> and exist in parallel with democratic governance and legal structures. Many of these laws and customs are patriarchal and discriminatory against women, particularly in rural areas, who consequently lack access to and ownership of productive resources and are heavily burdened by non-remunerative family responsibilities and duties (Annex 11: Gender Analysis and Gender Action Plan). This makes women and vulnerable groups particularly susceptible to impacts climate change. Women rely more on natural resources to meet the daily requirements of fuel wood and water. Coping strategies pursued by women during crisis are also markedly different from those of men. Women rely more on NTFP to supplement food[9]<sup>9</sup>. This is also evident in the field data gathered during consultations with stakeholder, (Annex 9: Stakeholder Engagement Plan (SEP) and 9a: Stakeholder's Consultation Report). Like women, IDP and vulnerable groups in South Sudan also lack representation to traditional governance structures which control land and natural resources in most rural areas[10]<sup>10</sup>. This is coupled with limited access to productive resources, information and services, leaving them highly dependent on natural resources for income and food. It is therefore necessary that the proposed project organizes and provides representation to these groups at all stages of implementation and ensures activities are responsive to needs of women and vulnerable groups.

#### Climate change is likely to severely affect agricultural production and food security

Rainfall variability is the greatest determinant of agricultural production in South Sudan, causing droughts across the country and floods along the floodplains. Nearly 70% of the variability in the production of cereals and grains can be explained by variations in rainfall. Climate change is also driving deforestation to meet increased demands for fuelwood and land for agriculture leading to loss of ecosystem services and increased soil erosion. The later, coupled with overgrazing and bushfires is causing a decrease in agricultural productivity. Increased temperatures and increased

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evapotranspiration are leading to decreased flows, lowering of water tables and drying up of swamps and forests[11]<sup>11</sup>. Productive agricultural lands in selected project counties, Aweil Centre and Aweil East in NBG, are further threatened by encroaching desertification from the north. Excessive rains and consequent floods caused significant loss of crops and livestock in 2019[12]<sup>12</sup>. A year earlier year, below average and erratic rains constrained yields[13]<sup>13</sup> and were accompanied with an outbreak of the fall army worm. There has been a 10 to 20% decrease in the long rains since the 1970's coupled with warming by over a degree which is equivalent to another 10-20% reduction of rainfall[14]<sup>14</sup>. In the past four decades, the rate of warming in South Sudan was two and a half times greater than global averages. 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. This warming has amplified the impact of water shortages and drought, further reducing both crop harvests and pasture quality. Trends suggest that South Sudan will be warmer by one degree by 2060 and drying impacts could extend into the NBG by 2025.

The (negative) impact of these trends on yields of the staple sorghum are expected to be between 5-20%. Climate change may trigger changes in migratory patterns of pastoral groups. The area in South Sudan receiving over 500mm of rain - necessary for agro-pastoral livelihoods, has reduced by 18% since 1960[15]<sup>15</sup>. Possible impact of temperature increases include[16]<sup>16</sup>:

1. Increased evapotranspiration leading to
    - a. Increased water demand/need for crops, failing which losses and crop failures will occur.
    - b. Coupled with long dry periods causing drying of wetlands and rivers affecting both pastoralists and fisheries.
  2. Thermal stress in crops (particularly sorghum and wheat) leading to lowered yields and increased pest loads.
  3. Increased desertification, including in the NBG region with changing rainfall patterns. This in turn will:
    - a. Reduced tree densities, diversity and growth.
    - b. Increase wildfires, further affecting vegetation.
    - c. Soil degradation.
-

- d. Habitat degradation, including quality of rangelands.
4. Increased rainfall variability and shortening of the growing seasons is likely to lead to:
- a. Potential increases in droughts, floods and onset of the rainy season, negatively impacting agriculture.
  - b. Increased crop failure and reduced water availability for livestock, leading to increased competition and conflict over water resources between pastoral and farming communities.
  - c. Reduced water tables in boreholes, increased competition for water between communities, people and livestock.
  - d. Reduced water quality in ponds due to stagnation.
5. Floods leading to loss of grazing areas and access to water for pastoralists.

The mean values of intermediate scenario (RCP 4.5), and the worst-case scenario (RCP 8.5) for key climate variables over Aweil projected from current levels to 2090 are:

Sl.	Climate Variable	RCP 4.5 (Intermediate case scenario)	RCP 8.5 (Worst-case scenario)
1.	Average temperature increase.	1.5	3.5
2.	Cumulative annual precipitation increase	73mm/yr (7%)	176mm/yr (17%)
3.	Days of extreme heat.	13	36
4.	Days of extreme precipitation	1	3

Summary of project climate change for Aweil. Source: Colin Quinn et al., "South Sudan Climate Vulnerability Profile."

Any advantages from the projected increase in precipitation will be wiped away by the increases expected in temperatures. Warming of over a degree Celsius is equivalent to 10-20% decrease in rainfall for crops<sup>[17]</sup><sup>17</sup>, and, on average, reduce yields of wheat by 6.0%, rice by 3.2%, maize by 7.4%, and soybean by 3.1%<sup>[18]</sup><sup>18</sup>. An analysis of the CMIP5 model ensemble projections over Aweil using an updated dataset (the same dataset used by the IPCC and by Quinn, above) was done for Aweil. Our results for variations of precipitation and minimum temperature on a seasonal basis are presented below (details in Annex 13 section 2). These are significant because a large seasonal variation in rainfall is projected, coupled with a steady increase in minimum temperature.

Both the intermediate (RCP4.5) and the worst case scenario (RCP 8.5) show similar trends, with the variability projected in the worst case scenario being consistently higher. This increasing variability in rainfall, coupled with significant increases in temperatures can have devastating effect on agriculture and food security in the future. Farmers will have to cope with unseasonal and delayed rains leading to poor germination or crop damage. Pastoral groups will be faced with altered seasonal conditions of traditional rangelands and will probably need to expand grazing areas or increase migrations.

The chronic food insecurity in this region is therefore likely to increase unless the communities are able to adapt to these conditions. As yields and productivity from farms and livestock decline, the dependence of communities on natural resources as part of their coping strategies is likely to increase. This will trigger further environmental degradation and disruption of ecosystem services which provide long term resilience to climate change impacts.

The need for building resilience to climate change impacts among the agro-pastoral communities is therefore not only necessary but also urgent. While the project sites face a high level of food insecurity, they also possess a very high potential productivity (Annex 13 section 3). Interventions in climate change adaptation and resilience building have a very real potential to not only address food insecurity but also to increase rural productivity and prosperity in this region of South Sudan.

#### Technical and operational constraints on agricultural extension

Extension services in South Sudan lack technical capacity and resources to effectively support farming and pastoral communities in climate change adaptation. Local level institutional mechanisms and arrangements are weak, preventing necessary coordination, planning and implementation of program and projects for climate change adaptation.[19]<sup>19</sup> The 2011 agriculture and livestock extension policy[20]<sup>20</sup> listed constraints on availability of qualified and trained extension staff, lack of training and transport facilities, poor engagement with private sector and markets, poor technical backup and low salaries of extension staff as major hurdles. A more recent analysis showed that many of these challenges persist and that producers, particularly small holders, face constraints in access to inputs and seeds, post-harvest and storage technologies and to financial services, which ought to be part of the extension package[21]<sup>21</sup>. Training and equipping community-based extension services and community animal health workers[22]<sup>22</sup> requires private-public linkages and institutional capacity enhancement. These decentralized systems, which include farmer field school and progressive farmer/pastoralist led demonstrations, can help bypass the high costs and difficulty of accessing extension services and conventional delivery channels such as radio or mobile phones. However, these too have their challenges in terms of cost, elite capture and sustained institutional support and a supportive policy

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environment.[23]<sup>23</sup>. Extension services are also constrained by the lack of information and training to use available climate information products and services.

#### Weak and underdeveloped private sector and markets in agriculture

Years of insecurity in South Sudan has led to disruption of value chains and suppressed markets in most regions. This has directly affected the private sector engagement in crucial areas of agriculture including agricultural inputs, procurement, post-harvest technologies and equipment, agricultural extension such as veterinary services as well as financial services. The private sector's involvement in agriculture is severely limited which has direct impacts on climate resilience of farmers and pastoral groups. For example, the availability of agricultural inputs is severely constrained. This includes drought and pest resistant varieties of seeds, disease resistant and heat tolerant livestock, supply and servicing of irrigation equipment and of storage and post-harvest equipment. Farmers and pastoral groups currently rely on limited channels for sales of produce and livestock which limits their access to financial resources.

The root and underlying causes have led to communities pursuing inappropriate, maladaptive, environmentally destructive coping strategies. These include unsustainable harvest of timber, fuel wood, charcoal production and sand mining from riverbeds which has led to extensive environmental degradation including soil erosion, loss of fertility and has disrupted ecosystem services and goods. Limited irrigation and poor moisture management, poor fertility management, use of poor quality and even pest infested seeds and excessive tillage especially where machinery is available are common agricultural practices of both women and men farmers. This further degrades soils, creating a downward spiral of decreasing productivity, expansion of croplands into scrub and forest and degradation of forests and pastures. Climate change related variability in rainfall, increased frequency and duration of extreme weather events and increased temperature combined with maladaptive approaches have led to widespread loss of livelihoods and food insecurity.

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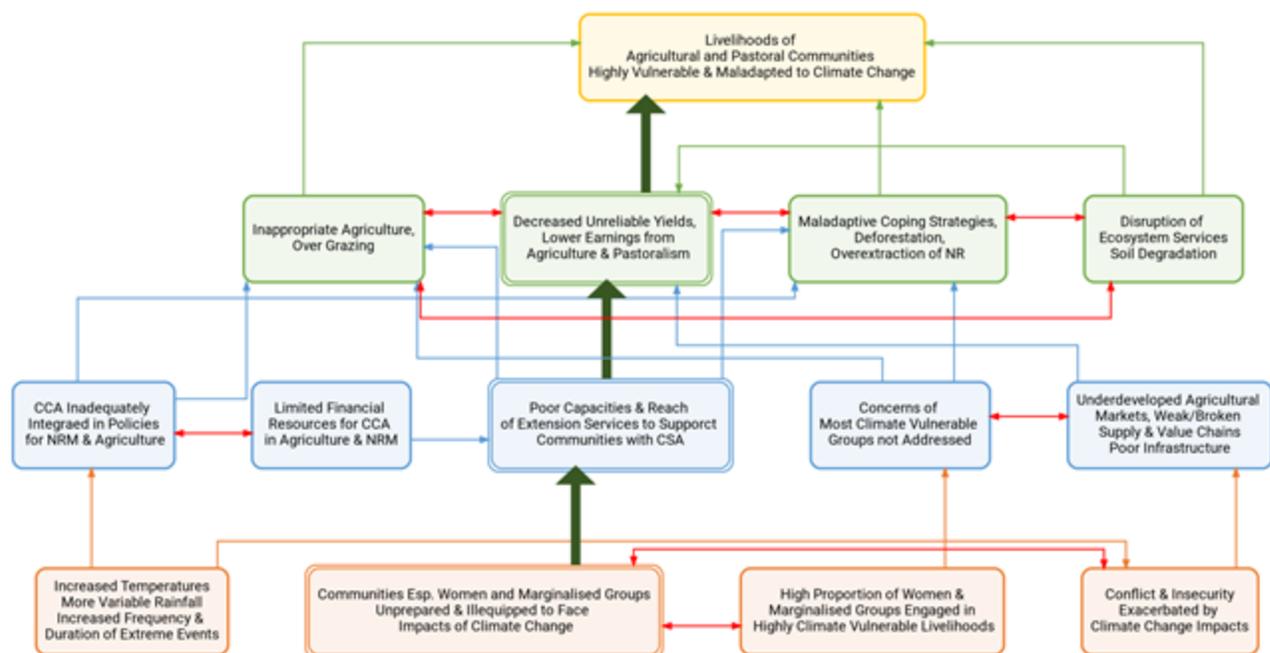


Figure 1. Root causes, barriers and the adaptation problem in South Sudan.

The present situation perpetuates and reinforces climate vulnerabilities. The highly climate sensitive nature of livelihoods will lead to declining returns and increased uncertainty of returns from agriculture and livestock. Poor representation of vulnerable groups combined with conflict and insecurity will perpetuate food insecurity among the most vulnerable. Poor integration of CCA in national and regional policies coupled with weak institutional capacities and lack of funding for CCA will force communities to continue maladaptive strategies and unsustainable extraction of natural resources to cope. Conflict and insecurity will constrain and contract agricultural markets and value chains, further decreasing the viability of agriculture. As larger areas degrade due to unsuitable agriculture and over extraction of natural resources, yields from farm and range lands will decline further and conflict over resources will increase as communities are forced to expand and move their farms, pastures and migratory patterns to compensate for poor productivity and yields from traditional areas.

### Theory of Change

The theory of change proposed for the project will be revised and updated as the project evolves, in response to the inherently fluid ground realities in South Sudan. These are both in terms of climate change related impacts, as well as the changing security environment which has steadily been improving and allowing greater participation of the private sector, thereby creating new opportunities for incomes from agricultural produce and livestock. The project will address the barriers by integrating climate change adaptation into policies both for natural resources management as well as for industry. It will target and address concerns of the most vulnerable groups while providing innovative and sustainable mechanisms to finance adoption of climate change mitigation and adaptation measures among farming and pastoral communities and local institutions. This includes

revival of agricultural supply and value chains and support for entrepreneurs among these communities who wish to engage in diversifying income streams through agro-processing and value addition to local produce. Finally, the project will invest substantively to enhance capacities of local institutions, particularly agricultural extension and veterinary services, so they are technically and logistically equipped to support climate smart agricultural interventions among these communities on a sustained basis.

One of the key strategies of the project design is the use of watershed approaches. This strategy recognizes that functioning ecosystems are integral to livelihood security.<sup>[24]<sup>24</sup></sup> This is one of the bases of the millennium ecosystem services framework (MA)<sup>[25]<sup>25</sup></sup> which replaces the concept of carrying capacity with a broader and more comprehensive understanding of how ecosystems work. This strategy dictates that interventions are integrated and synergies between the activities and their impacts are maximized. The project will focus its interventions within hydrologic boundaries of selected catchments. This includes the strengthening and creation of local institutions to manage and sustain these activities past the project period. The watershed approach will facilitate emphasis on integrated approaches in the conservation and effective use of soil and water. Watershed restoration is recognized as an effective strategy for disaster risk reduction through building resilience of communities against climate change and eventualities such as the slow onset of droughts. The project takes this further by strengthening both the practices and interactions between producers, entrepreneurs and traders who are part of the agricultural supply and value chains.

## Problem Analysis

### Critical Development Challenge

There is an urgent need to build resilience among agricultural and pastoral communities in South Sudan to present and projected impacts of climate change on agriculture and natural resources. Climate change presently threatens livelihoods and food security across the country (figure 2).

### Root Causes

The root causes of the present crisis are the impact of climate change wherein increasing variability in rainfall, increasing temperatures and frequent floods further exacerbate food insecurity and environmental degradation. Livelihoods of 95% of communities in South Sudan and its economy are dependent on climate sensitive natural resources and agriculture which have been disrupted by years of conflict and insecurity. These livelihoods can only be rebuilt and sustained if communities are able to adapt to climate change by adopting locally relevant CSA techniques and technologies. Long periods of conflict and insecurity have also severed market linkages and broken value chains in agriculture, leaving communities isolated and without access to markets and resources to source inputs or sell produce. Communities in NBG traditionally have unequal gender relations and a high population of vulnerable groups including IDP, PWD and unemployed youth. Thus, a large section of society is highly vulnerable to climate change but without access to means for mitigation or adaptation to its

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impacts. Political institutions remain weak and traditional authorities dominate governance at the rural level. These often do not provide adequate representation to the vulnerable groups.

#### Underlying Causes

Climate change is not adequately addressed in agricultural policy and plans. Allocation of the limited financial resources of the government to agricultural extension, development or natural resource management are meager. This severely constrains the reach of government line agencies and institutions leading to poor on-ground extension and development support to communities. The large-scale re-organization of the administrative structures combined with years of conflict have led to a political vacuum and hampered the development and the role of non-government agencies and community-based organizations. The conflict has also led to the breakdown of existing infrastructure. Facilities and basic amenities are lacking in rural areas and are severely limited in larger towns. There are no facilities for markets, storage or processing of agricultural produce or livestock. Agro-industries have been unable to establish in this environment. Research institutions in South Sudan have also been badly affected by the insecurity and conflict. Applied research, especially in rural areas, has been scaled down and data that is needed to develop strategies for climate smart agriculture or natural resource management is lacking[26]<sup>26</sup>. There are severe constraints on institutional and community capacities which hinder development, transfer and adoption of adaptation technologies in agriculture. The private sector in rural areas is underdeveloped. Traditional livestock markets and routes have closed down due to insecurity and value chains and market links for agricultural produce remain fragile.

#### Immediate causes

The root and underlying causes have led to communities pursuing inappropriate, maladaptive and environmentally destructive coping strategies. These include unsustainable harvest of timber, fuel wood, charcoal production and sand mining from riverbeds. Consequent environmental degradation including that of forests and rangelands, of soils through depletion of nutrients, moisture and its erosion have led to loss of fertility and has disrupted ecosystem services and goods. Limited irrigation and poor moisture management, poor fertility management, use of poor quality and even pest infested seeds and excessive tillage especially where machinery is available are common agricultural practices being followed by both women and men farmers[27]<sup>27</sup>. This has created a downward spiral of decreasing productivity and degradation of forests and pastures. Climate change related variability in rainfall, increased frequency and duration of extreme weather events and increased temperature combined with maladaptive approaches have led to widespread loss of livelihoods and food insecurity.

#### Solution Pathway

The present situation perpetuates and reinforces climate vulnerabilities. The climate sensitive nature of livelihoods will lead to declining returns and increased uncertainty of returns from agriculture and livestock. Poor representation of vulnerable groups combined with conflict and insecurity will perpetuate food insecurity among the most vulnerable. Poor integration of CCA in national and regional policies coupled with weak institutional capacities and lack of funding for CCA will force

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communities to continue maladaptive strategies and unsustainable extraction of natural resources to cope. Conflict and insecurity will constrain and contract agricultural markets and disrupt value chains, further decreasing the economic viability of agriculture. As larger areas degrade due to unsuitable agriculture and over extraction of natural resources, farm and range lands will degrade further and conflict over resources will increase as communities are forced to expand and move their farms, pastures and migratory patterns to compensate for poor productivity and yields from traditional areas. Earlier projects have shown that substantial progress can be made by addressing the challenges in the problem tree.

UNDP will provide oversight to World Vision South Sudan (WVSS), the implementation partner selected for the project. WVSS has a field office in Aweil where there is trained staff with expertise in climate smart agriculture and conservation agriculture, climate change adaptation and disaster risk reduction, participatory watershed and landscape management with emphasis on surface water as well as in livestock development and fisheries. WVSS also has experience in market and value chain development.

Key advantages that UNDP has in providing oversight and support to the IP are: 1. UNDP has a field office in Aweil, the center of the proposed sites. Here it is implementing programs to boost the local economy, resolve and manage conflicts and to address challenges of gender-based violence and inequity. UNDP has been building capacities of community-based organizations in Aweil which includes social and economic initiatives and training in M&E and reporting. The economic initiatives include activities with women entrepreneurs in agro-processing. The field office provides UNDP a huge advantage in terms of logistical support and necessary infrastructure for providing close oversight needed in the proposed project. Also, the contacts established with local government agencies, CBOs and NGOs in the region, will facilitate a head start in project implementation for the IP.

2. UNDP's projects in nearby countries with similar ecological/environmental and climate challenges facilitates access to technical expertise and knowledge. UNDP's partnerships include FAO and WFP, both of whom are actively involved in agricultural development and addressing food insecurity in the NBG state. Other relevant partners include ICRAF who have successfully demonstrated the viability of assisted restoration and afforestation integrated with conservation agriculture.

3. UNDPs work with the GoSS, over the years, puts it in a unique position for policy advocacy, particularly with the ministries of Agriculture and the Environment. This is important considering the need for mainstreaming CCA and gender in South Sudan's policies and for framing policies for community-based forest and natural resources management.

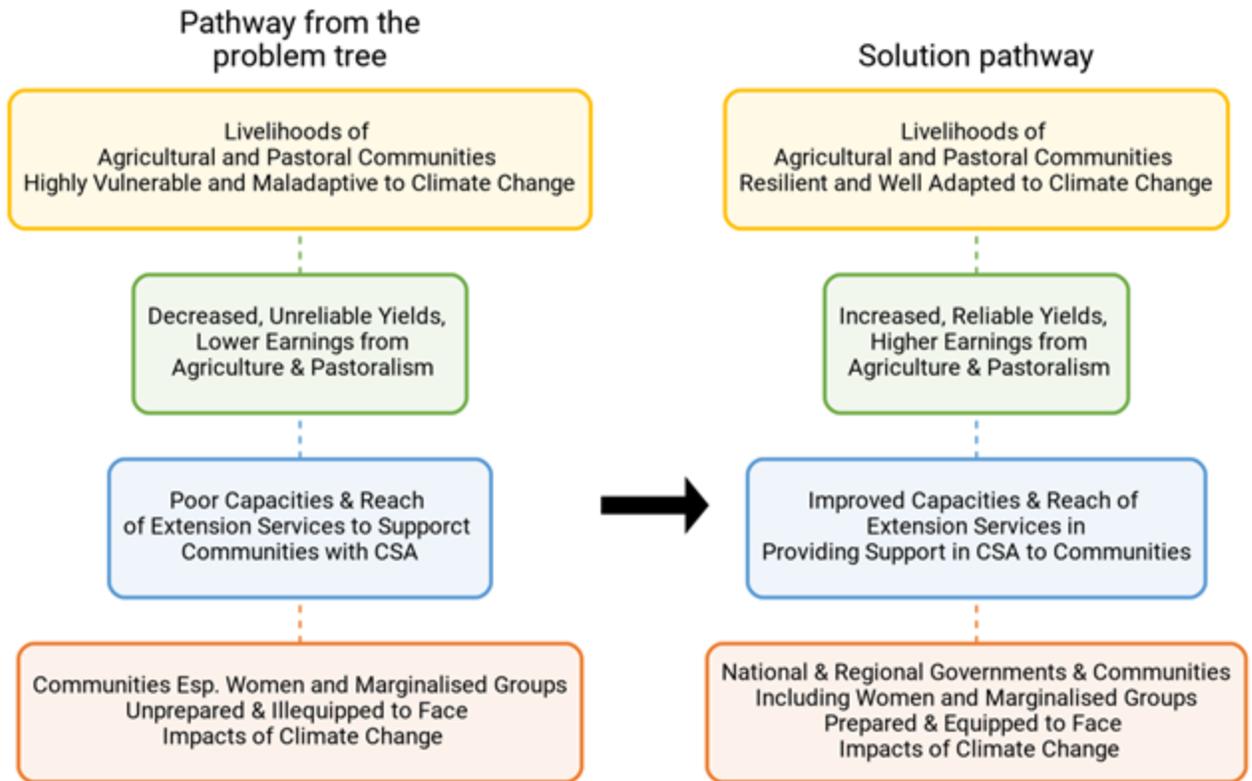


Figure 3: Proposed solution pathway

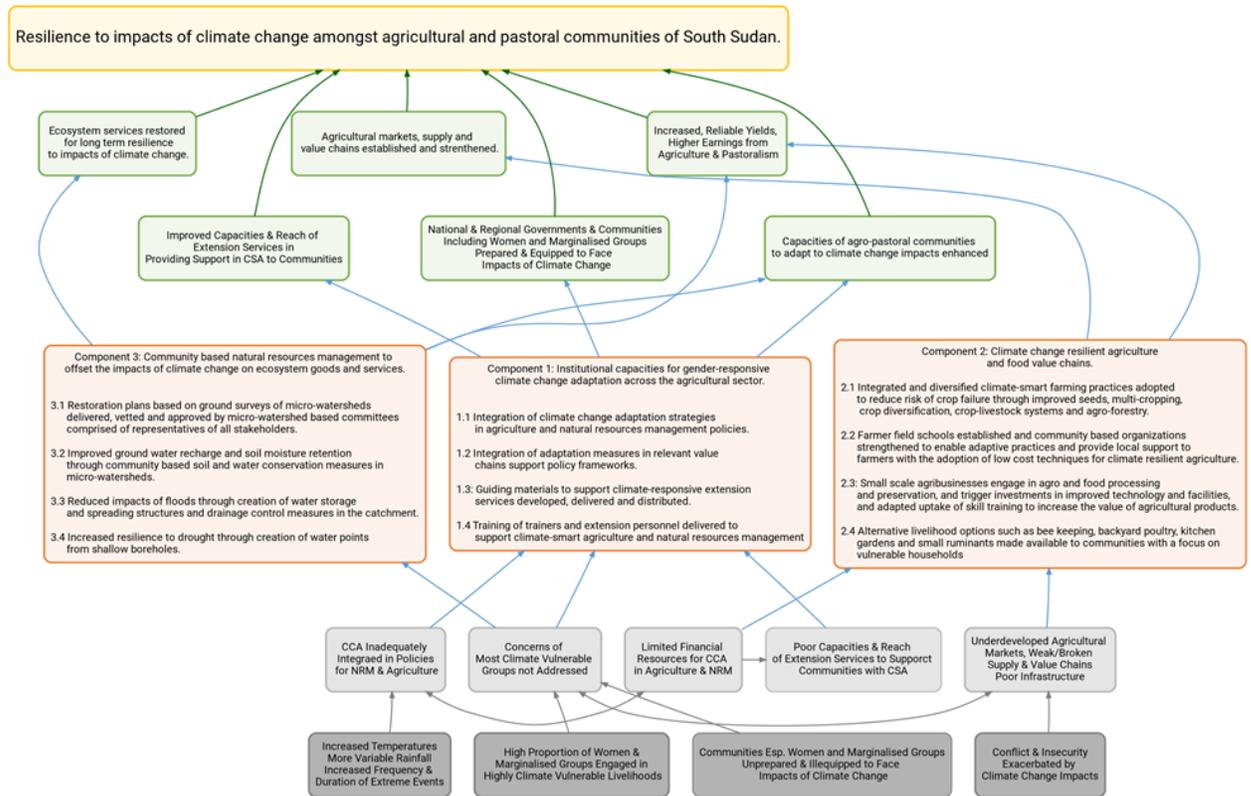


Figure 2. Theory of Change.

## 2) Baseline scenario and any associated baseline projects

The Government of South Sudan in its National Adaptation Programmes of Action and the Intended Nationally Determined Contributions under the UNFCCC has committed to address climate change through prioritizing climate change resilience and disaster risk reduction in its development policies. These focus on the critical sectors of agriculture, environment and forestry and water resources management. The government, with support from international and regional agencies, has launched a number of projects and programs. A summary of past projects that address both climatic and non-climatic drivers of food insecurity and livelihood vulnerability on which we build and derive valuable lessons in climate change resilience and adaptation is presented in the Feasibility Study (Annex 13 Section III).

Concurrent baseline projects which address non-climatic drivers, and of partnerships which address impacts of climate change on livelihoods and food security and which will contribute to the proposed LDCF project are listed in the table below with a summary of how these baseline projects will complement the activities under the LDCF project.

There are important lessons that were learned from the GIZ-project 'Adapting agricultural production methods to climate change and stabilizing livelihoods in Western Bahr el Ghazal, South Sudan?', which

concluded in 2018. The project used field farmer schools to enable the local population to employ various adaptation measures, particularly in relation to staple crops and vegetables. Additionally, the project strengthened the capacities of local government, by involving the agricultural extension services. The GIZ project overcame inherent challenges in capacities of both communities as well as extension agencies to improve their resilience to climate change impacts by stabilising the livelihoods of selected households through efficient use of available natural resources, CCA and sustainable agricultural production measures. The setting up of farmer field schools as a route for hands on training on sustainable land management and cultivation of staple foods and vegetables was at the centre of the strategy. The project additionally strengthened structures and capacities within the state ministry of Agriculture, Forestry, Cooperatives and Rural Development, focusing on training agricultural extension services. This ensured that project interventions were sustained and institutional structures for their support were in place. The project, since 2016, implemented the activities of the Regional Transitional Aid Programme for Food and Nutritional Security in Sub-Saharan Africa, which focuses on improving food security among smallholder households rural populations, especially women, in the fragile states of Burundi, the Democratic Republic of the Congo and South Sudan. The project has resulted in optimised and diversified agricultural production practices that are adapted to climate change among its target groups, leading to more efficient utilisation of food and prevention of malnutrition.

Key elements of the GIZ project that have been adopted and are part of the LDCF project design include:

1. Replication of the farmer field school approach as a mechanism for not only hands-on training, but also as the route for distribution of materials and assets (see below) for climate smart agriculture and best practices in livestock raising and veterinary surveillance and services.
2. Specific targeting of food insecure smallholders, specifically women through a careful and exhaustive vulnerability assessment and consultations with community leaders and representatives.
3. Strengthening institutions both at the community level to ensure sustained on-ground action, circulation and sharing of assets created by the project and for financial sustainability and viability.
4. Strengthening of government agencies, particularly extension services to sustain technical support to the communities and to replicate its strategies and activities to other sites.

ID	Title or Description of Project or Partnership	Implementer	Funder	Funding (US\$)	Period	Linkage to the LDCF Project
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1.	Emergency Livelihood Response Programme	FAO	USA	25,000,000	2020-2021	<p>The ELRP offers a rich set of lessons and experiences in providing agricultural extension and veterinary services in South Sudan. 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, expertise while identifying, and addressing gaps in interventions relating to climate change adaptation in agriculture and NRM. The LDCF project will collaborate with implementing partners to extend the project's activities to include: i) a framework to identify communities and specific climate related challenges that affect agricultural production and livelihoods among them; ii) coherent strategies to address these issues through CSA - adding to the existing initiatives of the ELRP; iii) adopting integrated watershed approaches that link catchment restoration with fisheries and farming through disaster mitigation measures such as improved drainage, flood defenses and combine water harvesting and spreading with planting multiuse species to build landscape level resilience. Finally iv) the LDCF project will provide a platform to share and build upon knowledge among communities and institutions, that integrates on-farm and household based climate resilience with restoration and protection of watersheds for long term resilience.</p>
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2.	Strengthening the Capacity of Government and Communities in South Sudan to Adapt to Climate Change	UNDP	GEF-LDCF	9,032,420	2020-2025	<p>There is an opportunity for both projects to gain from lessons learned and adaptation strategies developed in their respective sites. Output 1.1. from the SCGC project which seeks to develop land use maps and vulnerability, demographics and land use projections could provide valuable lessons for output 3.1 of the WACRAL project which will develop restoration plans based on ground surveys of micro-watersheds. Experiences from the ecosystem based approaches (output 2.2). livelihood diversification (output 2.3) and climate smart interventions (output 2.5) of the SCGC are, similarly, relevant across the outputs in component 3, outputs 2.4 and output 2.1 respectively of the WACRAL project. The proposed LDCF project could also gain through the improved dissemination of localised climate information and seasonal weather forecasts proposed under the SCGC.</p>
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3.	South Sudan Safety Net Project (SSSNP)	UNOPS	World Bank	40,000,000	2020-2022	The first and largest component of the project (US\$ 22.8 million) is particularly relevant to the proposed LDCF project, which under component 3 proposes to undertake construction of rural infrastructure for climate resilience. The proposed work will depend on local labor and materials. The LDCF project will reach out to the SSSNP during project implementation to see if funding can be secured under its community-based public works activities.
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4.	South Sudan Livelihoods Resilience Programme (SSLRP)	IFAD	IFAD and AfDB	17,900,000	2021-	<p>The SSLRP project targets the same livelihoods and communities that the proposed LDCF project does. Component 2, 3 and 4 of the project also overlap significantly with the work proposed under the WACRAL proposal. This specifically includes outputs under component 2 which also focus on climate smart agriculture and climate resilient livelihoods, including extensive capacity building and component 3 whose outputs include community based development planning for landscape restoration. The two projects will ensure a continuous sharing of information and lessons learned which will facilitate the scaling up of successful practices in the LDCF protect and mainstreaming of climate impacts during the implementation of IFAD activities.</p>
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5.	Value Addition and Trade Development project (AMVATP)	FAO	AfDB+FAO	20,810,000	2021-2025	The AMVATP project has overlaps with outputs under component 2 of the proposed LDCF project. This includes activities that introduce and build capacities for climate smart agriculture under outputs 2.1 and 2.2 and activities under output 2.3 that seek to support small scale agri-businesses and enterprises. Mechanisms for cross learning and experience sharing between the two projects will be put in place through the knowledge management activities under output 1.1.
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### 3) Proposed alternative scenario with a brief description of expected outcomes and components of the project

In order to address these challenges, the project will operate simultaneously at both the national and the local level. At the national level the project will identify gaps and hold a national dialogue on mainstreaming gender responsive climate change adaptation and mitigation in policies and programs in agriculture and NRM. Frameworks needed to support and re-build key value chains in the agriculture and agro-processing will be identified and strengthened.

Gaps in the capacities of institutions responsible for and engaged in on-ground extension and development will be identified and key agencies will be provided training, financial and material support, equipping them to intervene and helping communities build resilience and adaptive capacities to address climate change related challenges. The project will also support and strengthen existing CBOs and form new ones as conduits for its activities, thereby enhancing institutional networks and social capital within communities.

This strategy builds on existing knowledge and practices of local communities in the proposed sites. The PPG process included on-ground evaluation of prevalent practices in agriculture as well as coping strategies adopted by communities to address major climate shocks. The surveys revealed a high reliance on varieties of crops and livestock that are vulnerable to climate extremes and pests, use of inefficient and labor intensive methods of cultivation - largely due to limited access to technology, destructive coping strategies and potentially unsustainable harvesting of natural resources to supplement incomes.

High external input agriculture is presently the focus of extension agencies. However, this approach disregards the low availability and poor access of communities to agricultural inputs and the fact that

most agriculture is rainfed and irrigated agriculture is not an option available to the bulk of the farming community. The proposed strategy for interventions in agriculture and NRM will therefore be based on a careful assessment of site conditions during the inception phase. This includes an assessment of productivity potential (soil quality, water availability and prevalent practices). This contextual understanding will be coupled with approaches that seek to enhance natural productivity and resilience, for example conservation agriculture and assisted natural regeneration as opposed to high input agriculture. The inception phase will also build on the initial capacity assessment of on-ground staff, which to provide sustained extension support to communities in appropriate technologies suited to the local context.

Project strategies will focus on the women and vulnerable groups within local communities who are the most vulnerable to the impacts of climate change. Building on prior projects, best practices will be adapted and contextualized to local conditions. A comprehensive field-based assessment during the inception phase of the project will precede project implementation. Vulnerable households and representatives of communities will be mobilized to ensure representation of women and vulnerable groups. Groups and committees will be formed to plan and participate in project implementation.

The primary government agency at Aweil who will coordinate project activities with their payam counterparts is the State Ministry of Agriculture, Environment and Forestry (SMoAEF). The SMOAEF long with the field PMU at Aweil and the payam officers at Aroyo and Akuem will identify and invite local institutions and CBOs to participate in the watershed committee meetings. This will be in addition to the grassroots agencies who are involved in the project activities and identified on the basis of comprehensive socioeconomic surveys and vulnerability assessments (Pg. 33 ProDoc, Activity 1.1.2-1.1.4).

All groups in the watershed committee will need to have a physical presence in the respective watersheds and a direct participation in watershed restoration and related project activities. The watershed committee is meant to be an inclusive platform, however its core group will comprise of relevant agency representatives as identified by the local government and the field PMU.

Social and environmental safeguards listed in the SESP and ESMF will be fine-tuned based on information from ground surveyed undertaken during project inception. These surveys will merge participatory, community-based planning and data collection with geo-spatial technologies and mobile ICT for increased cost effectiveness and speed. The surveys will provide site specific details and continuous monitoring of i) potential productivity of gardens, crop fields and pastureland; ii) status and restoration strategies for natural resources (rangelands and forests); iii) existing use and income generation potential from timber and NTFP; iv) availability and status of fuelwood and water supplies for human and livestock and v) prevalent income and livelihood diversification strategies and potential for their enhancement. All assessments undertaken by the project will ensure data is gender disaggregated where feasible. Team members will include women who seek out and ensure representation of women among respondents and vulnerable groups.

These surveys will help design a comprehensive strategy for mobilization focusing on gender sensitization, representation of vulnerable groups in CBOs and decision-making bodies and allocation of resources to address their specific needs. Mobilization activities will target both men and women,

including traditional leaders and staff from development and government agencies. Awareness generation and mobilization within communities will seek to ensure representation of women and vulnerable groups in committees and associations tasked with project implementation. Participatory approaches will be followed for implementing project activities that ensure meaningful contribution by the community and build upon and strengthen existing social institutions.

Technical and material support will be provided to these groups by extension services comprised of government and non-government agencies. Capacities of these agencies, will in turn, be built by the project and linkages with private sector suppliers and service providers will be established. Locally relevant livelihood and income diversification options and adaptation measures will be offered to communities for sustained agricultural and livestock productivity.

The project will adopt a hands-on, demonstration-based approach for transfer of climate smart technologies which have proven to be successful[28]<sup>28</sup>. Farmer field schools and demonstration plots will be set up in selected villages and cattle camps. These will be hosted by progressive farmers and pastoralists who will be identified and facilitated to play the role of mentors. Women farmers will specifically be asked to lead demonstrations of activities preferred and identified by women during the stakeholder engagements. These include crop and vegetable farming and income diversification through dairy cows, small ruminants, agro-processing and harvest and processing of NTFP such as gum and honey.

The project will help formulate norms for resource sharing and management between farming and pastoral communities and will strengthen and create multi-stakeholder platforms and mechanisms for addressing disputes and reducing conflict which threatens to derail the development efforts in the region. The increased social capital and institutional capacities among both CBO, government and non-government stakeholders and the private sector is expected to sustain and strengthen these mechanisms.

Strengthening market linkages and value chains will be a key focus of project. Post-harvest losses in South Sudan are reported to be as high as 40% due to lack of storage and other factors. This is an area where the private sector can play a key role. Project activities will include enhancement and creation of relevant low-cost infrastructure for storage, agro-processing and agri-enterprises, working both with the producers and traders in major markets.

This project will collaborate closely with the ongoing humanitarian and development efforts of the FAO and WFP. There are a number of areas where these efforts overlap and complement those proposed under WACRAL. Data from assessments, monitoring and evaluations will be made available to the partners agencies along with information on survey methods, formats and data entry systems to enable their re-use. The core activities WACRAL will strengthen the food security of communities in this highly vulnerable region of South Sudan while enhancing their capacities and those of government and non-government staff to further extend its impact.

Three closely integrated components will build resilience to climate change risks among 75,000 people from agricultural and pastoral communities and bring 15,000 ha of land under improved practices. The

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latter includes three micro-watersheds or catchments across 15,963ha, covering six payams and 12 bomas in the Aweil East county (one micro-watershed) and Aweil Centre county (two micro-watersheds) of Northern Bahr el Gazhal state. Vegetable farmers within the jurisdictions of Aweil East and Aweil Centre counties in the Wardit catchment will additionally be targeted. This is one of the most food-insecure regions of South Sudan which is highly vulnerable to climate change impacts. The sites were selected on the basis of extensive consultation and background research on social and environmental conditions and vulnerability as well as criteria which would increase the chances for a successful intervention. The analysis of the biophysical characteristics, available socioeconomic information and key focus of activities for each of the sites is presented in the Feasibility Study (Annex 13). Site maps with coordinates of each boma are provided in Annex 3. The table below lists the micro-watersheds and estimated beneficiaries for improved practices among agro-pastoral communities. Administrative jurisdictions in the Wardit catchment, in particular, are unclear and contested. About 100ha of farm areas among 140 vegetable farmers are targeted in this site.

Micro-watershed	County	Payam	Boma	Area under watershed (ha)	Targeted beneficiaries		
					Male	Female	Total
Aroyo	Aweil Centre	Aroyo	Aroyo	878	985	959	1,944
Aroyo	Aweil Centre	Aroyo	Kur-chok	557	824	817	1,641
Chel	Aweil Centre	Chel South	Cham Anguei	4,852	1,301	1,336	2,637
Chel	Aweil Centre	Chel South	Luang Aher	4,165	1,176	1,196	2,371
				10,452	4,285	4,307	8,593
Akuem	Aweil East	Baach	Pariak	429	10,096	10,960	21,056
Akuem	Aweil East	Moyom-wel	Tit-chok Mareeng	204	2,224	2,516	4,740
Akuem	Aweil East	Wunlang	Gaal	1,107	4,857	5,458	10,315
Akuem	Aweil East	Wunlang	Makuei-Agep	580	5,110	5,699	10,808
Akuem	Aweil East	Wunlang	Tong-Goi	1,353	4,916	5,399	10,315
Akuem	Aweil East	Yargot	Hal-bul	1,837	4,181	4,852	9,033
				5,510	31,384	34,884	66,267

Wardit	Administrative boundaries unclear 2 bomas.	100	60	80	140
Total		15,962	35,729	39,271	75,000

A summary and list of each of the components and expected outcomes along with outputs and activities are presented below. Details of each of the activities are presented in section IV of the ProDoc. Annex

Component 1: Institutional capacities for gender-responsive climate change adaptation across the agricultural sector.

Outcome 1: Strategies and capacities to implement community based and gender-sensitive climate change adaptation for agriculture and food value chains across South Sudan.

This component will mainstream climate change adaptation strategies at the policy level in South Sudan. It will target policies for agriculture, natural resource and forest management and agro-industry at the national and state level. It will provide a consistent, enabling framework for climate change resilience building in the development and outreach activities of extension and development agencies. Requisite expertise and resources will be provided to implement measures, train communities and create local level capacities in climate change adaptation. It will support replication and scaling up of successful strategies by facilitating cross learning and knowledge between the entire range of stakeholders from local community representatives to sub-national, national, regional and international agencies.

The inception phase of the project will involve a comprehensive, field based and participatory planning exercise which involves stakeholders from the government, development agencies and communities. This will lead to the mainstreaming CCA in existing policies related to natural resources and agriculture. Market value chains vulnerable to climate change impacts, and associated support policies and frameworks will be identified and specific measures and on-ground actions to strengthen and build their resilience to climate change will be instituted. A comprehensive assessment of extension services will be conducted with specific focus on the proposed project sites, based on which extension packages will be developed that include locally relevant awareness and training modules as well as supplies to implement climate smart agriculture and natural resource management measures. Institutional capacities of extension personnel from government and non-government agencies for supporting CCA will thereby be enhanced.

Output 1.1: Integration of climate change adaptation strategies in agriculture and natural resources management policies. (Implementing Partner: World Vision)

? Activity 1.1.1: National dialogue on gender responsive climate mainstreaming in key policies and plans for agriculture and natural resource management at all levels of government.

? Activity 1.1.2: Building baselines of socioeconomic, ecological, edaphic and topographical characteristics of the project sites to inform site prioritization.

? Activity 1.1.3: Conducting field surveys on productivity potential and developing site specific intervention strategies and plans for climate smart agricultural interventions and catchment restoration with communities.

? Activity 1.1.4: Conducting a field-based assessment of income and livelihood diversification options.

? Activity 1.1.5: Knowledge sharing at global, regional, national, county and community levels.

Output 1.2 Integration of adaptation measures in relevant value chains support policy frameworks. (Implementing Partner: UNIDO)

? Activity 1.2.1: Extending linkages of the project with private sector financing and public supported investments to agro and food value chains and climate adaptation initiatives.

? Activity 1.2.2: Conducting analyses of food processing and agribusiness value chain partners? capacities and initiatives for financing to climate resilient infrastructure.

? Activity 1.2.3: Mobilizing value chain stakeholder institutions, producers including cooperatives and associations, non-state agencies engaged in food processing initiatives.

Output 1.3: Guiding materials to support climate-responsive extension services developed, delivered and distributed. (Implementing Partner: World Vision)

? Activity 1.3.1: Conducting site specific capacity assessment of line departments and extension services at county, payam and boma levels.

? Activity 1.3.2: Developing a comprehensive social inclusion action plan and strategy that integrates gender and equity concerns into extension services and mobilization for CCA planning.

? Activity 1.3.3: Developing gender-responsive site-specific extension and advisory packages including inputs, implements and training materials.

? Activity 1.3.4: Disseminating training materials and modules.

Output 1.4 Training of trainers and extension personnel delivered to support climate-smart agriculture and natural resources management. (Implementing Partner: World Vision)

? Activity 1.4.1: Identifying and training extension staff for climate smart agriculture among crop and vegetable farmers.

? Activity 1.4.2: Training extension and line departments, NGOs and community-based animal-health workers.

? Activity 1.4.3: Training extension and line departments, NGOs and community-based extension and animal-health workers.

? Activity 1.4.4: Training extension and line departments, NGOs and community-based extension and animal health workers.

? Activity 1.4.5: Training extension and line departments, NGOs and community-based extension and animal-health workers.

Component 2: Climate change resilient agriculture and food value chains.

Outcome 2: Best practices in climate change resilient agriculture and food value chains adopted by rural communities. The second component of the project will result in adoption of climate smart agricultural practices which benefit about 25,000 persons (11,910 male, 13,091 female). At a broader scale, this component will facilitate the update of a slew of climate adaptation techniques and technologies by local communities that are tested and demonstrated in local conditions and according to local seasonal calendars. These techniques and technologies will be efficient, effective and will build on traditional knowledge and practices for widespread acceptance. They will be implemented using a participatory framework which enhances local institutional capacities and thereby ensure sustainability, replication and scaling up. The component will also introduce relevant post-harvest and storage technologies and establish linkages between producers and the private sector leading to lower losses, higher remuneration and diversified incomes that are resilient to climate change.

Community based organizations - farmer and pastoral groups, will be co-opted or created with a focus on active participation and representation of women and vulnerable sections. Youth from communities will be encouraged to participate. These CBOs will be central to the planning, implementing and monitoring of climate smart agricultural activities. These activities will include community level interventions such as installation of shallow boreholes as well as interventions on private farmers such as setting up small scale/micro-irrigation. Household and farm-based activities will include provision of high quality and drought resistant varieties of crops, saplings and livestock. The purpose of these activities is to increase both production and productivity in agriculture and livestock/pastoral systems.

Farmers will be provided materials, including implements and agricultural inputs coupled with training in their application and use through farmer field schools. Crop diversification, multi-cropping, crop-livestock and agro-forestry systems will be introduced along with best practices for soil and moisture conservation, farm-based production of compost, nutrient/fertility management and micro-irrigation. Appropriate varieties of dairy cows<sup>1</sup>, small ruminants and poultry will be introduced along with income diversification options as adaptation measures. Post-harvest food processing technologies will be introduced and entrepreneurs and cooperatives supported in accessing local markets by technical support, training and strategic investments.

Linkages between communities and local banks, MFIs and NGOs offering financial services and support to community groups will be established. At least 10 financial service providers (FSP), including commercial banks and affiliated local agents operate in the Aweil area<sup>[29]</sup><sup>29</sup>. The project will invest in supporting relevant FSPs and NGOs through capacity building, financial literacy training and building baseline credit data, use of mobile payment systems.

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Linkages with financial services, markets and traders will be established (activity 2.4.4) to ensure the income streams are reliable and sustained. Baselines will be developed to understand needs for credit and how credit risks will be reduced among farming and pastoral groups through adoption of climate smart/resilient practices.

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. (Implementing Partner: World Vision)

? Activity 2.1.1 Establishing demonstration sites for climate smart agricultural practices.

? Activity 2.1.2 Establishing plant nurseries with women groups and at the SMoAFARFC.

? Activity 2.1.3 Identifying progressive pastoralists and hosting pastoral field schools.

Output 2.2 Farmer field schools established, and community-based organizations strengthened to enable adaptive practices and provide local support to farmers with the adoption of low cost techniques for climate resilient agriculture. (Implementing Partner: World Vision)

? Activity 2.2.1: Identifying and strengthening customary CBOs and mobilizing new user groups to ensure gender responsive and inclusive community-based mechanisms to implement project activities.

? 2.2.2 Conducting seasonal farmer field schools to provide hands on training on practices and use of implements.

? 2.2.3 Conducting seasonal pastoral field schools.

? 2.2.4 Holding seasonal camps in both crop and vegetable farming settlements.

? 2.2.5 Holding seasonal camps in pastoral and agro-pastoral settlements.

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. (Implementing Partner: UNIDO)

? Activity 2.3.1: Conducting analysis and preparing business models focusing on post-harvest and food processing.

? Activity 2.3.2 Promoting post-harvest producer led connectivity and alliances among the stakeholders.

? Activity 2.3.3: Conducting training of trainers on business planning to support food processing value chains among community groups.

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. (World Vision)

- ? Activity 2.4.1 Identifying and developing participatory livelihood diversification plans.
- ? Activity 2.4.2 Holding seasonal camps in both agricultural and pastoral/agro-pastoral settlements for hands on training and material support for agro-processing and value addition for income diversification.
- ? Activity 2.4.3 Facilitating access to credit to agro-pastoral communities and entrepreneurs
- ? Activity 2.4.4 Establishing linkages and facilitate transactions between rural producers and entrepreneurs and shopkeepers in markets for sales of produce.
- ? Activity 2.4.5 Participatory monitoring and assessment of activities and their impacts involving user groups and selected households.

Component 3: Community based natural resources management to offset the impacts of climate change on ecosystem goods and services.

Outcome 3: Communities in micro-watersheds adopt natural resources management and restoration to reduce climate change impacts.

This component will result in the restoration and sustainable management of about 15,000ha under three catchments forming the project sites. This includes 300 ha of farmland, 10,000 ha affected by drought and 5,000ha affected by floods. Communities will be facilitated in establishing a participatory framework for managing these catchments and their resources. The project will leverage modern geospatial technologies to empower communities and local institutions. It will result in the formulation of detailed, spatially explicit, gender-responsive and participatory plans for restoring rangelands and forests. An institutional structure will be set up which provides representation to women and weaker sections and facilitates coordination between different communities, institutions and NGOs operating within a given catchment. An integrated, watershed-based approach will ensure synergy between different interventions within a catchment and will provide a model for community-based land and forest management for the state of Northern Bahr el Ghazal. As this component of the project envisages construction of rural infrastructure, it will be guided by a comprehensive ESIA as mandated in the ESMF. The ESIA shall be designed in the first six months of the project and will address all relevant risks as highlighted in the SESP.

Watershed restoration measures will be implemented through a concerted mobilization of communities to take cost-effective measures using local materials and appropriate designs. These will be guided by geo-spatial analysis of hydrologic features combined with participatory planning. Strategically placed soil and water conservation structures, check-dams, dykes, diversion canals and water spreading structures will be constructed to arrest rapid stream-flow during storms and assist ground water recharge and moisture retention. Water harvesting structures will be coupled with shallow bore wells and low-cost pumps for water points and small-scale irrigation. Extensive agro-forestry measures will be introduced and combined with community-based management measures to rebuild vegetative cover and re-green rangelands while addressing shortages of fuel, fodder and fruit. These activities are expected to reduce impacts of floods and droughts and to restore ecosystem services for long term

climate resilience. All rural infrastructure created by the project will be designed by qualified engineers who will include an environmental impact assessment where needed. Design of all structures, irrespective of size, will provide details of operation and maintenance, including sourcing and costings for materials, labor and replacement of parts where applicable.

Registered CBOs, including federations and associations of farmers and pastorals as well as smaller user groups and self-help groups will be supported to establish financial procedures and practices that sustain O&M costs and investments into livelihood and income generation activities. Key among these will be setting up of a fee structure for those benefiting from the use of water infrastructure, food processing equipment, implements and other rural infrastructure (ponds/checkdams) provided by the project. These groups will receive training on management, book keeping and business practices, in addition to technical training on O&M of their respective assets. A small incentive in the form of matching grants for fees collected will also be provided.

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. (World Vision)

- ? Activity 3.1.1 Mobilizing communities to create gender-equitable micro-watershed committees.
- ? Activity 3.1.2 Developing site specific plans for interventions in the watershed.
- ? Activity 3.1.3 Conducting participatory assessments and evaluations.

Output 3.2 Improved ground water recharge and soil moisture retention through community-based soil and water conservation measures in micro-watersheds. (World Vision)

- ? Activity 3.2.1 Constructing soil and water conservation structures and stabilizing slopes on community lands with contributions of labor and material from communities.
- ? Activity 3.2.2 Planting and seeding appropriate and multi-use species of trees, shrubs and grasses.
- ? Activity 3.2.3 Undertaking on-field soil and water conservation with farmer groups coupled with strengthening of structures through planting multi-use grasses, shrubs and trees.
- ? Activity 3.2.4 Involving communities in maintenance, protection and management of structures and planting efforts on community lands.

Output 3.3 Reduced impacts of floods through creation of water storage and spreading structures and drainage control measures in the catchment. (World Vision)

- ? Activity 3.3.1 Constructing small dykes, diversion canals and water storage ponds and spreading structures on community lands with material and labor contributions from the community.

? Activity 3.3.2 Planting and seeding appropriate and multi-use species of trees, shrubs and grasses to stabilize slopes and sides of structures, arrest erosion and increase infiltration while increasing available biomass.

? Activity 3.3.3: Undertaking construction of drainage channels and ponds on farmer lands with farmer groups coupled with strengthening of structures through planting multi-use grasses, shrubs and trees.

? Activity 3.3.4 Cleaning and maintaining channels, streams, ponds and water spreading structures.

Output 3.4 Increased resilience to drought through creation of water points from shallow boreholes.  
(World Vision)

? Activity 3.4.1 Constructing water points at strategic locations.

? Activity 3.4.2 Operation, maintenance and monitoring of water points.

? Activity 3.4.3 Linking water points with small scale and micro-irrigation for vegetable gardening and life-saving irrigation.

#### 4) Alignment with GEF focal area and/or Impact Program strategies

The strategy is aligned with the broader goal of the GEF-7 Adaptation strategy which is to strengthen resilience and reduce vulnerability to the adverse impacts of climate change in developing countries and support their efforts to enhance adaptive capacity. It is closely aligned with two of the three objectives of the LDCF namely:

CCA-1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation

CCA-2: Mainstream climate change adaptation and resilience for systemic impact

It is further aligned with the Land Degradation Focal Area for GEF-7

LD-1-1: Maintain or improve flow of agro-ecosystem services to sustain food production and livelihoods through Sustainable Land Management (SLM)

The project strategy is based on a series of field visits undertaken during the development of the PIF and PPG phase. It is informed by a thorough analysis of available geo-spatial data and statistics including climate change trends and bio-physical conditions of the sites. The selection of sites for the project involved careful consideration of vulnerability of communities and environmental conditions of the sites and proposed activities are based on a comprehensive review of best practices as well as on-ground conditions that determine the viability of these activities in the local context and the perception of local communities on their relevance. See Annex 13 section I for details.

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

Predicted impact of climate change in South Sudan will seriously undermine the economic recovery and peace building initiatives of the Government. Almost the entire population of South Sudan is reliant on natural resources for subsistence and livelihoods. Agricultural and pastoral communities regularly turn to natural forests and scrub for food and subsistence during the increasingly severe periods of drought and flood. Conflicts between sedentary agricultural communities and migratory and nomadic pastoral communities over access to land and water are common.

In spite of its high potential agricultural productivity, South Sudan is among the most food insecure regions of the world. The project sites are among the most food-insecure regions in South Sudan. Many regions of South Sudan, including the project sites, are facing serious challenges of environmental degradation and desertification. These are exacerbated during periods of food shortage, threatening to disrupt ecosystem function and services on which communities rely. Climate change is a driver for the increasingly alarming rates of environmental degradation and resulting food and social insecurity in this region. Management of these resources is made complicated by the complex overlay of traditional ownership and tenure, nomadic and migratory pastoral livelihoods and unclear governance mechanisms of the government.

Failure to address the barriers is likely to lead to exacerbate the already severe food insecurity in the region. Women and vulnerable groups including children, elderly and internally displaced people are likely to face the brunt of this crisis which is becoming more and more intractable as the resource base depletes and degrades across vast swaths of the country.

Without GEF support, government programs will not address climate related risks and vulnerabilities, particularly for groups such as women, children and elderly. On the other hand, GEF investments will provide much needed support and build capacities among local government institutions to systematically address crucial gaps and barriers. It will enable the mainstreaming of climate change adaptation and resilience building in ongoing programs and projects. GEF support will improve the effectiveness of agricultural and livestock extension services. It will support the natural resource management efforts of the government by bringing in crucial elements of watershed based integrated, climate resilient planning.

GEF support will ensure the nascent private sector is given a much-needed support and impetus to develop and exploit available opportunities in agricultural inputs, implements, post-harvest technologies and storage, food processing as well as climate proofing infrastructure such as small scale irrigation. Markets which remain under-developed on account of poor organizational capacities in agricultural and pastoral communities will be developed by the GEF project, improving incomes and financial sustainability of rural communities. The project will help these communities diversify income through supporting entrepreneurship among women and youth. There are few alternative sources of funds available to South Sudan to address the additional costs that climate change imposes on its development pathway. GEF, with its support can help address this gap.

Component wise cost reasoning and additionality is provided below:

The total additional costs of adaptation benefits in Component 1 are estimated at \$ 6,821,182

? GEF LDCF grant request: \$ 1,329,358

? Co-financing from baseline projects: \$ 5,491,824

The additionality for component 1 and outcome 1 lies in the mainstreaming of climate change adaptation in three national policies pertaining to agriculture and livestock extension, research and the industrial policy framework. The project will also support the formulation of the Northern Bahr el Ghazal State policy on community-based forest and natural resource management with specific emphasis on building climate change resilience. The component will also support integration of climate adaptation and resilience building in agricultural extension services through comprehensive advisory packages and training modules and materials for agricultural and agro-pastoral communities coupled with training of extension personnel in their dissemination to local communities. These will be supported with strategy papers and policy briefs that ensure a supportive framework for the implementation of these interventions on the ground.

Baseline projects will support the interventions under component 1 as follows:

? The SCGC project invests in institutional capacity building for climate change adaptation and in generating and transferring knowledge on climate change effects and climate benefits, both of which would contribute to the proposed outputs of the LDCF project on training and mainstreaming climate change in key policies in South Sudan.

The total additional costs of adaptation benefits in Component 2 are estimated at \$ 15,309,696

? GEF LDCF grant request: \$ 4,866,626

? Co-financing from baseline projects: \$ 10,443,070

The additionality for component 2 and outcome 2 comes from the introduction and investments in climate smart technologies in agriculture among agro-pastoral communities through hands on training and demonstrations in farmer and pastoral field schools. A number of initiatives have focused on increasing agricultural productivity without sufficient consideration to the lack of rural irrigation infrastructure and markets and value chains that are necessary to support high external input commercial agriculture. Instead, this project will focus on local varieties and locally adapted varieties of crops, vegetables, trees and livestock and will go a step further by testing and demonstrating their viability in local conditions in the demonstration plots and progressive farmer fields.

Investments will be made in nurseries of vegetables and seedlings of multi-purpose trees for agro-forestry, and in inputs and implements for crop and vegetable farmers as well as livestock owners and those engaged in fishing. Hardy, drought tolerant and disease/pest resistant varieties of crops and livestock will be introduced and promoted. Conservation agriculture and tilling techniques for soil and moisture conservation will be coupled with agro-forestry using multi-purpose trees and shrubs. The

component will also strengthen and establish community-based organizations with a specific focus on women, youth and vulnerable groups as a conduit for training and implementing these measures on their fields. These groups will be trained and provided support for income diversification and alternative livelihoods that reduce dependence on climate sensitive income sources and/or improve post-harvest storage and value addition to farm produce and NTFP. The component will facilitate small scale agribusinesses in adopting post-harvest and food processing technologies through investments in improved technology, cutting losses and providing much needed income from surplus produce.

Baseline projects will support the interventions under component 2 as follows:

? The improved dissemination of climate information proposed under the SCGC project could contribute to output 2.4 by providing farmers and extension services access to relevant climate information forecasts.

? Experiences and lessons learned during the SSLRP project could be scaled up in the second component (output 2.1 and 2.2) which also proposes to support food insecure farmers, and agro-pastoral and pastoralist households engaged in fishing, cropping, and livestock activities. Furthermore, the SSLRP experiences in supporting micro-enterprises could provide valuable lessons for activities under output 2.4. The AMVATP project could provide valuable lessons to be localized and scaled up under component output 2.3 of the project. which also seeks to strengthen agri-businesses and enterprise. Outputs 2.1 and 2.2 will similarly benefit from experiences gained in climate smart agricultural practices from the AMVATP project.

The total additional costs of adaptation benefits in Component 3 are estimated at \$ 9,629,604

? GEF LDCF /GEF-TF grant request: \$ 2,741,828

? Co-financing from baseline projects: \$ 6,917,376

The additionality for component 3 and outcome 3 lie in the long term climate resilience created through restoration and protection of catchments. This leads to the strengthening of ecosystem processes, ultimately leading to strengthened hydrologic services that lead to longer periods of streamflow, even in the dry season, flood and erosion control during extreme rain events and an increases supply of biomass in the form of forage, fodder, timber, fruit and other NTFP. By adopting a watershed approach, this project leverages these ecosystem processes. This approach is different from conventional, dispersed interventions. Instead, all interventions will be made within a catchment where they build on and support one another. For example, investments in rural infrastructure for soil and water conservation and water harvesting will have a cumulative impact on rangeland restoration and assisted restoration of forests and scrublands by increasing available soil moisture and fertility. Investments made by communities through seeding and planting will be protected through community mobilization in natural resource and forest management in the same areas and in the strengthening of local institutions and policies for their long-term management. Integrated approaches will also ensure

long term sustainability of small-scale irrigation which will be coupled with water harvesting on the supply side, and water saving irrigation technologies and appropriate crop choices on the demand side.

Baseline project will support the interventions under component 3 as follows:

? The focus on the SCGC project on ecosystem-based adaptation as strategy to combat impacts of climate change resonate with the outputs under component 3 of the LDCF project. The project will gain by adapting and scaling up successes of the SCGC project on restoration techniques and from the lessons learned during the peace-building efforts and strategies to resolve conflict over natural resources which are relevant, in particular, for the Aroyo and Chel catchments where conflicts between nomadic pastoral groups and resident communities are reported.

The SNNP project's support to labor intensive works for public works provides an opportunity for the LDCF project to collaborate in implementation of activities under this component. The LDCF project seeks to use local labor and local materials for construction of rural infrastructure for soil and water conservation, water harvesting, small scale irrigation and for afforestation and maintenance of plantations. A coordination between the projects could substantially increase the amount of infrastructure built in the project sites and could also support similar infrastructure in other regions - greatly expanding the impacts of both projects.

#### 6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The proposed LDCF project seeks to build resilience to climate change induced risks amongst agricultural and pastoral communities of South Sudan. GEF funds will be utilised effectively and strategically by:

- 1 Investing in established watershed-based approaches to with specific attention to restoring and managing ecosystem services to build long term resilience to climate change.
- 2 Leveraging mobile ICTs to bridge and connect rural communities with markets and value chains and supply of information, services and materials thereby facilitating private sector involvement and sustainability.
- 3 Utilizing modern spatial technologies and computer/phone assisted participatory survey methods to design, plan, monitor and report on project interventions and impacts - greatly improving community participation, transparency and efficiency of project implementation.
- 4 Ensuring empowerment and representation of vulnerable communities and groups, particularly women, through participatory approaches, targeted mobilization and raising awareness.
- 5 Strategically intervening in key areas that stabilize and support income generation, productivity of agricultural and pastoral systems and long-term restoration of ecosystem services.

6 Provide communities with critical climate proofing infrastructure that ensures conservation of soil and water as well as protection from floods, while enhancing the natural resource base.

7 Build capacities through training and investments in critical infrastructure and equipment focusing on agricultural value chains, post-harvest and storage technologies to revitalize the role of private sector in rural economies.

Project interventions, through its three components will benefit communities from three sites in the Northern Bahr el Ghazal state that lie in the Aweil Centre and Aweil East counties. Three micro-watersheds covering over 15,000 ha and 300ha of farmlands will be restored during this project, resulting in benefits to 75,000 people (35,729 male, 39,271 female). The project will undertake the restoration or construction of 129 hafirs, shallow wells, ponds and multiple types of pumps for irrigation. 3,750 (1,789 men and 1,964 women) will directly benefit from income and livelihood diversification. The project will help train and build capacities of 12,665 people (8226 male and 4,439 women), from both government institutions (250, 90 men, 60 women), extension services (774, 500 men, 254 women) as well as communities (9,430, 6130 men and 3,300 women). 2,211 business owners (1,436 male, 775 female) will benefit from the private sector engagement and capacity building activities. At the polity level, the project will contribute to strengthened partnerships among eight government ministries and will mainstream climate change related concerns in three national policies, namely i) National Agriculture and Livestock Extension Policy (NALEP); 2) The National Agricultural and Livestock Research Policy; and 3) Comprehensive Industrial Policy Framework. It will also support the formulation of the Northern Bahr el Ghazal Policy for Community Based Forest and Natural Resources Management, which will serve as a model for other regional and national policies. The outreach and knowledge management strategy of the project will further facilitate its replication and expansion to other states, and lessons learned will be shared in national, regional and international fora. Strategy papers on agricultural value chains, extension and advisory packages for farmers and livestock owners will be published that draw upon and consolidate lessons from this project and other successful initiatives in the region.

The project has specific global environmental benefits in the area of combating desertification, sustainable land management and restoration of ecosystems and ecosystem services which are the focus of component 2. The project will additionally contribute to the conservation of biodiversity and wildlife through its actions in community based forest management envisaged in component 3. Watershed restoration is an acknowledged strategy for disaster risk reduction through building resilience of communities against climate change[30]<sup>30</sup>. Strengthening the sustainable management of ecosystems and implementing integrated environmental and natural resource management approaches remains a priority area of investment in disaster risk reduction for resilience in the Sendai framework[31]<sup>31</sup>. The work proposed will contribute directly to the sustainable management of 15,000 ha of land in a region recognized as being highly vulnerable to desertification[32]<sup>32</sup>. Conserving and restoring ecosystem services, particularly those pertaining to water with a specific emphasis on needs of vulnerable

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communities will contribute towards 'climate change mitigation and adaptation and to combating desertification'.<sup>[33]</sup><sup>33</sup> Output 1 of the project will ensure that on-ground interventions under Output 2 contribute directly towards poverty eradication and combatting food insecurity among the most vulnerable populations. The proposed community mobilization and local institution and policy building, with a focus on natural resources will contribute and indirectly support the efforts in conflict resolution in Aweil and Aroyo which will contribute towards security in local communities and reduced tensions with the nomadic pastoral populations.

Improved biomass production from restored watersheds as a result of soil and water conservation will lead to higher productivity of livestock, improved catches from fisheries and higher harvests of NTFP for local communities. This will also directly contribute towards the objectives of the SLM objectives of the UNCCD in a region that is considered to be highly threatened by desertification.

The project will assist communities in adapting to climate induced disasters by adopting practices that diversify agriculture and reduce the risk of crop failure. The project will additionally reduce post-harvest losses, improve storage of crops and facilitate higher profit margins from food processing. This will contribute directly towards long term resilience against impacts of drought. Diversified income streams will further help reduce food insecurity over long terms.

The project will directly benefit over 18% of the population (75,000 persons) of the two counties in which its sites are located. Its indirect beneficiaries are expected to be substantially larger as the project will revive and strengthen local institutions for sustainable management of their resources and will enhance capacities of government extension and veterinary services to support farmers and pastoralists in the other payams of these counties. The strategy of the project specifically prioritizes support to vulnerable groups and women who will gain from a slew of income generation activities further strengthened by training, innovative financial services and mentorship.

#### **How the project will contribute to the recovery from the COVID-19 pandemic**

South Sudan, is highly vulnerable to the COVID-19 pandemic. The country is still recovering from the effects of civil war, and is constantly battling with various diseases including Ebola, malaria, cholera, HIV-AIDS and tuberculosis. The Government of South declared a national lockdown and closure of its international borders on 16 March 2020. This affected the movement of people, goods, and trade into the country. However this did not stop the pandemic from spreading. As per the WHO, In South Sudan, from 3 January 2020 to 4:50pm CEST, 1 September 2021, there have been 11,446 confirmed cases of COVID-19 with 120 deaths, reported to WHO. As of 29 August 2021, a total of 57,150 vaccine doses have been administered of who just 4,763 are fully vaccinated.

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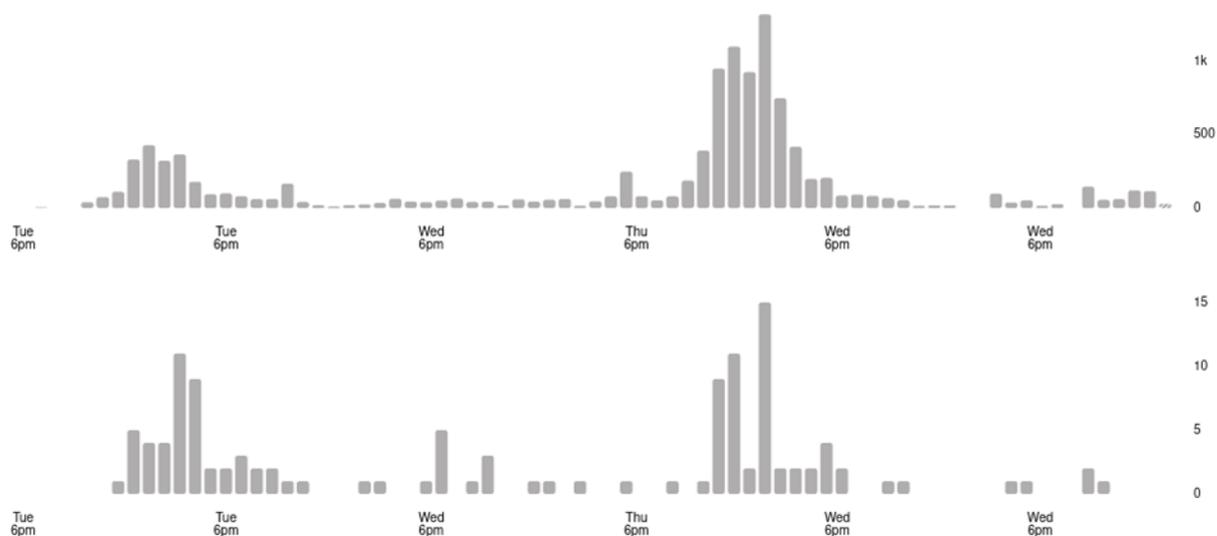


Figure 3 Daily change in COVID-19 infections (top) and deaths(bottom) in South Sudan from 30th March 2020 till 31st August 2021. Source: WHO < <https://covid19.who.int/region/afro/country/ss>>.

However, it is likely that these reported figures are underestimated given the constraints on testing, inaccessibility of health care, misdiagnosis and unreported deaths. Impacts of the COVID-19 shutdowns on the economy have been severe. A UNDP labor market study in 2020 found it led to business slowdowns, stifling of trade and limiting access to commodities and outputs. The [latest economic update for South Sudan by the World Bank](#) estimates a contraction of its economy by 4.1% due to concurrent shocks of COVID-19, floods, and subnational conflict. In a more detailed report[34]<sup>34</sup>, it is argued that concurrent shocks with the COVID-19 pandemic, low oil prices, floods, and locust infestation have drastically changed the economic outlook and threaten to derail the economic recovery and peace building process. The report further highlights that COVID-19 has resulted in the loss of jobs, especially in the non-farm self-employed activities and income generation has become an immediate question of survival for many households. The COVID-19 pandemic has resulted in declining revenue from trade, including food markets. The report highlights the importance of supporting job activities, particularly the processing and trading food products. The project addresses a key recommendation of the World Bank report : ?Support agricultural sector investments to address food insecurity, and revive market-linked production providing pathways to economic diversification.?

The LDCF project strategy is closely aligned with these priorities and therefore, the project can contribute significantly to tackling the impacts of the COVID-19 in the project sites, by reviving local agricultural production and creating new opportunities for employment and income. The specific actions of the project will result in improved and stabilized agricultural and livestock production through wide spread adoption of climate smart techniques among farmers and pastoralists. The project

will increase the resilience of local agricultural supply and value chains through strengthened linkages between producers, small industries involved in food processing and traders.

Local institutions and CBOs of producer groups, including women, will be strengthened through training on both technical as well as business management, accounting, book keeping and management. Agro-processing centers will be set up in the selected catchments and institutional structures for their management will be established. These centers will be equipped with relevant equipment and materials for storage, processing and packaging. Linkages with private operators, trader associations and middlemen will be established. The project will also train over 450 persons from among producers, traders and government officials.

This is likely to facilitate post-pandemic economic recovery as well as buffer the impacts of the economic slowdown in the project sites. Improved systems of communication between agencies and local institutions at both government and non-government level and among CBOs will greatly increase efficiencies of transactions and has the potential to support the establishment of mobile payments and credit. The improved communication will greatly help access of producers to traders, markets and information about markets for agricultural inputs and produce. This would also support economic recovery and enhance opportunities for local entrepreneurship. Improved communication between government agencies and communities that is proposed for the project will facilitate the effectiveness of extension services, particularly veterinary services and surveillance among migratory pastoral groups.

#### 7) innovativeness, sustainability and potential for scaling up

The project will ensure long term sustainability and continuation by investing in the strengthening of community-based institutions and government agencies at the local level. It will ensure representation of women and of vulnerable groups in these institutions and will create a micro-watershed committee, as a mechanism for different user groups in the project to coordinate, collaborate, cross-learn and complement each other's activities. The three micro-watershed committees will additionally coordinate their activities through annual meetings and sharing of information in Aweil where other agencies and projects will also be invited. This multiple stakeholder platform will provide a framework for collaboration, learning and coordination of projects and programmes of the government and other agencies in the state. The project will strengthen existing federations and associations by working through them and providing them additional training and support. Coordination mechanisms between national and sub-national agencies will be strengthened and streamlined through dialogue and information sharing events.

The project will be implemented through existing governmental mechanisms and institutions, thereby strengthening them and contributing to their capacity development, particularly at the local levels - county and below. Staff from government extension and development services will be trained and provided hands-on experience and opportunities for cross learning with experts in the field and colleagues. Gaps in critical communication systems and facilities will be addressed by the project by basing the local PMU at Aweil. Extension staff and development agents will be equipped with essentials such as survey and storage equipment, materials and supplies for extension support to both

farmers and pastoralists. Linkages with other ongoing and proposed projects of the government and development agencies and with private sector suppliers of these equipment and materials will be established through concerted coordination, knowledge exchange and collaboration to ensure long term sustenance of these activities.

At the community level, the project will invest in raising awareness and sensitization of traditional and customary authorities to equitable development and representation of women and vulnerable groups in decision making. Community based organizations will be strengthened through training and support, including seed money and relevant assets. Existing CBOs will be encouraged to participate in the project to avoid duplication and redundancy in ground based organizations. This ground level institution building and strengthening will provide communities necessary social capital to organize and pool resources for sustaining and extending project activities. Most of the CBOs involved at the project, for e.g. water user groups, will be assisted in building a system for raising finances and resources for O&M of project interventions and their extension and expansion.

Infrastructural investments made by the project in communities and catchment areas will be based on a comprehensive technical and social evaluation of the sites and users. These structures and the systems for their O&M will be designed to ensure they remain operational over a long term and to ensure their users are equipped financially and organizationally to operate, maintain and manage them without external support. These investments will provide long term facilities for communities, for which small user fees will be collected both in kind and in cash. User groups will be provided seed money and materials and trained in financial management, monitoring and O&M, thereby sustaining the impact of the project. User groups will be formed to manage small scale irrigation systems which include pumps and pipes that require frequent maintenance and replacement of parts. Other groups will manage agricultural implements, water harvesting structures including hafirs and check dams and water points with troughs and tanks and fences that separate livestock and human water sources to avoid contamination.

Types of equipment selected for the project will be determined by the availability of spares and parts among nearby markets and towns. Entrepreneurs who service and repair equipment will be identified and linked to the relevant user groups to ensure it continues to be used over a long term. Linkages with markets, private sector agencies for agricultural inputs, implements and sales of produce and accessing services, including financial services as well as extension support such as veterinary care will also be established to increase the financial viability of interventions and ensure the private sector meaningfully engages with the project.

Mechanisms proposed to ensure sustainability of entrepreneurial interventions, market and value chains are i) scaling up private sector engagement; ii) linking to financial services and iii) developing guidelines for operation and management of food post-harvest processing facilities and markets under governmental agencies or federations and associations that are formalized. This will place future investment planning for storage and processing of agricultural products under the control and as part of the plans and budgeting of institutions who represent the interest of the farmers and pastoral groups. Representation of women and vulnerable groups to these institutions will be ensured. It is to be noted that the sustainability mechanism of engagement of the private sector will be gradual, but necessary and can be replicated across South Sudan where entrepreneurship is as nascent as the rebuilding new

nation and almost nonexistent in commercial agriculture value chains in the project states of Aweil, from farming and input supplies and in the food processing and post-harvest marketing activities and supply chains. Relevant stakeholders identified during the PPG that will be engaged with during project inception include: i) informal producer groups in farming and agricultural seeds vendors; ii) local black smith groups in Aweil town and in Aroyo Payam; iii) farmers' cooperative and associations in Aweil who participate in the value chains of Gum Arabic and apiculture; iv) pastoralists; v) the state Industry Chamber Union, and vi) the pastoralist service centre for veterinary and agricultural services. An institutional PPP approach will be promoted to help overcome the weak capacities in private sector engagement.

The engagement of subsistence, micro and small-scale producers, cooperatives and financing entities in the food value chains will be another component of the sustainability strategy of the project. The plan for engagement of private sector will be guided by experts that will be identified to work with and be coordinated through Ministry of Trade and Industry, Ministry of Agriculture, and the Department of Environment at national, state and sub national payam and boma levels. Multiple criteria of unlocking investments will be explored, including from technical and micro financing solutions to climate resilient grow out farms from nurseries and food processing facilities. The project will also invest in strengthening private sector organizational and producer capacities and organizations such as for pilot cooperatives. Advisory packages will be designed that focus on food processing using low cost techniques and infrastructure. These will address current and projected future conditions of existing staple and new food value chains particularly those where progressive farmers, input vendors to processing and post-harvest enterprises are presently engaged.

This project utilizes lessons learned and strategies from prior initiatives in the Northern and Western Bahr el Ghazal. Other than the projects referred to in section IV of the ProDoc (Pg. 37), this specifically includes the GIZ project: "Adapting agricultural production methods to climate change and stabilizing livelihoods in Western Bahr el Ghazal", which concluded in 2018 and the Govt. of Canada funded project: "Upgrading the Fishery Sector in Upper Nile State, South Sudan, 2013-2019" which operated in the Greater Bahr el Ghazal region and was implemented by UNIDO and the Ministry of Livestock and Fisheries.

Most efforts in the scaling up and replication of the project will focus on areas that are in the vicinity of the project sites, including neighboring payams, counties and even states. This is because the biophysical conditions in the project site are very similar to other parts of South Sudan, particularly the northern states and specifically Northern Bahr el Ghazal. Furthermore, given the resource constraints, the capacity building and strengthening of government agencies focuses on line departments and their staff based at Aweil, Aroyo and Akuem. This includes extensive and in-depth training of line department staff and support to these agencies in terms of communication facilities and setting up of demonstration and test sites in their campuses. The entire process of replication will be facilitated by the contribution proposed to state policies in community based natural resources and forest management. Thus staff from agencies involved with the project, specifically those engaged in agricultural extension, veterinary care and pasture/forest management will be the primary vehicle for replication of project activities to other catchments in the vicinity of the project.

The involvement of the private sector and the building of local business skills is another mechanism to ensure the project interventions will be sustained and replicated based on their financial viability without external financing.

South Sudan has a ranking of 185 out of 190 countries in the Doing Business Report for 2020 . Key challenges faced by businesses include access to electricity (187/190), protecting minority investors (185/190) and access to credit (181/190). It is among the most important barriers to economic growth and private sector development. The report highlights the lack of credit data and poor legislative provisions and legal rights as key contributors to this.

Limited access to financial services can constrain investments in farming, livestock-raising and entrepreneurial activities for the proposed project. Banks, and NGOs[35]<sup>35</sup> can help address this challenge by not only providing access to credit but also supporting micro-credit and self-help groups within communities with a clear framework for access to credit and other financial services and providing financial literacy trainings to communities.

The project will additionally explore collaborations with local NGOs to support self-help groups and community based organizations. This will be based on self-help group model employed in many countries across the world, including Africa where it builds on rotating savings and credit associations and is supported by NGOs across the continent and reaches over 3.8 million people. This approach has been demonstrated to improve access to credit and asset ownership[36]<sup>36</sup> .

The matching funds approach is one among many mechanisms to provide a subsidy or for investments in assets for income generation and to incentivize groups to adhere to loan repayment schedules. This has been used effectively in government programs across South Asia, especially India[37]<sup>37</sup>. In Africa, subsidized grants have been found to be effective to target not only self-help groups, but also vulnerable groups such as persons with disabilities[38]<sup>38</sup>.

In the proposed project we will explore a tie-up with local financial service providers, wherein they provide support to save and access loans in community based organizations and self-help groups, to support investments into livelihood and income generation, including for entrepreneurs.

User groups and associations who are responsible for water infrastructure and assets such as food processing facilities will be guided in setting up formal mechanisms for collection of user fee from beneficiaries within their group. They will receive a small incentive in the form of matching grants to supplement the fee collected. Community self-help and saving groups will also be supported through financial literacy, book keeping as well as leadership and organizational skills.

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The project will make a total allocation of 150,000 USD towards these approaches via a grant to an experienced local NGO and Low Value Grants for CBOs over the five year period benefiting a total of 60 groups each year over the five years.

The project strategy also emphasizes mobilization and strengthening of community based organizations and local institutions as a key ingredient of sustainability, scaling up and replication. Scaling up of the project will be achieved by ensuring ownership of the project and its activities lie with the communities, government and local authorities and ensuring wider participation by different stakeholders who will continue operating in the project areas beyond GEF funding.

The project management structures will build on and strengthen existing institutional structures where possible and will provide small, matching-grants which will ensure financial viability and stability of user groups who require to cover O&M expenses of assets and facilities created by the project. Project activities will be aligned to existing development plans and programs especially at the payam and county level so that they are part of long-term strategies.

On a broader level, the M&E strategy proposed is designed to capture important lessons and experiences and to share these with both communities as well as project managers for decision making. The same information will be available to stakeholders at state and national levels and will be the basis for knowledge sharing, replication and scaling up of successful lessons and strategies from the project by other agencies.

The project will contract CBOs and progressive farmers and pastoralists for the supply of materials for proposed interventions. This includes supply of seeds of resilient varieties of crops, seedlings and saplings of vegetables and trees, livestock, milch animals and small ruminants. During this process, these 'suppliers' will be put in contact with customers (other CBOs and individuals) from within and outside their communities, and with other projects in the region. This is expected to result in some of these individuals and groups to create a financially sustainable business. Community animal health workers and those engaged in monitoring and protecting areas from grazing, maintaining fences and maintenance of soil and water conservation and flood control structures will also be paid a stipend from their respective CBOs. This will ensure interventions that require long term protection and care as well as services provided by focal persons in the community are paid for and thereby sustained.

The project will also utilize innovative approaches and technologies that improve the effectiveness and efficiency of its interventions and of monitoring the impacts and outcomes of proposed interventions. Participatory GIS technologies will be combined with aerial surveys using low cost, GPS equipped drones for the surveying, mapping and monitoring of micro-watershed restoration activities that are spread over large spatial scales.

A mix of formal surveys and citizen science-based approaches will be used for monitoring and reporting the impact and outcomes of project interventions. Experts will be engaged to identify robust and quantitative indicators that can be tracked by community members, including those who are semi-literate. These indicators will cover both socioeconomic as well as biophysical aspects of the project. The indicators and data collection framework will be gender disaggregated and will specifically track social safeguards and gender concerns.

Focal points within communities and CBOs will be trained in the collection of this data on illustrated forms designed for automatic digitization<sup>[39]</sup>, and on registers which can be scanned using an android based device. Project staff will also receive training in the use of mobile ICT based survey tools such as the Open Data Kit to facilitate efficient and accurate reporting and surveying of field observations, including collection, recording and transmitting data collected by the volunteers and focal points from communities.

Finally, the project will establish formal tie-ups with research agencies, both national as well as regional and international, to ensure the use of contemporary technologies and techniques in its interventions. This includes i) new and suitable varieties of crops (cereals, pulses and vegetables) for farmers; ii) indigenous species of trees, shrubs and grasses for agro-forestry and watershed restoration; iii) high yielding varieties of fruit and multiuse species of trees for homesteads, farms and cattle camps and iv) drought resilient varieties of livestock, milch animals and small ruminants. This knowledge sharing mechanism will also ensure the project leverages the latest veterinary and animal health technologies and contributes to ongoing efforts for the monitoring and surveillance of livestock diseases.

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[1] Nihal Fernando and Walter Garvey, 'The Rapid Water Sector Needs Assessment and a Way Forward.'

[2] Republic of South Sudan, 'Intended Nationally Determined Contribution.'

[3] Republic of South Sudan, 'Developing Capacities for Trade Integration and Economic Diversification.'

[4] Food and Agriculture Organisation of the United Nations and World Food Programme, 'Crop and Food Security Assessment Mission to South Sudan 2019.'

[5] Ministry of Agriculture, Forestry, Cooperatives and Rural Development and Ministry of Livestock and Fisheries Industries, 'Comprehensive Agricultural Development Master Plan (CAMP).'

[6] Nihal Fernando and Walter Garvey, 'The Rapid Water Sector Needs Assessment and a Way Forward.'

[7] We understand 'vulnerable communities' and/or 'vulnerable groups' as a term which describes both the condition and the processes that prevent individuals or groups from reaching sustainable development goals, or fully participating in social, economic and political life. In this document 'vulnerable communities/groups' describes individuals or groups of people that face higher exposure to climate change, disaster risk and poverty, including but not limited to women, youth, children, elderly, differently-able people, indigenous peoples, disadvantaged families and those living in high

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risk areas and danger zones. 'Vulnerable' does not mean that the group is vulnerable per se, but that this vulnerability is the result of social, economic and political processes.

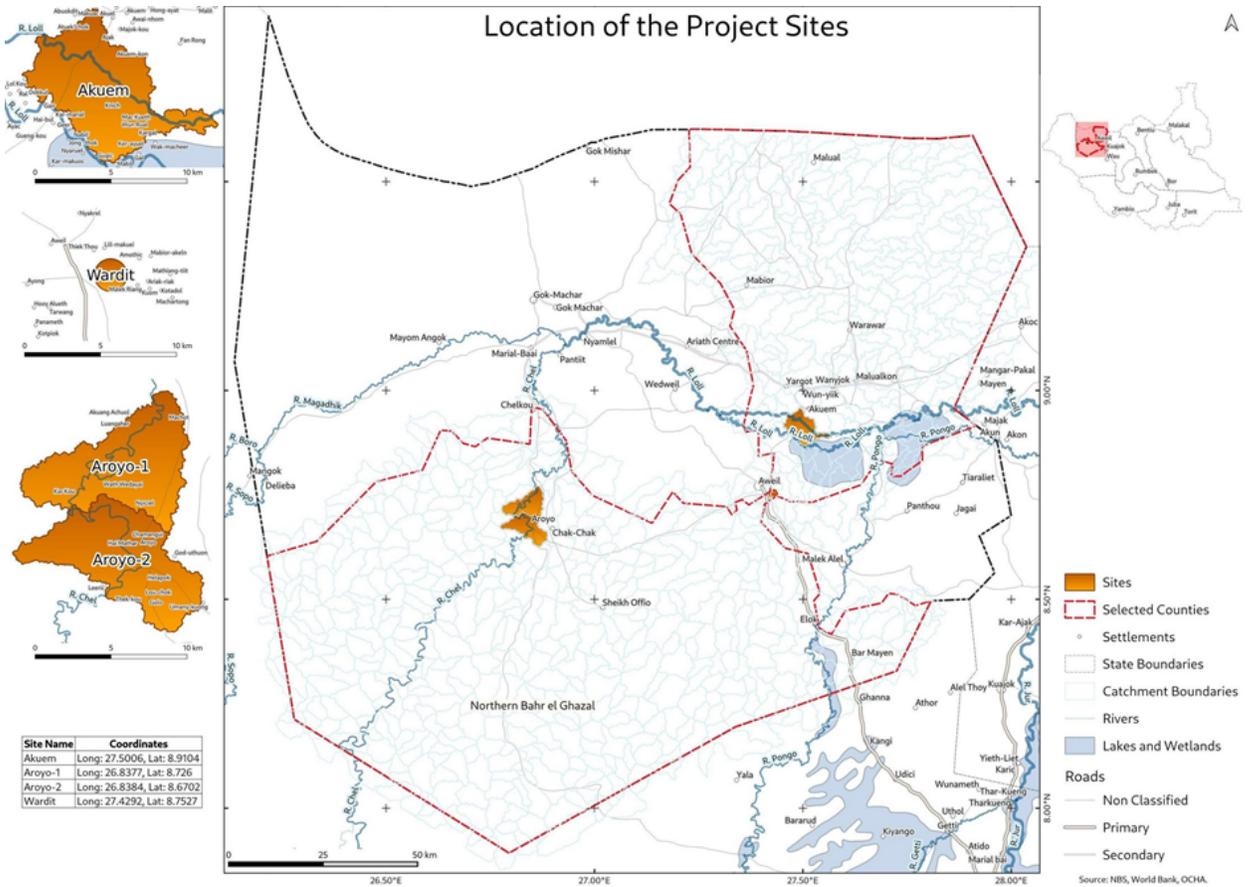
- [8] Government of South Sudan, 'The Transitional Constitution of the Republic of South Sudan, 2011.'
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- [11] Philip Omondi and Elliot Vhurumuku, 'Climate Risk and Food Security in South Sudan.'
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- [18] Zhao et al., 'Temperature Increase Reduces Global Yields of Major Crops in Four Independent Estimates'.
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- [21] Bernard B. Obaa and Stephen Angudubo, 'Engendered Value Chain Assessment for Sorghum, Groundnuts, Milk and Gum Arabic in the Former Northern Bahr El Ghazal State, South Sudan.'
- [22] Jeffrey C. Mariner and Roger Paskin, 'FAO Animal Health Manual 10 - Manual on Participatory Epidemiology - Method for the Collection of Action-Oriented Epidemiological Intelligence.'
- [23] Gershon Feder et al., 'Promises and Realities of Community-Based Agricultural Extension'; Climate Technology Center & Network, 'Community-Based Agricultural Extension | Climate Technology Centre & Network.'
- [24] Bruce and Mearns, 'Natural Resource Management and Land Policy in Developing Countries'; World Resources Institute, 'World Resources 2005.'

- [25] Millenium Ecosystem Assessment, "Ecosystems and Human Well-Being".
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- [27] Qureshi, Abdallah, and Tombe, "Farmers Perceptions, Practices and Proposals for Improving Agricultural Productivity in South Sudan".
- [28] For example the GIZ-project "Adapting agricultural production methods to climate change and stabilizing livelihoods in Western Bahr el Ghazal, South Sudan".
- [29] South Sudan Cash Working Group: Financial Service Providers as of June 2020  
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- [30] UNISDR, "Hyogo Framework for Action 2005-2015".
- [31] United Nations Office for Disaster Risk Reduction (UNISDR), "Sendai Framework for Disaster Risk Reduction 2015 - 2030".
- [32] Ministry of Environment, Republic of South Sudan and United Nations Environment Programme, "South Sudan First State of Environment and Outlook Report 2018".
- [33] Secretariat of the Convention on Biological Diversity, "CBD Home".
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- [35] For example < <https://fivetalents.org/proven-model> >
- [36] Gugerty, Biscaye, and Anderson, "Delivering Development?".
- [37] Madheswaran and Dharmadhikary, "Empowering Rural Women through Self-Help Groups".
- [38] Klerk, "Funding for Self-Employment of People with Disabilities. Grants, Loans, Revolving Funds or Linkage with Microfinance Programmes".
- [39] For use with tools such as ODK: <<https://docs.odk-x.org/scan-form-designer-using/#scan-form-using-adding-fields-checkbox-bubble>>

## **1b. Project Map and Coordinates**

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

Map with geo-referenced coordinates of sites provided in Annex E.



**1c. Child Project?**

**If this is a child project under a program, describe how the components contribute to the overall program impact.**

N/A

**2. Stakeholders**

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

**Civil Society Organizations** Yes

**Indigenous Peoples and Local Communities**

**Private Sector Entities**

**If none of the above, please explain why:**

**Please provide the Stakeholder Engagement Plan or equivalent assessment.**

Please see the Stakeholder Consultant Report (Annex 9a to the ProDoc, uploaded here) for the full report. Summary can be found below:

## **Summary**

Extensive stakeholders' consultations undertaken between the period August 7-21, 2020 in Aweil Centre and Aweil East Counties of NBGS. The outcomes of these consultations contribute to the development of the full-sized project proposal on Watershed Approaches for Climate Resilience in Agro-pastoral landscapes of the proposed targeted two Counties. In particular, the consultations inform the Stakeholder Engagement Plan (SHEP) and strategy for stakeholder engagement, ensuring an inclusive, gender sensitive approach is developed which identified and addresses the unique needs of women and marginalised groups in the project sites. The later includes People with Disabilities (PWD), unemployed youth, children and orphans, elderly Internally Displaced Persons (IDP), among who women, again, comprise about half the population.

## ***Assessment Methodology***

The assessment team comprised multi-representations from the relevant key government ministries; MoEF, MoAFS, MoWRI, MoTI and MoHADM. Two national consultants from UNIDO and UNDP were part of the team. The assessment team used a combination of approaches during the consultations; Key Informants Interviews (KIIs), Focused Groups Discussions (FGD), observations and a pre-determined checklist for guiding discussions with government representative, traditional leaders, women and youth representatives, unions/federations of farmers, pastoralists, traders etc. Secondary data also reviewed. Over 250 individuals interacted (as KII or in FGDs) with the team members over the duration of the assessment and the team visited the Payams of Aroyo, Bar Mayen, Aulic, Nyalath in in Aweil Centre County and Yergot, Mangok, Madhol, Baac and Wulang Payams in Aweil East County (*Ref. annex 1, pg.49*).

## ***Northern Bahr el Ghazal State***

NBGS is situated in the north-western part of South Sudan. The state is bordered by the Republic of Sudan to the north, Warrap state to the east and Western Bahr el Ghazal state to the south and west. The state comprised five Counties (Aweil Centre, Aweil South, Aweil North, Aweil East and Aweil West). According to FEWS NET[1], NBGS is located in the north-western flood plain Sorghum and Cattle livelihood zone. The most common climatic shocks experienced in the state are floods, prolonged dry spells/drought, and pests and diseases. In this regard, the Payams in Aweil Centre and Aweil East Counties were grouped according to the degree of their vulnerability to the major climatic shocks and the assessment team used this to conduct their consultations with the key stakeholders.

The state has a unimodal rainfall regime. Rainfall starts in May and ends in October in a normal season, however, this increasing have been unpredictable in the past few years. The state's landscape is divided into through zones depending on the depth of water table; the lowland has high water table (about 45m depth), the midland with water table at the depth of up to 90 meter and highland with very low water table of depths above 90 meters. The lowlands are often prone to flooding while the highlands are often characterised by scarcity of water especially in the dry season.

## ***Livelihoods of Communities***

Communities in NBGS mainly practice agro-pastoralism. In Aweil East and Aweil Centre Counties, farming tops the livelihood means followed by livestock husbandry. Other livelihoods means includes Beekeeping, fishing, small businesses, charcoal sale, firewood and grass sale, Gum Arabic collection and sale, hunting, wild food collection and paid employment/causal labour. Sorghum and Groundnuts are the main crops grown, other crops includes Sesame, Cowpeas, Millet, Vegetables etc. Average area cultivated by the smallholder farmers is 1.5 feddans (0.63 hectares). Both male and female contribute to food production, however, females carry the most burden as men mostly take part in land opening and ploughing while females do the rest of the operations (weeding, harvesting etc.). Gender roles also varies with crop type, for example women mostly cultivate vegetables and men cultivating Sorghum. Men also generally undertake Hunting and fishing.

### ***Climate hazards, impact and coping strategies***

As already mentioned earlier, the major climate hazards experienced by communities in NBGS are 1) floods ? example is mentioned of 2019 when the state and especially the two counties of Aweil Centre and Aweil East were inundated with floodwater from seasonal rivers overflowing their banks and actual rain water accumulation. Crops destroyed, people were displaced, household assets destroyed and diseases (malaria and typhoid in humans, foot and mouth diseases on livestock) incidences among humans and animals increased; 2) Prolong-dry spells which communities called drought because of its extended nature. This year (2020), the rainy season begun late in July/August as opposed to the normal start in May. Delayed planting was evident and crops planted earlier were destroyed, livestock and humans suffered from scarcity of water, and pasture was not adequate for the livestock population; 3) Pests and diseases proliferation during both flooding and drought seasons. Farmers reported increased incidences and destruction of crops by fall armyworm, increase malaria causing mosquitoes especially when floodwater spread all over the area.

Communities often resort to distressed sale of livestock especially during the drought season. Other coping strategies used during drought are hunting for wild game, collecting wild foods, charcoal and grass sale, cultivation of vegetables in the lowland areas, cultivation of drought tolerant crop varieties such as Sorghum and Millet and also beekeeping in the highland areas. In case of floods, communities affected normally moved to higher grounds such as along the railway lines and main roads, establish dikes around homesteads and fields, depend on the abundant fish and kinship support.

### ***Agricultural Value Chains***

In NBGS, private sector actors play important role in the agricultural value chains. Markets exist in most of the locations visited, however, the structures vary from permanent to semi-permanent and some are daily, weekly and monthly market venues. Agricultural products such as Sorghum, Sesame, Groundnuts and assorted vegetables are sold in these markets in addition to livestock sales. At the time of assessment, there was scarcity of Sorghum, which is the staple food in the State. Households, conduct distress sales of livestock for purchase of commodities such as Sorghum and other grains.

Commodity movement routes are in two directions; Sudan via Warawar in Aweil East County and Juba/Uganda via Wau into Aweil town. During consultations, stakeholders identified some of the constraints facing agricultural value chains; the major ones includes hyperinflation, numerous

checkpoints and high taxations. Other related hindrances are drought, flooding, low production, poor post-harvest handling, lack of market information and inadequate storage facilities. Potential enterprises for promotion include Sorghum, Groundnuts, Sesame, Beekeeping, Poultry, Aquaculture, Gum Arabic and livestock value chains (hides and skin, milk etc.). Agricultural inputs dealers, local blacksmiths, cooperatives, unions (farmers, pastoralists, traders etc.) are the relevant private sectors found on ground with the potential for the promotion of agricultural value chains.

Potential activities for the improvement of agricultural value chains, as expressed by the various stakeholders consulted include; Post-harvest equipment, drying, processing and storage facilities for cooperatives, entrepreneurship and business management skills, extension and market information services among others. Irrigation equipment for dry season production especially of vegetables.

### ***Social and Environmental Safeguard Issues***

Potential social issues mentioned are 1) localised conflict between the local communities and the migratory pastoralists from Sudan and Central African Republic, 2) women are key actors engaged in small scale agricultural value chains, however, they have less capacity to compete with the men who are engaged in medium to large scale agricultural value chain activities. The women lack access to value addition technologies, transportation and lack of market information are constraints. The use of their earnings are often decided upon by their spouses, which leave them at a disadvantage.

Some livelihoods and coping strategies (e.g. charcoal sale, firewood and grass sale, brick making, and sand harvesting from seasonal river beds) practiced by community members in the two Counties contribute to deforestation and soil erosion. Huge numbers of livestock converging in the highland areas lead to overgrazing, soil compaction and depletion of pastures. Unregulated logging of natural forest trees have contributed to forest degradation. Some key informants in Aroyo also mentioned the indiscriminate disposal of wastes e.g. veterinary used drugs containers and syringes contribute to pollution of their environment.

### ***Development Barriers identified during the Stakeholders Consultations***

The barriers are all interrelated and contribute at various degree to the lack or limited progress towards livelihoods and economic enhancement among communities in the two Counties and NBGS in general. These barriers as outlined by the stakeholders include;

- a) Regular flooding especially in the lowland areas
- b) Intermittent prolonged dry spells/drought and unpredictability of rainfalls
- c) Low capacities and incentivization among the government extension staff
- d) Low production and productivity in the agricultural sector due to lack of improved seeds varieties and farmers use of traditional rudimentary equipment for cultivation
- e) Livestock diseases
- f) Poor road network/connection to the Bomas; some areas get cut-off most part of the year especially during the rainy season

### ***Project Implementation Sites Identified during the stakeholders Consultations:***

The assessment team organized a one-day workshop at Aweil Grand Hotel in Aweil town at the end of consultations and attended by key state stakeholders. The purpose of this workshop was to validate the information acquired during the assessment and provide specific sites within the two Counties for project implementation. The criteria for project sites selection includes among other; logistical considerations (accessibility, availability of water points etc.), presence of government institutions, socio-economic status of local communities (vulnerability, Food Insecurity Levels, population engaged in agricultural activities etc.), environmental conditions of the proposed sites e.g. potential for restoration, and the sites should be watershed/catchment areas within the two selected Counties. Total target project area is 75,000 hectares and 75000 Households to benefit from the intervention.

Stakeholders at the workshop, proposed six catchment areas (three in each of Aweil Centre and Aweil East Counties) as possible project implementation sites. The sites in Aweil Centre County are Aroyo, Ngami and Wardit catchments. Aroyo and Ngami are in the highland areas of the County, while Wardit is in the lowland area. Akuem, Angot and Kor Goc catchments are proposed in Aweil East County. Akuem and Kor Goc are in the lowland areas of the County while Angot is in the highland area. Given that the areas proposed are bigger in size than the project target, the sites may be reduced to two; one in each County. This will consolidate project impact for future upscaling.

### ***Some Proposed Project Intervention activities***

- a) Introduction of improved agricultural inputs and equipment for increased production and productivity.
- b) Capacity building in areas of water management (e.g. haffirs, dykes etc.), agribusiness, beekeeping, poultry management and post-harvest techniques.
- c) Investment opportunity to market their agricultural products
- d) Dissemination of timely weather information, practice agro-forestry for a diversified and resilient livelihoods
- e) Capacity building for the extension workers for enhanced extension and advisory services

### ***Institutions/Organizations active in Aweil Centre and Aweil East Counties (more details in annex 3)***

- a) State Ministry of Agriculture, Forestry, Animal Resources, Fisheries and Cooperatives
- b) State Ministry of Water Resources, Irrigation and Rural Development
- c) United Nations Food and Agricultural Organization
- d) United Nations World Food Programme
- e) Centre for Emergency and Development Support
- f) Farmers? Life Development Agency

- g) World Vision South Sudan
- h) VSF-Canada/SUISS

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[1]<https://fews.net/sites/default/files/documents/reports/Livelihoods%20Zone%20Map%20and%20Descriptions%20for%20South%20Sudan.pdf>

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

**How stakeholders will be consulted:**

Four key stakeholder groups have been identified. These are i) Primary or key stakeholders which included communities and their representatives including traditional leaders and chiefs and representatives of community based organisations. ii) Federations of traders, businessmen and employers as well as those of farmers and pastoral groups. iii) Government agencies which include both national and state government but focusing on county and payam level government staff, particularly those engaged in agricultural extension and veterinary service provision to communities. iv) NGOs including multilateral agencies, international, national and local NGOs. Each of these has been mapped to specific roles and strategies for engagement during the project. The key elements of this strategy are:

1. Creation of a supportive policy framework which ensures representation and participation of women and vulnerable groups at all stages of the project.
2. Creation of a supportive environment through mobilization and awareness raising of communities (men, women) for meaningful involvement of women and members from vulnerable groups to participate in project implementation and benefit from its activities.
3. Careful and continuous engagement with both traditional leaders and chiefs as well as government officials and community representatives. This will be particularly intense during the inception phase of the project but will be sustained throughout its life cycle. It will specifically include workshops for gender sensitization and inclusion.
4. Involving existing CBOs, progressive farmers and pastoralists as focal points for channeling project activities and demonstrating climate adaptation technologies and approaches. Creation of new CBOs and identifying and supporting capacity development of new CBOs and focal persons where needed.
5. Ensuring meaningful participation and ownership of project activities and assets by community members by creating framework for in-cash/in-kind contributions for project activities and users fee for the use of assets created by the project to sustain their operation and maintenance.
6. Enhancing capacities of both government institutions, CBOs and beneficiaries through hands on training and creation/restoration of assets to support adaptation, resilience and management of natural resources.
7. Involvement of CBOs in all stages of design, implementation and monitoring of project activities, including mechanisms for the validation and feedback of communities and their representatives in project activities.

8. Formal frameworks to ensure transparency, including multiple channels of communication and information dissemination, including translations into Arabic and Dinka, and formal procedures for disclosure and recording of grievances.

9. Mechanisms for oversight in the transfer of ownership of assets created by the project to institutions, CBOs and communities that ensure they continue to be used by key stakeholders.

10. Alignment with provisions for social and environmental safeguards of the project.

### Means and timing of engagement

Stakeholder engagements were initiated during the design of the PIF for this proposal and continued throughout the PPG phase. These will be implemented by project staff, including government staff who are deputed to the project as well as community focal points and volunteers from community-based organizations. Some, stakeholder engagement activities will be initiated and completed during the inception phase, but most will gather pace after the inception phase. These will and be conducted throughout the project period, intensifying seasonally to align with local cropping and pastoral calendars to maximize participation and impact.

The table below summarizes the stakeholder group, means of engagement and the timing.

Stakeholder Group	Main Interests	Responsibilities and Activities	Timing
1. Primary Stakeholders	Output 2.1, 2.2, 2.4, 3.1-3.4		
1.a. Communities and community Based Organisations		Setting up of committees, user groups, associations and teams for planning, implementing, monitoring and coordinating project activities.	Inception phase (yr1)
		Participation in training programmes, awareness campaigns and demonstrations of technologies, techniques and approaches for CCA	Throughout
		Actual implementation of activities in a participatory and equitable fashion.	Year 2 onward
		In-cash and in-kind contributions, including provision of labour and materials towards activities.	Year 2 onward
		Conducting regular monitoring of activities, reporting their outputs and outcomes using pre-defined indicators.	Year 2 onward
		Participation in meetings and representing their groups, committees and associations at the payam, county or national level.	Throughout
1.b. Local Leaders and Chiefs		Ensuring the project adheres to the social safeguards, including protection and enhancement of community resources.	Throughout

		Ensure participation and representation of women and vulnerable groups.	Throughout
		Awareness raising and mobilisation activities during the inception phase of the project.	Year 1
		Attending training for sensitisation to issues of gender and social equity	Throughout
		Representing communities in the watershed committees.	Year 2 onward
2. Federations	Output 2.3	Co-development and implementation of a private sector engagement strategy for the project.	Year 2 onward
		Identify capacity bottlenecks and weak links in value chains.	Inception phase
		Identify key participants and focal persons for training, capacity building and engagement.	Inception phase
		Provide mentors and resource persons for training and capacity building.	Year 2 onward
3. Government Agencies	Output 1.1, 1.2, 1.4, 2.1, 2.2, 2.4, 3.1-3.4		
3.a. Project Steering Committee		Coordinate activities between national, state and county levels including:	
		1. Providing technical, material and capacity development support.	Throughout
		2. Networking and interfacing between communities, government stakeholders and private sector agencies and NGOs.	Throughout
		3. On ground planning and capacity building.	Throughout
		4. Coordination between other agencies so ensure synergy and cross learning between projects and on-ground collaborations where possible.	Year 2 onward
		Suitable administrative and financial oversight over the project.	Throughout
		Ensuring monitoring and reporting requirements are met.	Throughout
		Necessary policy level guidance and oversight.	Throughout

3.b. State agencies		Integration of climate change adaptation strategies in agriculture and natural resources management policies	Year 2 onward
		Participating in annual knowledge sharing events at Aweil.	Year 2 onward
		Leading agricultural extension and veterinary support services through payam staff and boma volunteers for which capacity building and training will be done.	Year 2 onward
		Participate in the mobilisation of communities for the project.	Year 2 onward
		Transfer techniques and technologies that build climate resilience and adaptation among farmers and livestock owners.	Year 2 onward
		Facilitate climate adaptation for farmers and pastoral communities and seek to restore and protect catchments using a watershed approach.	Year 2 onward
		Implementation of activities under output 3.4 dealing with small scale irrigation and restoration of shallow wells and water harvesting structures.	Year 2 onward
		Implementing activities with women groups and vulnerable communities that are mainstreamed across the project.	Year 2 onward
4. NGOs	Output 1.1.2, 1.3 and 1.4		
4.a I-NGOs, Multilateral & Research Agencies		Development and localisation of new technologies and techniques such as:	
		1. Locally relevant climate smart agricultural practices.	Inception phase
		2. Integrated and participatory mapping and GIS for landscape planning using drone technologies and mobile ICT.	Inception phase
		3. Design of a mobile ICT based participatory and spatially explicit framework for monitoring project activities and outcomes.	Inception phase
		Training to communities, county, and on occasion to national level technical staff in new technologies and approaches and on market value chains.	Year 2 onward
		Co-finance, cost sharing and collaboration between projects.	Year 2 onward

	Conducting in-depth policy as well as field-based needs assessments with specific focus on gender responsive climate change adaptation.	Inception phase
	Gender dis-aggregated indicators to measure and monitor on-ground adaptation actions by communities and their impacts.	Inception phase
	Comprehensive recommendations for gender mainstreaming in the CAMP and its various components.	Year 1 and 2
4.b. Local NGOs	Participating in knowledge sharing events and the watershed committee meetings.	Year 2 onward
	Participating in mutual experience sharing, learning and coordination of complementary activities.	Year 2 onward
	Implementation of on-ground activities such as training, extension or supervision of physical interventions.	Year 2 onward

### Dissemination of information

Multiple means of dissemination will be utilised for this project to ensure information is conveyed effectively and efficiently to all stakeholders, particularly to women and vulnerable groups, many of whom are illiterate and have limited access to information. Key elements of the dissemination strategy are:

- 1 Translation of all relevant documents into Dinka and Arabic, including that of audio/video materials.
- 2 Use of innovative IoT and mobile ICT devices to ensure rapid and low-cost delivery of information in multiple forms. For example, use of radios with SD card readers to enable dissemination of audio tutorials, awareness and information for illiterate and semi-literate stakeholders.
- 3 Effective use of mobile networks by building local capacities in their use to enable quick and efficient sharing of materials, media and information between the central and field office and the site offices.
- 4 Multiple channels of dissemination, including internet based social media handles, private and community radio stations, print and audio and video.
- 5 Emphasis on illustrated materials and design to ensure accessibility by illiterate and semi-literate users.
- 6 Ensuring all training and awareness materials is gender responsive and incorporates concerns of vulnerable groups and communities. This includes design and preparation of separate training and awareness materials for women, vulnerable groups and communities.

### Resource requirements thorough the project life cycle

The success and sustainability of this project will be determined by the level of ownership of its stakeholders, and their capacities to continue and extend the interventions made. The table below

summarises the substantial resources allocated for stakeholder engagement each year. This is largely cost of events including meetings, awareness and mobilisation campaigns and capacity building. It does not include costs of project staff, of publication, nor of physical interventions, infrastructure or equipment, even if this would reside with stakeholders.

Sl.	Output	Year1	Year2	Year3	Year4	Year5	Total
1.1	Integration of climate change adaptation strategies in agriculture and natural resources management policies.	66,774	39,122	39,122	39,122	39,122	223,262
1.2	Building baselines of socioeconomic, ecological, edaphic and topographical characteristics of the project sites to inform site prioritisation.	74,102	21,175	18,277	17,032	16,036	146,622
1.4	Guiding materials to support climate-responsive extension services developed, delivered and distributed	24,975	24,975	24,975	24,975	24,975	124,875
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	154,550	165,470	165,470	165,470	43,770	694,730

2.2	Farmer field schools established and community based organizations (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)	103,760	77,136	77,136	77,136	77,136	412,303
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.	8,638	8,638	0	0	0	17,276
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	48,296	48,296	48,296	48,296	48,296	241,480
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	198,840	3,000	3,000	3,000	3,000	210,840

3.4	Increased resilience to drought through creation of water points from shallow boreholes	0	19,425	19,425	19,425	19,425	77,700
Total		679,935	407,237	395,701	394,456	271,760	2,149,088

Select what role civil society will play in the project:

**Consulted only;**

**Member of Advisory Body; Contractor; Yes**

**Co-financier;**

**Member of project steering committee or equivalent decision-making body;**

**Executor or co-executor; Yes**

**Other (Please explain) Yes**

Beneficiary representatives in organisational structure and members of watershed committees.

### 3. Gender Equality and Women's Empowerment

**Provide the gender analysis or equivalent socio-economic assesment.**

Gender equality is a significant objective of the proposed project. A comprehensive gender analysis and gender action plan were formulated to guide the project activities and gender is comprehensively addressed and integrated with the proposed project strategies. The Gender Action Plan (GAP), facilitate equality in accessing project benefits by both men and women. It will ensure that all women are actively consulted and engaged in project design, decision-making, implementation and monitoring processes, including the active engagement of marginalized groups of women (indigenous, displaced, unmarried, young women. Finally, gender-disaggregated data and information will be collected to inform M&E and adaptive management responses during project implementation. The GAP includes activities to be undertaken in order to ensure mainstreaming of concerns related to gender equality and equity. It will guide the Project Management Unit (PMU) as well as project partners on involvement and integration of men and women, not only in the delivery of outputs, but also in the monitoring and evaluation of the process and the results obtained.

The project aims to incorporate gender analysis and gender concerns into all aspects of policy, procedures, projects, and monitoring systems. The project implementation strategy and its activities are gender responsive and designed to increase participation of women in decision-making processes, while facilitating equality and equity for both men and women to the extent possible, given the

constraints of systemic barriers that are related to deep-rooted traditions and power structures. While some of the root causes of the existing gender imbalances in South Sudan cannot be resolved given the focus, resources, and time that is available for this specific project, activities will ensure that both men and women will be empowered to increase their understanding and appreciation of the importance that both genders play in ensuring climate resilience.

In line with national policies as well as GEF and UNDP guidelines, the project will adopt the following principles in its day-to-day management:

- ? Demonstrate gender-responsiveness in all interactions with project stakeholders;
- ? Refrain from using language or behavior denoting bias and disrespect for any individual based on gender;
- ? Avoid gender stereotyping in project documents and communication outputs;
- ? Support zero tolerance for sexual harassment, gender-based violence and/or sexual exploitation and abuse of men, women, girls and boys that may occur in connection with any of its supported activities; and
- ? Collect gender statistics/information under gender-responsive indicators to inform results-based and adaptive M&E; this allows for evidence-based decision-making throughout the project cycle.

The GAP has been developed with particular attention to existing forms of discrimination against women and adequate mechanisms to overcome these limitations. The project will seek to reduce the risk that these discriminations are inadvertently reproduced in project implementation. Participation of illiterate representatives in the capacity-building activities will be enabled in order to ensure participation of the most vulnerable stakeholders. A specific focus on those structures is key for indigenous women's empowerment so that safeguards are mainstreamed in stakeholder engagement and gender action plans. A careful analysis of existing roles and responsibilities of women (divided per subgroup) along with details of time commitments, constraints and capacities was done during the PPG process and will be developed further as part of the inception phase. This will lead to specific strategies for each of the target groups that proposed activities do not add to the burden on women, even as they ensure their full participation. Specific activities where concerns and priorities of women will be taken on board during the design and prioritization of technological interventions include:

- i. Small scale irrigation, land preparation, agro-processing, storage and post-harvest technologies.
- ii. Interventions which can replace or alleviate labor inputs into tasks typically assigned to women will be prioritized. This includes interventions such as shallow boreholes, animal powered draught, milling and drying technologies as well as fuel efficient stoves.
- iii. Interventions which can directly reduce their burden in tasks such as fuel wood and water collection. This includes siting of water harvesting structures and fuel wood plantations that may be proposed.

The project will work with and generate awareness about women's issues and their rights among traditional leaders and members of the communities. This will contribute towards the process of empowerment of women and facilitate their meaningful participation in decision making within the communities. The project will furthermore ensure that women are represented in user groups and CBOs involved in implementing project activities including:

- a. Watershed restoration and assisted restoration and reforestation to increase biomass productivity and access to fuel.
- b. Water harvesting structures for human, livestock and small scale irrigation.
- c. Climate smart agriculture, including vegetable gardens and crops.
- d. Income diversification including small ruminants, apiculture and NTFP.

Technical support, training and financing will be provided on the sustainable use of natural resources, while actively engaging NGOs focused on women's rights and economic empowerment as natural vehicles for promoting gender equality. Approaches to support women in sustainable land-use and alternative income-generation will take into account the fact that they typically have different interests and incentives than men to participate in these types of activities. For all capacity-building activities (component 2), a detailed Gender Responsive Budget (GRB) will be designed that disaggregates expenditures in terms of women and men, girls and boys.

**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 Yes**

**Generating socio-economic benefits or services or women Yes**

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

Yes

**4. Private sector engagement**

**Elaborate on the private sector's engagement in the project, if any.**

Strengthening market linkages and value chains will be a key focus of project. Post-harvest losses in South Sudan are reported to be as high as 40% due to lack of storage and other factors. This is an area where the private sector can play a key role. Project activities will include enhancement and creation of

relevant low-cost infrastructure for storage, agro-processing and agri-enterprises, working both with the producers and traders in major markets.

The project will extend linkages of the project with private sector financing and public supported investments to agro and food value chains climate adaptation initiatives. The intervention will engage farmers, agribusinesses and local organisations in the agro productive sectors within the three micro-watersheds of Aweil Centre and Aweil East and with the vegetable farmers in the Wardit area. The project will co-finance pilot actions on food processing and post-harvest management and invest in community infrastructure, supporting the establishment of and sustaining market and value chains in which the private sector will play a key role.

Private sector participation in the supply of seeds, implements and materials for small scale irrigation, including installation of shallow boreholes and low cost pumps will be encouraged. The private sector will also be engaged with for supply of veterinary products and services and linkages with cattle markets and markets for superior breeds of drought resilient varieties of livestock will be explored.

Private sector and agribusiness stakeholders and entrepreneurs will be involved in participatory planning of project interventions. They will be encouraged to invest in post-harvesting and value addition activities. Entrepreneurs engaged in raising nurseries, vegetable growers and small ruminant keepers, and staple cereals and grain farmers will be linked with marketing associations and post-harvest processing groups.

The project will build capacities of government institutions to support small scale business development services for value chains in food processing. Training will be provided to entrepreneurs and small business in administrative and technical aspects, and by linking them with micro financing services. Linkages to financial services will be established and guidelines institute for operation and management of food post-harvest processing facilities and markets under governmental agencies or federations and associations. Key targets for these financial linkages will be micro and small-scale producers, cooperatives and financing entities in the food value chains.

An institutional PPP approach will be promoted with a range of private stakeholders including: i) informal producer groups in farming and agricultural seeds vendors; ii) local black smith groups in Aweil town and in Aroyo Payam; iii) farmers? cooperative and associations in Aweil who participate in the value chains of Gum Arabic and apiculture; iv) pastoralists; v) the state Industry Chamber Union, and vi) the pastoralist service centre for veterinary and agricultural services. The project will also invest in strengthening private sector organizational and producer capacities and organizations such as for pilot cooperatives.

## **5. Risks to Achieving Project Objectives**

**Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):**

The project is classified Substantial Risk according to the Social and Environmental Screening Procedure which was conducted during PPG. Because some activities are still to be specified on the basis of project selection criteria, an additional safeguards screening is expected before these activities start.

As the project will be jointly implemented with UNIDO, its activities have been screened through UNDP SESP, to ensure the full project's compliance and consistency with UNDP safeguards policy.

During the implementation phase, UNIDO will apply their own safeguard policies and procedures (UNIDO environmental and social safeguards policies and procedures, ESSP) to the project activities under their responsibility as GEF Agency (totaling US\$1.575 million in LDCF funds). For those UNIDO activities, compliance with the UNDP SES is therefore not expected. The PMU will be in charge of ensuring consistency.

These activities however fall within scope of project governance (Project Board), assurance (UNDP/UNIDO), monitoring, reporting, and accountability mechanisms, providing key risk control framework and mechanism.

**Financial, operational and regulatory risks:**

*Security and instability*

**Risk:** Political or security complications in project sites may constrain or delay the implementation of activities and could impact private sector involvement by affecting markets and value chains.

**Mitigation/avoidance:** Security risks and accessibility were considered during the selection of sites and those with security challenges and poor accessibility were avoided. One of the reasons for selection of the sites was because these areas have been free of conflict due to proactive efforts of the government who have ensured peace in the region. The project will be part of the existing UNDP peace building efforts in the project catchments where frequent clashes between nomadic pastorals and local communities are known to occur. As these conflicts typically occur during the return of the nomadic pastorals, peace-building efforts of reconciliation committees will be heightened during this period. The project will also ensure that its activities involve nomadic communities who are present in the project catchments.

*Limited capacities may prevent duty bearers from discharging their duties and responsibilities*

**Risk:** Extended periods of insecurity and recent administrative realignments in government departments have led to low staffing and poor levels of capacity building and training among staff. The duty bearers of this project, government ministries and local authorities and farmers' organizations, have low capacities to: i) measure and manage the impact of climate change on agriculture; ii) engage with all members of the communities in depth, and iii) facilitate and monitor a grievance redress mechanism. This could result in administrative delays and could also affect the quality and quantity of outputs.

**Mitigation/avoidance:** In order to reinforce the capacities of the duty-bearers to conduct the project effectively and meet their obligations, all outcomes include targeted capacity-building. UNDP, with World Vision will appoint a full-time project management team comprising of professionals with expertise in administrative, social as well as technical aspects of the project. Highly trained and motivated professionals with expertise in both the administrative, social as well as technical aspects of implementing climate resilience and adaptation projects will be assembled for this project. This will include a full-time project manager. Technical experts in agriculture, animal husbandry, veterinary sciences and NRM will be engaged for designing, overseeing and analyzing results of surveys, for preparing training materials and for training project staff in relevant technologies and techniques. Safeguards specialists, including gender,

environmental and social safeguards and stakeholder engagement will be engaged to lead the socioeconomic and environmental vulnerability assessments and designing the framework for continual and participatory monitoring of safeguards.

These experts will be drawn from both national and international agencies with the mandate to transfer capacities to local institutions, including community-based organizations. Training and skill up gradation will be conducted throughout the project's life cycle and will be coupled with close oversight of the project by experts from the field and by PMU staff. These measures will ensure that technical staff are well equipped to effectively and efficiently discharge their duties and that project management and administration are handled professionally and meet both GEF and UNDP standards and requirements. Government agencies, particularly the state Ministry of Agriculture, Forestry, Animal Resources, have staff with clearly defined roles in extension down to the payam level and volunteers down to the boma. Many of these extension staff have prior experience and training which will be built upon by this project.

#### *Limited Private Sector Involvement*

**Risk:** Private sector involvement in project activities and investment in climate adaptation may be limited. This may be worsened by the COVID-19 pandemic.

**Mitigation/avoidance:** Prolonged insecurity and conflict have severely constrained the development of markets and value chains in South Sudan and led to disruption and closure of many traditional markets and places of trade. The project sites have been selected strategically to be close to existing markets that cater to the needs of the agricultural and pastoral communities. Initial contacts with federations of traders have been made during the PPG stage of the project to explore the potential for strengthening the markets and value chains through strategic investment in training, equipment and facilities both for traders and entrepreneurs as well as for the agro-pastoral communities (Output 2.3). This dual pronged approach is expected to create the necessary impetus to strengthen and expand the market linkages locally. At the policy level, the project will engage with relevant ministries at both national and state/county level to help strengthen necessary value chains in the agricultural sector (Output 1.2). The National and State Ministries of Trade and Industry have both pledged their support to these initiatives which will give an additional impetus to private sector involvement.

#### *Conflict and displacement*

**Risk:** While the project sites have been selected on the basis of their relative stability, there have been instances of violence between nomadic pastoral groups and residents in the Aroyo and Chel micro-watersheds. There are also isolated instances of violence in the project area which can jeopardize implementation or cause delays. The state of Northern Bahr el Gazal houses a large population IDPs as well as refugees from other regions. These communities have been allowed to settle by the resident communities and have been given access to land and natural resources. In most cases these rights are allocated through traditional authorities.

**Mitigation/avoidance:** Conflict and consequent displacement are unlikely to affect the entire project as its sites are located in two counties, both of which are have remained largely peaceful. Furthermore, this project is being implemented via regional government agencies and departments and its field activities will be coordinated out of the Aweil field office of World Vision which is a secure and safe location. Project staff, including any consultants or supporting staff from partner agencies will conform to agreed government and UN protocols on safety. The county administrator will be the official channel to provide

security related information to the project teams and project activities will only be initiated and conducted in those sites which are deemed secure. Additionally, the extent of this risk will be reassessed at project inception and will continue to be monitored. Any severe implications that will affect project implementation in specific locations will be considered by the Steering Committee and communicated accordingly.

*Risk of co-financing commitments not being met*

**Risk:** There is a small risk that planned co-financing for the project may be delayed or not be provided on time or in the amounts intended.

**Mitigation/avoidance:** Delays in funding or cancellation of projects have occurred in the past on account of insecurity. However, after the 2018 peace agreement, there has been a resumption of projects and finances for initiatives in South Sudan. This risk has also been minimized by carefully reviewing the co-finance commitments of the institutional partners and revising the co-finance commitments on that basis. The amount of in-kind co-finance is based on actual allocations of staff time, infrastructure and facilities of the government to the project. These commitments are supported by letters that are provided in Annex 14. Co-finance through baseline projects and partnerships is based on projects to which financial commitments have already been made and which are concurrent to the proposed LDCF project.

**Social Risks**

*Potential economic displacement*

**Risk:** The use by the project of degraded rangelands or low-productivity agricultural areas for more productive land-uses and for watershed management may reduce open access pastures and fields in project areas, and hence restrict availability, quality of and access to resources or basic services, in particular to vulnerable individuals or groups. These restrictions could potentially result in economic displacement.

**Mitigation/avoidance:** The Environmental and Social Management Framework (ESMF) outlines all steps required in order to ensure full compliance with SES requirement during project implementation. In accordance with the ESMF an environmental and social impact assessment (ESIA) will be carried out for all significant risks, triggered as per the ESMF. The ESIA process will draw upon the ESMF to assess the associated impacts, and to inform the specific management measures outlined in the ensuing Management Plans. Given that the project's downstream interventions (and notably the project's support to agricultural and pasture activities) are yet to be specified on the basis of selection criteria of projects, the potential direct impacts are yet to be fully assessed and can't be identified with a reasonable degree of certainty. Further screening will be needed as the projects are selected, through this SESP.

The application of standard good practice such as Free Prior Informed Consent and participatory approaches when choosing project sites and discussing specific agricultural practices will be implemented. The SESP will be subject to further consultations on the field after the activities have been specified, leading to a potential update in the first six months of the project. A social baseline will be conducted and made available in an accessible location in the first six months of the project, before any field activity starts. The SESP conclusion (list of risks) will be translated to Arabic and Dink made available and discussed with all stakeholders, including indigenous peoples and women, for their inputs. An Indigenous Peoples Plan, together with the enclosed FPIC protocol, will address conflict resolutions mechanisms. The Grievance Redress Mechanism proposed in the ESMF will be subject to revisions based on the FPIC protocol. The inception phase of the project will involve a comprehensive, field based and participatory

planning exercise which involves stakeholders from the government, development agencies and communities. The project will follow a human rights-based approach and contribute to reducing inequalities and improving livelihoods of poor and vulnerable people.

This proposal has been designed with the objective of minimizing risks related to physical and economic displacement. Additionally, during implementation these issues will be addressed in the frame of participatory assessment and planning process within and between the participating communities. Activities will only be implemented in locations, in agreement with the respective communities, and where the risks of economic displacement will be assessed through the ESIA as low. The project will deliver improved services to local communities to reduce their vulnerability to climate change, and address some of the underlying causes of vulnerability, hence reinforcing their capacities to act on the long-term.

#### *Increased social tensions*

**Risk:** The project's support to agricultural and pasture activities could lead to adverse impact on the existing social tensions in the area ? but not present in the selected localities - between land, including Internally Displaced Persons. These tensions could also increase violent altercations which have arisen over the last years, and it may affect the repartition of benefits among beneficiaries, to the detriment of women and indigenous peoples.

**Mitigation/avoidance:** The Stakeholder Engagement Plan (SEP, Annex 9), has been designed and will be made available in Arabic and Dinka to all stakeholders before the activities start. It specifies the need for a full disclosure of information and providing for meaningful participation of stakeholders during the planning and implementation of site-specific activities including as part of site-specific Environmental and Social screenings and assessments. UNDP Grievance Redress Mechanism will promote awareness of the grievance mechanism which provides a means for redress of aggrieved individuals or groups. A conflict analysis will be conducted together with the ESIA in order to detect i) potential existing tensions and ii) existing conflict resolution mechanisms, with a particular emphasis on the livelihoods of Indigenous Peoples and Internally Displaced Peoples. The Livelihood Action Plan will be conducted on a participatory basis, through the representative management structures set up by the project to manage interventions, both in farm and pasture lands. All communities' livelihoods, including nomadic pastoralists and IDPs, will be represented. The project will additionally participate in the peace building initiatives and mechanisms such as the annual peace conferences organized by the state government agencies and the UNDP to ensure potential conflicts between groups are avoided and mechanism for conflict resolution are in place.

#### *Gender exclusion*

**Risk:** As women are traditionally excluded from decision-making processes, they could be excluded from the support planned for farmers and farmers organizations as well as in the national and regional institutions. This could inadvertently reproduce existing discriminations, including in the design of agriculture and natural resources management policies, and even gender-based violence against women in project implementation.

**Mitigation/avoidance:** Gender concerns are integrated all outcomes of the project document and supported by the Gender analysis and action plan. The gender analysis develops a comprehensive situational analysis. It enables the project to better understand the levels of participation and involvement of women and men in agriculture and in community-decision-making as well as different experiences of specific development challenges bear by subsets of the women groups. It also enables the project to better

take into account women's priorities, restraints and motivations when designing and supporting alternative livelihoods, as well as to identify opportunities for greater equality and empowerment for women throughout project implementation. All activities have been designed to be gender-sensitive, supported by gender-disaggregated indicators.

The project has been designed with particular attention to establishing mechanisms to reduce the risk that existing discriminations against women are inadvertently reproduced in project implementation. Output 1.1 (Integration of CCA strategies in agriculture and natural resources management policies) will be supported by the recruitment of a national gender consultant in charge of developing site specific social and environmental safeguards, and in particular to look at Principle 2. Consultations held during PPG included women's group and a needs assessment focusing on the vulnerability and climate adaptation needs of women was conducted to inform the formulation of adaptation and disaster risk reduction plans. The meeting with NGB State Women Association, in particular, led the consultants to listen to many different women's groups and was the occasion to gather insights on the challenges met by them. Clear recommendations were made such as the implementation of flood control measures (channels and dykes), included in the project. All reports, including proper documentation, pictures and proof of consent are stored and available on demand. Gender responsive and inclusive community mobilization and capacity building activities will precede all interventions, according to the SEP.

The Ministries of Gender, Child and Youth Affairs at both the national and state governments have been part of the project formulation. At the national level the ministry is part of the Project Steering Committee to guide and support the policy interventions proposed. At the state level, the ministry has participated in the community consultations and brought on board representatives of women groups and youth. This is captured in the SEP (Annex 9) and has informed the gender strategy. The involvement of these ministries will further enhance the meaningful participation of women and vulnerable groups in the project.

#### *Child labour and worker rights*

**Risk:** Most of the agricultural sector in the project area is informal and fails to comply with national and international labor standards. Hence there is a risk of violation of workers' rights within the cooperatives and small agribusinesses supported by the project, linked to forced labor and in particular to child labour.

**Mitigation/avoidance:** Inspections of all activities are expected to be carried out by Ministry of the Agriculture and local authorities. In order to ensure the protection of children and all workers against forced labor and other worst forms of labor in agriculture, it is expected to step up inspections of those activities. The project will work closely with farmers organizations and agribusinesses within this project, and responsible parties will ensure that these organizations comply with all national and international labor standards. Training to farmers organizations and agribusinesses on adapted practices will recall these standards and monitoring of working conditions will be diligently followed as planned in the ProDoc.

#### *Misuse of traditional knowledge*

**Risk:** The project could adversely impact traditional indigenous knowledge by sharing it in a way that is not culturally appropriate and/or triggering its loss through the introduction of climate smart agriculture technologies and new practices.

**Mitigation/avoidance:** Activity 1.1.3, 1.3.3 and 1.4.2 will ensure that all traditional knowledge and practices found in use are documented and clearly acknowledged by the project during the surveys and assessments that are done during the inception. Activity 1.4.1 will further ensure that these practices are built upon and synergise with new technologies to facilitate better adoption and uptake. The Indigenous Peoples Plan will plan adequate measures to avoid the loss of indigenous agricultural knowledge and to define culturally appropriate ways of sharing indigenous knowledge.

*Exclusion of indigenous peoples and vulnerable groups*

**Risk:** There is a risk that indigenous peoples and vulnerable groups, might not be involved during the implementation of the project including investments in local adaptation measures for resilient agriculture and implementation of local-level economic activities, and therefore not engaged in, supportive of, or benefiting from project activities.

**Mitigation/avoidance:** Responsible parties will make sure that the project activities strengthen national laws and local regulations in line with the respect of UNDP standard and internationally recognized indigenous people's rights. Specific measures pertaining to the respect of indigenous people's rights to land, food, services, and participation in project which affect their lands will be enclosed within the Indigenous Peoples Plan, to be developed on a participatory basis.

? Separate culturally appropriate consultations with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned were held during the PPG phase and will continue during project implementation. These will be documented and remain available upon request. The FPIC protocol will be further detailed in the Indigenous Peoples Plan.

? Training and material support provided to farmers organizations and women's groups will be based on inter-community dialogue, ensuring that all local and indigenous communities participate equitably. These CBOS will be supported in the establishment of transparent and accountable mechanisms for the equitable distribution of local benefits (Activity 2.3.4 and 3.4.2).

? Participation of all communities in farmers in the farmer organizations will be encouraged in a culturally sensitive way to ensure a sufficient number of indigenous participants and promotion of sustainable traditional and customary use practices while preventing any involuntary restrictions on land and resource use (Activity 1.3.2 and 2.2.1).

? The project will ensure that communities are able to represent themselves through their own organizations.

? Farmers organizations are expected to establish transparent and accountable mechanisms for the equitable distribution of local benefits.

? A Stakeholder Engagement Plan has been developed as part of the project design to articulate participation mechanisms and processes. It will inform mitigation and management measures for risks associated with the presence of different ethnic groups in the targeted landscape during project implementation. The breadth and detail of participatory mechanisms and processes are scaled to the Project's potential social and environmental risks and impacts and particular circumstances.

? A summary of the SEP, IPP and FPIC protocol will be translated in appropriate languages and made available to all stakeholders, including indigenous peoples. They have been designed on the basis of

consultations and will be subject to further consultations on the field leading to a potential revision in the first six months of the project.

? The project will engage the services of gender and social engagement expert to conduct a comprehensive assessment of social risks for each project site and to develop a clear set of guidelines that ensure women and vulnerable groups are identified and provided opportunities to participate in decision making in the project (Activities 1.3.2, 1.3.3).

? The PPG phase involved discussions with representatives of the Ministry of Gender, Child and Social Welfare at national, state and payam level. Representatives of vulnerable groups, women community members and gender and community experts will be sought out during consultations to assess the nature and scale of the challenges and incorporate these into project design.

? Vulnerable groups will be supported to develop leadership skills and facilitated to hold positions in committees and user groups created. Mobilization and awareness generation activities are integrated with all the project components.

? Project staff will be trained in FPIC, participatory approaches and empowered to integrate the needs of vulnerable groups in project planning (Activity 2.21, 2.4.1).

? Careful follow-up of pastoralists/agriculturalists or of politically and economically triggered inter-community conflict will be done by the PMU throughout the project utilizing available mechanisms that are already in place in project sites. The Grievance Redress Mechanism will integrate existing conflict resolution mechanisms. Further, the complaint and grievance mechanism established by UNDP and the project executing agency(ies) will allow individuals to bring up claims, when they cannot resolve at the level of CBOs.

? The project will ensure that local communities including indigenous peoples, women and landless youths are involved in the assessments, negotiations and dialogue regarding land classification, use and planning and are empowered to eventually influence allocation decisions. They will be empowered to influence allocation decisions and will receive benefits from the restoration and provision of income-generating activities on communal lands.

? Identification of exact activities sites will be done in consultation of national and state government agencies and their line departments the local levels. Local leaders will be consulted, and their approval obtained before initiating any project activities. Communities will retain control over the planning and design of on-ground activities and will be provided access to project management staff.

## **Environmental Risks**

### *Habitat destruction*

**Risk:** Even though the project aims at making agricultural practices more sustainable by improving their adaptation to climate change, the support to the development of agribusinesses triggered by the project could cause increased development in the area and potential demographic pressure could lead to improper use of agro-chemicals and degradation of the natural habitats, including to the neighboring Chelkou and Ashana game Reserves.

**Mitigation/avoidance:** The project proposes a watershed approach to building resilience of communities and landscapes which will restore and enhance the management of natural resources, including these

reserves. A participatory framework for planning of project interventions and managing resources will be used wherein stakeholders will play a key role in management decisions to ensure sustainable use of resources and to avoid adverse impacts on ecosystems and people's livelihoods. A Biodiversity Action Plan will be designed as a SES Management Plan looking particularly at biodiversity hotspots and at sites connected through water streams to the project area. The project will work to strengthen institutional capacities to ensure effective and efficient management of agriculture and pastoral landscapes in regard to climate change, including the mitigation of potential adverse impacts to habitats. Environmental, Social and Technical Assessments, including a cost-benefit analysis of options, will be undertaken for the targeted sites will detail viable options. Risks will be examined in the course of these targeted assessments, which will analyze adverse impacts on habitats, ecosystems and services. They will identify socially acceptable and environmentally suitable solutions to be supported by the project. Environmental assessment of those alternatives will be included in this assessment (Activity 3.1.2). The sites of intervention themselves do not constitute areas considered critical habitat. All potential activities will be carried out in accordance with applicable management plan, and with conditions of approval for the activity as set out by the regulatory authorities. Integrated Pest Management (IPM) and Integrated Vector Management (IVM) approaches will be used for pest control where necessary. Disease and pest resistant varieties will be coupled with suitable cultural practices and biological control and pesticides will only be used as a last resort to prevent unacceptable levels of pest damage. World Vision will advise, through capacity-building activities, safe, effective and environmentally sound pest management in accordance with the WHO/FAO International Code of Conduct on Pesticide Management for the safe labeling, packaging, handling, storage, application and disposal of pesticides. Hazards of pesticide use will be carefully considered, and the least toxic pesticides selected that are known to be effective, have minimal effects on non-target species and the environment, and minimize risks associated with development of resistance in pests and vectors.

#### *Introduction of invasive alien species*

**Risk:** The afforestation activities, if not well designed, could potentially lead to an inadvertent introduction of invasive alien species.

**Mitigation/avoidance:** Afforestation with native multi-use species in the catchments will be prioritized. All assisted natural regeneration activities will only employ native species. A full consultation and assessment will be conducted to develop afforestation plans for each of the focal landscapes in line with international best practice and consideration of the local context (Activity 1.1.3). Plans will recommend the use of integrated activities that promote the use of indigenous tree species and through sustainable and environmentally friendly means. These activities will result in reduced de-forestation and conservation of existing forest species. The specific sites and composition of species to be used for afforestation and reforestation will be fine-tuned during discussions and planning with communities (Activity 3.1.2, 3.2.2). Recommended fast growing species for fodder and fuel will largely be limited to homesteads and village boundaries. No exotic species will be introduced by the project and only those non-native species will be used which have already been introduced under other government programs and are known to be non-invasive. Furthermore, exotic species will only be used if they provide specific advantages over native counterparts and will only be planted in homesteads, private lands and woodlots (Output 2.2 and activity 3.3.4) and will occupy relatively small areas.

#### *Over extraction of ground water*

**Risk:** The Project envisages the installation of pumps for extraction of ground water from shallow aquifers. This will be done in conjunction with restoration of wells, construction of small-scale check-dams and other small soil and water conservation structures, including water storage, spreading structures and drainage. This could lead to unsustainable groundwater resources extraction, as well as alteration of soils, flows and impound water.

**Mitigation/avoidance:** Specifics of sites and interventions will be decided through comprehensive surveys (Activity 1.1.3, 3.1.2, 3.1.3 and 3.1.4). The survey and design of these interventions will specifically include safeguards assessments and the SESP will be used to screen all construction activities once identified. Technical and feasibility studies will be conducted for each activity. The community based micro-watershed committee will coordinate the construction of water harvesting/extraction structures. Project staff including site engineers will design, document and report on the activities. User groups formed for managing these communal assets and structures will operate and protect them from over-exploitation. The design and oversight of construction of ponds and water harvesting structures will be done by professional engineers after a comprehensive site survey (Activity 3.1.4). Safety measures, including measures to minimize pollution and waste will be integral to the design and implementation of these activities. Local materials will be used for soil and water conservation structures. All earthworks will be completed well in advance of rainy seasons to prevent any erosion or sedimentation of water bodies. Soil stabilization with vegetation will be done to further reduce post-construction erosion. Most catchment-based interventions will be located on unmanaged and degraded lands and water courses which otherwise cause erosion and flooding. Water impoundments will be small in size and designed with optimally placed surplus weirs/overflow channels so that the obstruction is temporary and does not significantly alter the stream hydrology. World Vision will appoint a site supervisor who will oversee and direct construction and field activities including use of safe work practices, safe handling and disposal of waste, and other common construction issues and practices, storage and use of fuels and other hazardous material.

#### *Climate change impacts*

**Risk:** Climate change, which manifests itself mainly through more violent storms during the rainy season, has generated major shifts in the seasonal calendar, increased heat waves, perturbations in agriculture and among pastoral groups. It has affected water retention and storage in ponds and wetlands affecting those engaged in fishing. Rapid streamflow during extreme rain events could potentially damage the soil and water conservation and water harvesting structures proposed. Excessive temperatures and prolonged drought conditions can affect the survival of saplings and success of the various planting/seeding interventions proposed.

**Mitigation/avoidance:** This project focuses on the transfer of capacities, social infrastructure and community assets to equip communities to adapt to and mitigate the effects of climate change. It will specifically build climate resilience among farmers, pastoralists, those engaged in fishing and the collection of timber and non-timber forest produce. While extreme events are likely to negatively impact project activities, by and large, the activities will be resilient to climate change impacts. Capacity enhancement of State entities and natural resources users will be supported and monitored to ensure that communities' livelihoods are better adapted to climate change. Alternative livelihood activities are designed to be climate-smart; promotion of innovative agro-pastoral techniques is emphasized. Flood, water scarcity and drought management systems will be part of the capacity-building and knowledge sharing activities. Component 1 of the project focuses on institutional capacity building, the second on

supporting farming communities and agro-pastoral groups while Component 3 which focuses on catchment restoration which will provide long term climate resilience for all communities and particularly for pastoral groups. The design of structures will be based on best practices and will incorporate current climate scenarios and return periods for floods to ensure structural integrity of all construction during extreme events. All nursery raising and planting activities will be undertaken based on the most recent available forecasts. Nurseries will only be established near water points to ensure sapling can be protected and maintained during prolonged dry periods and high levels of heat. Best practices in nursery raising and the use of hardy varieties of saplings will ensure high survival of plants both in the nursery and after planting. Soil and water conservation measures will go hand in hand with afforestation and planting sites in micro-watersheds will be selected based on soil quality and moisture availability for optimal survival.

#### *Increase in vectors and spread of diseases*

**Risk:** Small scale water storage may have potential to provide breeding areas for mosquitoes which represent a nuisance and increase the prevalence of Malaria or other significant mosquito borne diseases.

**Mitigation/avoidance:** Because this risk can't be avoided, mitigation measures will be implemented to tackle the adverse effects especially before the rainy season which constitutes a peak of transmission (April to October). The project will partner with local health authorities and projects to support i) distribution of insecticide-impregnated mosquito nets to limit the spread of malaria in the area; ii) improvement of the health coverage of the area and the encouragement of the future operators of the site to carry out regular medical check-ups; iii) Raising awareness and educating the population on hygiene measures.

#### **Emergent risks due to the COVID-19 pandemic**

##### *Introduction and spread of the COVID-19 virus due to project activities*

**Risk:** The project relies on continuous and intensive stakeholder engagement and use of participatory methods and engagement in order to transfer climate adaptation technologies and techniques. It is therefore necessary that measures are put in place to mitigate the risk of transmission to both project staff and stakeholders.

**Mitigation Measures:** The strategic elements to minimize and mitigate risks associated with COVID listed below pertain to the period prior to widespread vaccinations. However, even after stakeholders have been vaccinated, precautions will be kept in place as per government mandated protocols and WHO recommended best practices:

1. A system of delegation of responsibilities will be put in place to decentralize decision making and action wherever feasible. Multiple channels of communication will be opened up between project managers at all levels and project staff to ensure activities are not held up and to facilitate the process of delegation and administrative support.
2. Project annual work plans will be prepared with due consideration for possible delays due to COVID-19 restrictions after assessing such risks at planning stages, and adaptive measures will be undertaken accordingly.
3. The bulk of activities will be coordinated locally - from the World Vision field office at Aweil and implemented by local extension and line department staff. This will minimize potential transmission due to movement of project staff. Delegation of activities, as described earlier, will further ensure activities are implemented smoothly with minimal movement of staff between towns and cities.

4. Adherence to all government directives, such as lock downs and mandatory quarantine as well as restrictions on travel, organization of events or sizes of meetings and workshops.
5. Project staff will take additional precautions to ensure that stakeholders and beneficiaries are not exposed to and that project activities do not in any way, allow spreading of the virus to rural areas. Awareness among project staff and stakeholders, including communities will be embedded in all interactions.
6. International travel, but also travel between towns and villages will be avoided wherever possible. In case where such travel is unavoidable, the concerned person will follow government mandated and WHO recommended protocols including testing and isolation/quarantine to prevent any possibility of spreading. Project staff engaged in training of trainers and conducting field surveys will, in particular, need to take these precautions and will organize their schedules so that fewer and longer trips are made in place of short, frequent trips.
7. Project staff and consultants will be required to learn how to use of online tools such for video conferencing, project management and collaboration. Screen casting and recording software will be used to ensure presentations and training videos can be prepared and shared online ahead of remotely held meetings and workshops. Where necessary, project staff will assist in translation and editing of the materials.
8. The project has a strong emphasis on the use of mobile ICT which includes provision of networking equipment and infrastructure to the field office and project teams. This will minimize face to face interactions and facilitate online interactions and transfer of data, information and instructions. Project staff will be encouraged to utilize online facilities and applications for meetings and workshops where possible. Training will be provided in the use and operation of such tools.
9. The training of trainers approach will effectively transfer capacities to local institutions. Precautions that need to be taken during these interactions will include limiting the number of trainees per workshop, use of personal protective equipment (PPE) and selection of venues where social distancing measures can be maintained and where there is regular monitoring of staff health.
10. Mandated safety protocols and best practices such as use of masks, gloves, sanitizers and maintaining social distancing will be followed by project staff. Community members participating in project activities will also be required to follow these practices and encouraged to adopt them as basic precautionary measures to avoid contracting and spreading COVID-19.
11. Protective equipment such as masks, gloves and hand sanitizers will be provided to staff and participants in project meetings and events. Their use will be mandated.
12. If and when possible, project staff and consultants who require movement between regions and internationally will immunize themselves using approved vaccinations.
13. All group meetings and events will be organized in open spaces and participants will be required to use PPE and maintain social distancing. The size of participants in the meetings will be kept low by ensuring representatives of households as opposed to multiple members take part in meetings.
14. Where possible, materials and goods will be purchased in bulk and moved to project sites in project vehicles or vehicles hired for the purpose.

15. The project and its staff will assist relevant agencies in vaccination drives by facilitating access of communities to vaccinations and of health workers to communities.

*Disruptions and delays due to lockdowns*

**Risk:** National and regional responses to the COVID pandemic may involve planned as well as sudden lockdowns. This could limit access of staff and materials to the sites and constrain the movement of stakeholders and communities which delays or even prevents timely implementation of activities.

**Mitigation/avoidance:** The project and its personnel will abide by all rules and regulation mandated by the Government of South Sudan in response to COVID-19. Most lockdowns will likely be imposed within specific zones or cities allowing project activities to go unimpeded elsewhere. The project manager will determine the location and period of all lockdowns and take the following measures to ensure project activities are conducted smoothly:

1. Project staff and consultants will be required to learn how to use of online tools such for video conferencing, project management and collaboration as described above. This includes the use of screen casting and recording software to ensure presentations and training videos can be prepared and shared online ahead of remotely held meetings and workshops. Where necessary, project staff will assist in translation and editing of the materials.
2. Communication and transport channels will be identified and hired where needed to transport project materials between locations.
3. Project activities will be prioritized and windows and gaps in lockdown will be used effectively to ensure they are completed in time.
4. A system of delegation of responsibilities will be put in place as describe above. This will be carefully monitored by the project manager and her/his support staff.

*Disruption of value chains and markets*

**Risk:** Value chains and markets may be affected by the COVID-19 pandemic

**Mitigation/avoidance:** The project will attempt to localize value chains and linkages to markets and private sector agencies, so they are more resilient to the potential disruption of transportation and movement. Farmers and pastoral groups will be supported to establish and strengthen local linkages to with markets and supply chains. Where possible, materials and goods will be purchased in bulk and moved to project sites in project vehicles or vehicles hired for the purpose. The wide range of value chains promoted by the project, and their diversification between rural areas and towns, will reduce the risk that all project focus is put on specific value chains particularly affected by the epidemics. Operationally, project staff and consultants will abide to the regulations and hygiene practices described above, including the use of online communications where possible.

*Lack of access to capital*

**Risk:** Entrepreneurs and small-scale farmers may be unable to invest or sustain investment in transition to climate adaptation and resilience practices due to lack of access to capital

**Mitigation/avoidance:** Partnerships among primary producers and businesses in post-harvest processing and marketing segments will be leveraged to bridge the risk to sustained investments linked to climate

resilient value chains ? such as outputs from farmer field schools linked to markets; and to local development.

#### 6. Institutional Arrangement and Coordination

**Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.**

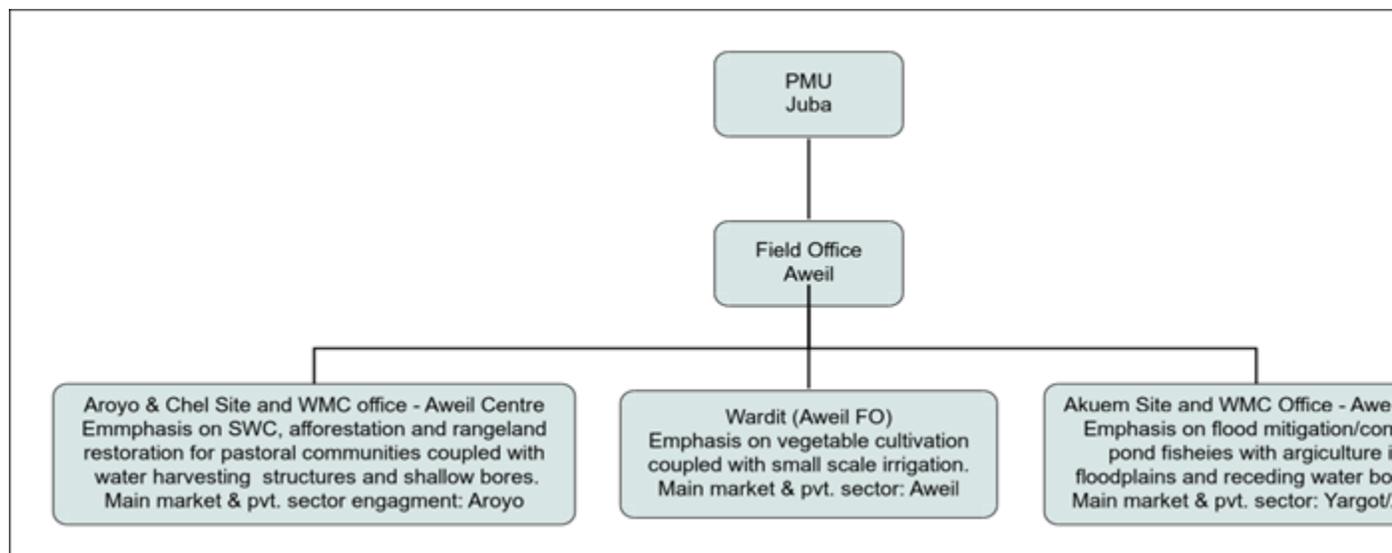
Role	Concerned agencies in PIF	Concerned agencies in final proposal
Project Steering Committee	Ministry of Agriculture and Food Security Ministry of Trade and Industry, and East African Community Affairs Ministry of Livestock and Fisheries Ministry of Environment and Forestry	Ministry of Environment and Forestry Ministry of Agriculture and Food Security Ministry of Livestock and Fisheries Ministry of Gender, Child and Social Welfare Ministry of Culture, Youth and Sports Ministry of Finance and Public Services Ministry of Trade and Industry Ministry of Water Resources and Irrigation Ministry of Humanitarian Affairs and Disaster Management School of Natural Resources and Environmental Studies ? University of Juba
Implementing Partner	UNDP/UNIDO	World Vision South Sudan (PMU and for activities under UNDP as GEF Agency. UNIDO will select a third-party Executing Entity for activities under UNIDO as GEF Agency during inception phase.
Responsible Parties	Not Specified	Not specified
Project Support	Direct Implementation Modality (UNDP and UNIDO provide full execution support for the project).	Not needed

World Vision South Sudan (WVSS) will act as the Implementing Partner on behalf of the Ministry of Environment and Forestry (Executing Entity) for activities under UNDP as GEF Agency. WVSS will be responsible and held accountable for managing the project activities on a day-to-day basis as per UNDP's Civil Society (CSO), including Non-governmental Organization (NGO) modality. During the inception

phase, UNIDO will contract a Implementation Partner for activities under UNIDO as GEF Agency through UNIDO standard modality of International Open Competition in line with established Procurement Rules and processes The Implementing Partner will utilise the constitutional arrangement and roles already in place in South Sudan to ensure the effective implementation of the project. The project will be supported by a national PMU as well as a field office located at Aweil which will act as the local extension of the PMU. The field office will additionally coordinate field activities at the Wardit site, along with site offices at Aroyo and Akuem, both of which will be housed at the respective offices of the State Ministry of Agriculture, Forestry, Animal Resources, Fisheries and Cooperatives (SMAFARFC). The Aroyo, Chel and Akuem watershed management committees (WMC) will also utilize the site offices as their base for operations.

In accordance with Exchange of Letters with the Republic of South Sudan regarding the continuation of the UNIDO operations in the Republic of South Sudan (signed on 9 July 2011), The present project is governed by the provisions of the agreement between the Government of the Republic of South Sudan and UNIDO concluded on 9 July 2011.

The two WMC will be multiple-stakeholder platforms that provide a mechanism for watershed level coordination and collaboration between their members. These members will include representatives of community-based organizations (detailed below), private sector, traditional leaders and extension and development staff from the government and on-ground responsible parties. These watershed committees will ensure coordination of all project activities and sharing of knowledge and lessons learned between the stakeholders. Office bearers of the watershed committees will be responsible for the coordination and regular monitoring and reporting of project activities. CBOs represented in the WMC will specifically include groups of women, youth and vulnerable sections, farmer and pastoral associations and user groups such as water users groups, formed to participate in project implementation. Representatives from business associations and federation will also be part of these committees to ensure active participation of the private sector in its activities and to improve the access of primary beneficiaries to markets and value chains.



This structure will provide a streamlined framework for the participatory design and implementation of activities and their effective and efficient coordination, monitoring and reporting. It will enable an oversight and support to activities by government and project staff, while ensuring a high degree of autonomy and participation of communities.

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.

For UNIDO outputs, full or partial ownership of equipment/assets purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the government counterpart in consultation with UNIDO.

## **7. Consistency with National Priorities**

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

Revitalised Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS)

The R-ARCSS[1] was a milestone in the long running peace process in South Sudan. The agreement was signed on the 12<sup>th</sup> of September and was an outcome of negotiations lead by the Intergovernmental Authority on Development (IGAD). The R-ARCSS brought a formal end to the war since 2013, prescribed a power sharing agreement and provided a roadmap to peace and development. Key features of the agreement were the formation of the Revitalised Transitional Government of National Unity (RTGoNU), formed in February 2020. The agreement outlined a new power-sharing arrangement along with infrastructure to monitor and evaluate the ceasefire and implementation of the pre-transitional provisions. It provides procedures for accessing humanitarian assistants, management for the country?s resources[2]. In spite of delays and set-backs, the R-ARCSS provides an avenue for lasting political settlements between political actors. The proposed project is in close alignment with a number of provisions of the R-ARCSS. This includes:

- Provisions for representation and reservation for women in executive positions to the Council of Ministers and transitional justice institutions, the emphasis on gender and youth empowerment and position

against gender based violence and protection of the needs of women, girls and those of other groups with special needs. These are expected to provide policy support and impetus to the gender-responsive strategies proposed in the project.

- The provision to establish a Women Enterprise Development Fund for provision of subsidized credit for women-based enterprise development and capacity building of women entrepreneurs is closely aligned with the project strategy to support women in livelihood diversification and could provide formal mechanisms to access credit, funds and government subsidies for activities under Output 2.4.

South Sudan National Development Strategy 2018 and Revised National Development Strategy (SS-NDS)

The National Development Strategy of South Sudan[3] succeeded the South Sudan Development Plan in providing strategic guidance for national planning in the unique country context of South Sudan , revised in 2021 has the goal to consolidate peace, stabilize the economy and return to sustainable development. The project aligns and will contribute to four of its five objectives of 1) Strengthening institutions for transparent and inclusive governance; 2) Diversification of the economy; 3) Support to the social sector and protection to vulnerable populations and 4) Mainstreaming of gender and youth in development. The proposed project is also aligned with the first National Development Strategy (2018-2021):

- Enabling conditions and integration of displaced South Sudanese: The project, through component 2, will specifically involve internally displaced persons and other marginalized communities.

- Ensure secure access to adequate and nutritious food: Climate smart interventions in agro-pastoral landscapes are the core of the proposed project's strategy. These will directly contribute towards food security and climate resilient livelihoods of agro-pastoral communities.

Furthermore, the project is aligned with the communication strategy proposed under the SS-NDS wherein participatory processes are used to identify activities based on inputs of diverse stakeholders and the use of multiple modes of communication including print and electronic media. The project will also contribute towards strengthening coordination between government and citizens and ensure institutional and human resource development, which are strategic priority actions under the SS-NDS under the governance cluster. Under the economic cluster, the project will contribute towards the cluster goals of improving food security and livelihoods and the strengthening of economic development infrastructure by supporting construction of water harvesting and irrigation infrastructure as well as improving basic infrastructure for post-harvesting and storage of agricultural produce. Furthermore, the integration of environmental conservation measures and optimizing associated adaptation benefits are a key priority of the development strategy which resonate with the integrated watershed management and value chains development approach of the proposed project. Furthermore, climate resilience, together with gender and capacity development are key cross-cutting issues identified in the NDS to which the project is closely aligned.

Vision 2040

The South Sudan Vision 2040 provides the framework and strategic direction to the policy making process of the GOSS. The proposed LDCF project is aligned with a number of the strategies for the delivery of the vision including building of institutional capacities, promotion of gender equity and social change, increasing agricultural productivity and enhancing food security and to enhance disaster preparedness and management capabilities. The implementation arrangements of the project align with the implementation matrix of the document.

*National Adaptation Programmes of Action (NAPA) under UNFCCC*

The project is aligned with three of the five key thematic areas of the NAPA of South Sudan[4], developed [with support from the GEF](#).

? Environment: i) Promote agro-forestry practices to diversify land production systems and livelihood options. ii) Promote afforestation of degraded landscapes/watersheds using multi-use forest species to increase community safety-nets and diversify livelihoods. iii) Develop management plans to protect watersheds and improve future water availability. iv) Increase awareness of local communities on climate change and environmental protection. v) 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) Develop water harvesting structures, including dykes and water reservoirs to increase water availability. iii) 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 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. vi) Introduce conservation agriculture techniques to improve production. vii) Promote the implementation of projects identified in the CAMP that benefit vulnerable communities.

#### *Intended Nationally Determined Contributions (INDC) under UNFCCC*

GoSS submitted its first INDC to the UNFCCC in November 2015. . This was updated by the second Nationally Determined Contribution in 2021 to include the country's changing climate and its development considerations. The project builds on the following national adaptation objectives of the GoSS highlighted in the INDC[5]: i) Prioritize 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. In order to reduce vulnerabilities to climate reduced hazards, the project will: 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.

#### *National Biodiversity Strategy and Action Plan (NBSAP) under UNCBD*

The RSS NBSAP (2018-2027), published in 2018[6], and supported by the GEF, integrates biodiversity concerns into public, private, and community policies, plans, programs and projects. It fulfills the GoSS commitments to the UNCBD made in February 2014 and became the 94th party to global treaty on biodiversity and sustainable development. National Biodiversity Strategy and Action Plan (NBSAP) recognize the Strategic Plan of the CBD (2011-2020) and the Aichi Targets set in October 2010. The project is closely aligned with the two of the seven strategic objectives of the NBSLUP:

? Strengthen capacity for and conduct resource assessments, spatial, ecological and land use planning and benchmarking of the value of biodiversity in South Sudan to support sustainable use and management of biodiversity in South Sudan.

? Restore degraded ecosystems and promote access and benefit sharing of biodiversity and ecosystem services, including for protected areas and non-protected areas of South Sudan.

Other than these areas, the LDCF project will support many of the targets of the NBSAP and will collaborate and gain from relevant initiatives of the government in the area of biodiversity conservation.

#### *National Action Program (NAP) under UNCCD*

The first National Adaptation Plan (NAP) was submitted to the UNCCD in 2021 . It fulfills the mandate of the Government of South Sudan to strategies climate change adaptation and efforts to reduce community vulnerability and variability to climate change. The NAP embodies South Sudan's commitment to overcome these challenges and will guide efforts from the national level, down to communities and households. The NAP consists of three priority pillars: 1. Building climate resilient communities; 2. Building a climate resilient economy and development trajectory; and 3. Building a climate-resilient environment and ecosystems. The proposed project is closely aligned with all three of these pillars.

#### *Land Degradation Neutrality (LDN)*

The LDN targets set for the Republic of South Sudan were the augmentation of the LDN targets at national scale with the sub-national and hotspot level targets. The proposed time horizon for the attainment of LDN targets is the year 2030. This is so as to align it to the 2030 Agenda for Sustainable Development (SDG target 15.3).

The LDCF project is closely aligned with the national measures to achieve Land Degradation Neutrality (LDN) by 2030 as compared to 2015 with 10% net gain (improvement) in national territory. At the sub-national scale, the project is aligned with the target to achieve LDN in the semi-arid areas, northern borders of South Sudan, where this project sites are located. Among the specific as detailed in the final report on LDN Target Setting[7] the project will contribute to achieving the following targets set in the report:

- ? Improve productivity in 21,950.6 km<sup>2</sup> and 2,194.4 km<sup>2</sup> SOC stocks in lands of South Sudan by 2030 as compared to 2015.
- ? Rehabilitate 27,019.6 km<sup>2</sup> 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.

#### *National Communications (NC) under UNFCCC*

The Initial National Communication (INC) under the UNFCCC[8] was presented by the Government of South Sudan in 2018, marking an important step for South Sudan in meeting its international obligations and ensuring that climate change is considered in national policies, activities and development plans. The INC points out that even though South Sudan is a minor emitter of GHGs, the country is negatively impacted by climate change in nearly all its key economic sectors, such as agriculture, transport and forestry. The INC recognizes that besides conflict and insecurity, climate change is expected to be the country's single most important contributor to food insecurity. Chapter 3 of the INC summaries the measures to facilitate adequate adaptation to climate change.

The proposed LDCF project is aligned with the priority projects listed in in the Greater Bahr el Ghazal sorghum and cattle and the Western groundnuts, sesame and sorghum livelihood zones:

- ? In Water Resources Management: i) Introduction of climate change resilient, participatory and sustainable forest management; ii) Introduction and expansion of irrigated agriculture (for crop and livestock production); iii) Enhancing resilience to rainfall variability through rangeland rehabilitation and water resources management.
- ? In Agriculture: i) Promotion of climate-smart agricultural techniques to improve livelihoods and food security under changing climatic patterns; ii) Enhancing agricultural production under climate change conditions through infrastructural development and strengthening of agricultural extension services; iii) Development of the livestock sector through enhanced rangeland management, increased knowledge and improved animal health systems to reduce pastoral communities' vulnerability to climate change
- ? In Disaster Risk Reduction: i) Reforestation and tree planting to combat desertification; ii) Increasing knowledge on climate change and environmental issues through a national awareness-raising campaign.

? and in Policy and Institutional Frameworks: i) Building institutional arrangements for climate change adaptation at the state, county, payam and boma levels; ii) Integrating climate change adaptation and mitigation measures into sectoral policies; iii) Building or strengthening institutional arrangements to develop climate change resilience and iv) Support for an enabling policy environment on climate change.

#### *Intergovernmental Authority on Development*

The GoSS is also part of the Intergovernmental Authority on Development (IGAD) whose objectives are to achieve regional food security and encourage and assist efforts of member States to collectively combat drought and other natural and man-made disasters and their natural consequences. The LDCF project strategy is closely aligned with these objectives and guidelines.

#### The IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI)

The IDDRSI was formed in September 2011 in the wake of a drought that affected more than 13 million in the IGAD region. Its objectives are to address the catastrophic phenomenon of recurrent droughts and worsening environmental concerns in a sustainable manner by introducing innovative sustainable development strategies, policies, and programs at the Member States. IDDRSI helped finalize the South Sudan Country Programming Paper for ending drought emergencies in 2014 which identifies areas of intervention at national and regional level to sustainably build resilience to drought.

#### The IGAD Climate Prediction and Application Centre

ICPAC, based out of Nairobi, Kenya, provides South Sudan, and the region, access to technologies, training and to data for delivery of climate services. It is one of the principal sources of climate information that is used by South Sudan.????

#### *Strategies plans and conventions for which work is underway*

? The Ministry of Environmental and Forestry, in 2019, requested for support from the Climate Technology Centre and Network (CTCN) for [technical guidance and support](#) for conducting a Technology Needs Assessment.

? National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD is [under preparation](#) and is being supported by the GEF.

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[1] Inter-Governmental Authority for Development (IGAD), ?Revitalised Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS)?.

[2] Maphasa, Thulani. ?Finding Peace in Uncertain Times: South Sudan and the Revitalised Peace Process?, 2020.

[3] Government of the Republic of South Sudan. ?South Sudan National Development Strategy?. Juba: Government of the Republic of South Sudan, 2018. <http://www.mofep-grss.org/wp-content/uploads/2018/11/NDS-4-Print-Sept-5-2018.pdf>.

[4] United Nations Environment Programme and Ministry of Environment South Sudan, ?Republic of South Sudan.?

[5] Republic of South Sudan, ?Intended Nationally Determined Contribution.?

[6] Ministry of Environment and Forestry, The Republic of South Sudan, ?National Biodiversity Strategy and Action Plan (2018-2027).?

[7] UNCCD National Focal Point and LDN National Working Group, ?Republic of South Sudan Land Degradation Neutrality Target Setting Final Report?.

[8]Ministry of Environment and Forestry, Government of South Sudan, ?Republic of South Sudan Initial National Communication to the United Nations Framework Convention on Climate Change?.

## 8. Knowledge Management

**Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.**

Elaborate the ?Knowledge Management Approach? for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project?s overall impact. ?????

The GOSS has formal links with a number of international and regional agencies which facilitate the sharing of knowledge and experiences, and inform development policy and strategy (appendix 18). The project will leverage these linkages and establish formal mechanisms for sharing of data and information. The project will also explore membership to international and regional fora which will provide South Sudan access to best practices and an opportunity to share experiences with other countries. Among the agencies that will be approached include:

**Global Alliance for Climate Smart Agriculture:** GACSA is an inclusive, voluntary and action-oriented multi-stakeholder platform on Climate-Smart Agriculture (CSS).

**Africa Climate Week:** Shares ways for governments to implement the Paris Agreement in Africa.

**Community Based Adaptation Conference:** A practitioner-focused forum on climate adaptation, delivering dialogue and evidence to inform policy and action ? from the local to the global scale.

**UN South-South Galaxy knowledge sharing platform:** A knowledge hub on South-South and triangular cooperation enabling developing countries to effectively face their development challenges and harness opportunities to address them.

**PANORAMA:** An initiative to document and promote inspiring, replicable solutions across conservation and sustainable development topics, enabling cross-sectoral learning.

In addition, the project will formally liaise with existing technical groups that operate regionally or in a national context to facilitate sharing of technical information as well as field data and analysis. These include:

? IGAD Drought and Disaster Resilience and Sustainability Initiative (IDDRSI): Promote a mechanism for coordinated and harmonised implementation of development partner funded actions at the national and regional levels with the aim of sustainably enhancing disaster resilience of vulnerable communities especially those in the pastoral and agro-pastoral areas to end drought emergencies in the Horn of Africa, where the 8 member countries of IGAD are located.

? IGAD Climate Prediction and Application Centre (ICPAC) ? Climate monitoring / prediction: Provides medium range and extended climate forecasts that are required by IGAD, the National Meteorological and Hydrological Services (NMHSs) and other national, regional and international partners. The main priority

is two folds; improvement of computing capacity for ICPAC and Member Countries, human resources and development of new forecasting tools and products required for sector specific applications.

? IGAD Centre for Pastoral Areas and Livestock Development (ICPALD): Promoting, facilitating and advocating for a people centred gender responsive sustainable development in arid and semi-arid areas in the IGAD Region.

? South Sudan Meteorological Department (SSMD): SSMD became a member of the World Meteorological Organization (WMO) on December 14th, 2012 has been providing useful weather information for aeronautical. Strategically its role is key provider of weather and climate services to cross cutting sectors such as the Agriculture, Environment, Water Resources, Forestry, Livestock, Health, Energy and Tourism.

? FEWS NET ? FSL in relation to weather: Famine Early Warning Systems Network member of South Sudan multi stakeholder IPC Technical working Group and an active participant in National IPC Analysis workshop producing an a forward-looking food security analysis and IPC compatible mapping.

? South Sudan National Bureau of Statistics: Statistical and survey data for South Sudan especially on demographics, economic e.g. consumer price index etc.

? The CGIAR is the world's largest global agricultural innovation network and the World Agroforestry centre (ICRAF) is one of its centres which leverages agroforestry sciences for poverty reduction, increasing food and nutritional security, and improved natural resource systems and environmental services. The extensive practical experience of ICRAF in Africa, and their use of innovative and contemporary technologies for planning and monitoring can play an important role in guiding and supporting the project.

The project will adopt an open and standards compliant framework for knowledge generation, management and sharing. Mobile ICT and computer assisted surveys using frameworks such as the [Open Data Kit](#) will be used for monitoring and reporting project activities. This will lead to the generation of spatially explicit and participatory data and information on project activities. Action-research and citizen science-based approaches will be developed and implemented in the project, especially for collection of ground control points related to mapping of LULC, delineations and extraction of drainage patterns. CBOs and stakeholders will regularly engage in vetting and validation of field information, monitoring and reporting on activities. All data collected by the project will be made available on open-data sharing platforms.

The project will ensure regular exchange of ideas and experiences with ongoing initiatives throughout its life cycle. Collaborations with other agencies, including those generating and utilizing geo-spatial information will be formalized during the inception phase of the project. This will ensure scientific protocols and standards are followed during collection of data and contribute to the generation of on-ground information from project sites. Partnerships will also be sought to standardize monitoring systems for project activities and their impacts so they may contribute to the national data gathering process which is crucial to inform ongoing relief and emergency response operations.

The project envisages the collection and analysis of multidisciplinary data through field based rapid appraisals and participatory research methods. These will focus on livelihood analysis and vulnerabilities, particularly of women and marginal groups. Agricultural and engineering surveys of farmlands and micro-watersheds will be part of the planning process for both farm based and for watershed scale interventions. The project will engage subject experts to collect and collate available information and produce materials for capacity building both for trainers and for CBOs. Existing materials from other projects will be enhanced and adapted and translated for use by rural communities. These outputs will be shared under appropriate open source licenses.

Knowledge sharing events will be organized at the county, state and at national levels. The project will organize experience sharing and training events within beneficiary groups and sites. Stakeholders and representatives will be facilitated to participate in regional and international events to draw from and to share experiences and lessons from relevant projects and activities.

The project approaches knowledge management as a cross cutting element across all its components. The inception phase (Component 1) will involve extensive site-based studies that build on the feasibility study (Annex 13) by including bio-physical surveys and participatory appraisals along with a documentation of traditional knowledge and practices. Component 2 and 3 will identify provide greater granularity to these assessments by collecting details of individual households that cover both socioeconomic vulnerability as well as resource dependence to ensure the project reaches those most in need. An innovative, participatory and citizen science approach will be used to monitor and measure key impacts of project activities on socioeconomic conditions and to collect data such as crop condition (disease and water stress) and moisture levels (Activity 2.4.3) as well as livestock disease surveillance, drought stress in landscapes and status of water bodies (Activity 2.2.5). This information will be relayed to the PMU and regularly analyzed to produce spatially explicit status reports and to highlight successes as well as setbacks that will be shared regularly with watershed committees and project staff. Mobile ICT tools such as the Open Data Kit will be combined with GIS and drone technologies to develop a cost effective yet sophisticated monitoring framework. All information collected during the project will need to be vetted and validated by community representatives. This will ensure that communities remain informed about the status of the project and have an opportunity to weigh in and share their insights and opinions.

This process of regular monitoring and feedback will ensure lessons learned and good practices are recorded and disseminated in time for adaptive management. At the national and global level, results will be disseminated to targeted audiences through relevant information sharing fora and networks. The project will contribute to scientific and policy-based networks by enabling participation of stakeholders and beneficiaries. The project will build capacities of local institutions at the county, payam and boma level and of communities themselves by strengthening and establishing CBOs through hands on training and investments in project activities. External experts hired under the project will be expected to transfer their knowledge and skills to local agencies and provide sufficient documentation for replicating and scaling up new technologies and techniques. Bulk of the training proposed will involve hands on exercises and demonstrations. A training of trainers approach will be used to pass on skills and capacities to communities and extension staff deputed to the project.

Lessons learned, data and information collected during the project will be documented and archived using public and open standards, making it available for further analysis and evaluation by government and

research agencies. Stakeholders and project staff will participate in local, national and international events to share experiences from the project, to interact and establish cross learning mechanisms and networks with similar initiatives during international conferences, national knowledge sharing events and local - county level knowledge sharing events (Activity 1.1.5). Other project teams and NGOs engaged in similar work will be invited to these validation and knowledge sharing events to ensure cross learning and collaboration.

Annual budgets and deliverables for knowledge management to be undertaken by the project are presented below. This includes allocations towards generation of information (surveys, reviews, studies), their dissemination through publication and other means and allocations towards training programmes as well as knowledge sharing events. The largest allocations for knowledge management are for the first year of the project - during which most of the information required for detailed plans will be gathered and capacities of the implementing teams will be enhanced. Much of the policy level work will be done in the first year as well. The first column is the component, output and activity number, the latter described in the ProDoc.

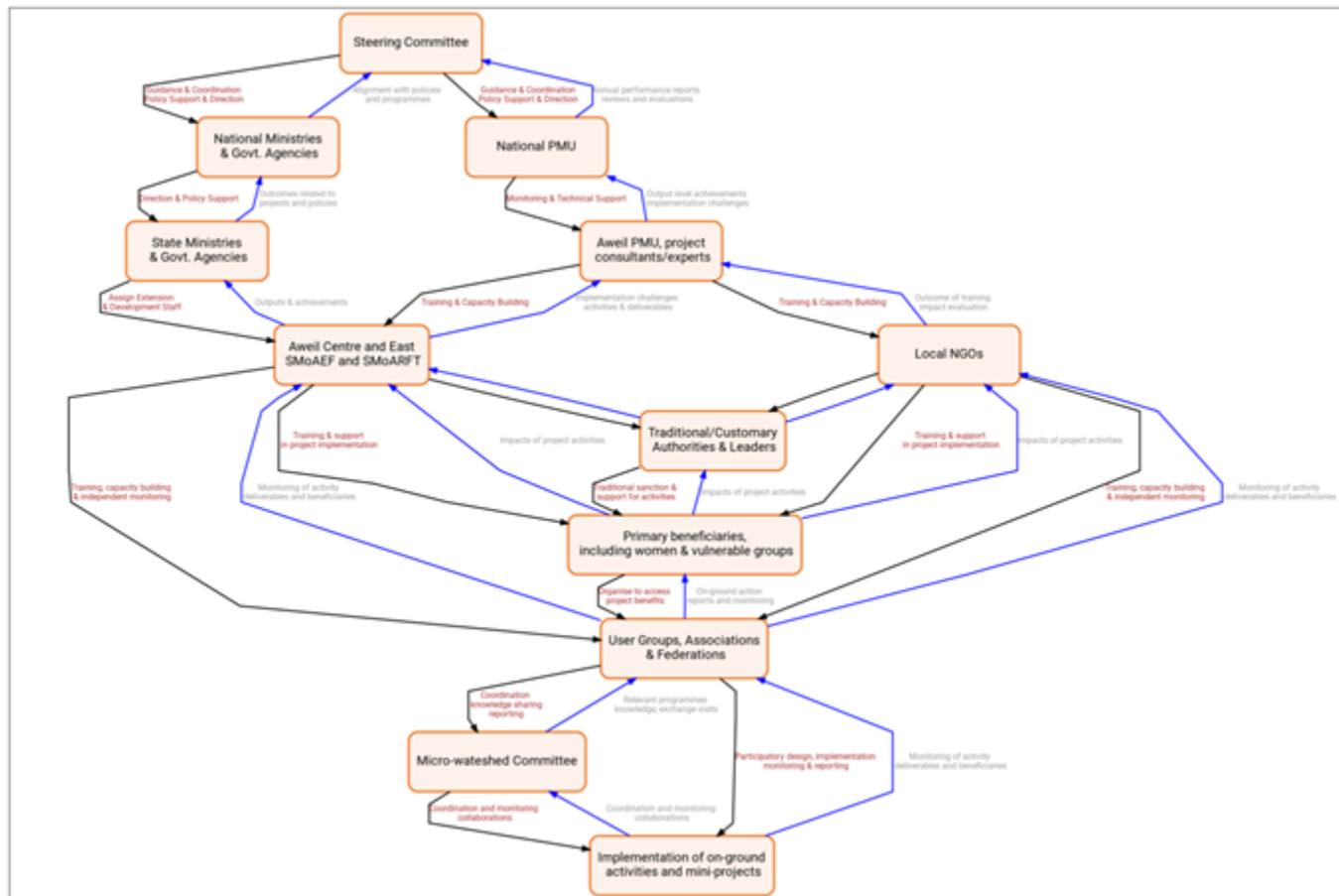


Figure 4. A diagrammatic representation of the flow of information between different actors in the project.



1.1.3	Developing monitoring and reporting site specific social and environmental safeguards including environmental impact assessments where needed.	42,470	22,235	0	0	22,235	86,940
	Developing, monitoring and reporting site specific gender and community engagement strategies and safeguards	29,250	0	0	0	0	29,250
	Field surveys, including mapping, measurements of potential sites and collection of soil samples.	3,960	0	0	0	0	3,960
	Participatory appraisals and mapping with communities	3,960	0	0	0	0	3,960
	Training extension staff for integration of climate information and early warnings	5,660	0	3,260	0	0	8,920
	Training of field staff for surveying and biophysical assessments	20,562	0	0	0	0	20,562
	Validating intervention strategies with communities.	8,760	0	0	0	0	8,760
1.1.4	Identifying appropriate agriculture, animal husbandry, income and livelihood diversification options.	14,730	0	0	0	0	14,730
	Preparing training materials for trainers for agriculture, animal husbandry, income and livelihood diversification.	6,000	0	0	0	0	6,000
	Translation of training materials for print and podcast.	7,000	0	0	0	0	7,000

1.1.5	Establishing partnerships for knowledge sharing with relevant fora	6,420	6,420	6,420	6,420	6,420	32,100
	Organising local knowledge sharing events	3,852	3,852	3,852	3,852	3,852	19,260
	Participation in national, regional and international knowledge sharing events	24,140	24,140	24,140	24,140	24,140	120,700
1.2.1	Conduct rapid market analysis to identify the potential commodities	17,568	0	0	0	0	17,568
	Development of market information system with respect to price, quantity, quality and supplying timings for the targeted value chains	2,200	0	0	0	0	2,200
	Organised stakeholder workshop to disseminate the finding of the market and Value chain and integrate recommendations plans	3,000	0	0	0	0	3,000
	Potential commodities identified for addition and value chain development	288	0	0	0	0	288
	Stakeholder workshop for the confirmation of upgrading strategies and list of actions for each commodity finalised	2,262	0	0	0	0	2,262
	Undertake a value chain Analysis and Mapping of non- agro and agro-based commodities	14,208	0	0	0	0	14,208
	Workshops on climate-proofing agri-business commodities value chain with value chain actors	5,615	5,615	5,615	5,615	5,615	28,075

1.2.2	Conduct Stakeholder Value chain support policy dialogue and use findings to prepare climate adaptation-relevant policy briefs on business models focusing on post-harvest and food processing.	4,560	4,560	4,560	4,560	4,560	22,800
	Developing Specific training materials for each of the Five (5) identify Value chain commodities for food processing and agribusiness value chain partners? capacities and initiatives for financing to climate resilient infrastructure.	13,920	0	0	0	0	13,920
1.2.3	Development and dissemination of Information, Education and Communication (IEC) and value chain extension materials (Charts, videos, flyers etc.)	16,620	3,645	1,245	0	0	21,510
	Developing relevant training materials on introducing climate adaptation solutions in value chain incl. post-harvest producer led connectivity and alliances among the stakeholders.	22,220	0	0	0	0	22,220
	Organize trainings and workshops to raise awareness among civil (community and market actors), private and public sector actors on environmentally safe and climate friendly production food systems and value-addition practices	4,792	4,792	4,792	4,792	4,792	23,960

	Organize trainings to raise awareness among civil (community and market actors), private and public sector actors on environmentally safe and climate friendly production and value-addition practices	4,865	4,865	4,865	4,865	4,865	24,325
	Training of trainers incl. relevant public-sector officials on good practices in climate resilient agribusiness value-chain governance and deliver replicate trainings on business planning to support food processing value chains among community groups.	4,415	4,415	4,415	4,415	4,415	22,075
	Undertake national and sub national dialogue on incorporating strategies for climate-friendly agribusiness value chain standards into the South Sudan Industrial Policy Framework Draft, 2018	34,690	0	0	0	0	34,690
1.3.1	Preparing a strategy and framework for capacity enhancement of local partners.	500	0	0	0	0	500
1.3.2	Preparing a comprehensive social mobilization strategy and action plan	500	0	0	0	0	500
1.3.4	Dissemination of materials to extension services and farmers	7,000	7,000	7,000	7,000	7,000	35,000
	Preparing audio recordings and audio-visual versions of the guides in Dinka and Arabic.	6,000	0	0	0	0	6,000

	Repackaging materials for print, social media and web-based distribution.	6,000	0	0	0	0	6,000
	Translation of packages into local languages (Dinka and Arabic).	6,000	0	0	0	0	6,000
1.4.1	Identifying extension workers to be trained in CSA	330	330	330	330	330	1,650
	Training of extension workers for CSA	3,993	3,993	3,993	3,993	3,993	19,965
1.4.2	Identifying extension staff to be trained as veterinary and community animal health workers	330	330	330	330	330	1,650
	Training and refresher courses for veterinary extension and community animal health workers	3,993	3,993	3,993	3,993	3,993	19,965
1.4.3	Identification of watershed restoration technical leads from within extension workers.	330	330	330	330	330	1,650
	Training and refresher courses for watershed restoration technical leads	3,993	3,993	3,993	3,993	3,993	19,965
1.4.4	Identifying extension staff for training in livelihood and income diversification	330	330	330	330	330	1,650
	Training and refresher courses for extension workers and line staff held	3,993	3,993	3,993	3,993	3,993	19,965
1.4.5	Identification of community mobilisers from within extension workers	330	330	330	330	330	1,650
	Training and refresher courses for community mobilisers	4,233	4,233	4,233	4,233	4,233	21,165

1.4.6	Training national focal points on watershed approaches for CCA	3,120	3,120	3,120	3,120	3,120	15,600
2.1.1	Conducting study tours between progressive farmers, extension staff and agricultural experts including site visits.	9,630	9,630	9,630	9,630	9,630	48,150
	CTA: DSA for 45 days (1 1/2 months) each year for years 2 to 4	0	8,640	8,640	8,640	8,640	34,560
	CTA: International travel	0	6,000	6,000	6,000	6,000	24,000
	CTA: Programme and technical support and training on CSA among farmers and pastoralists, rangeland/pastureland management and restoration, agro-forestry, assisted natural regeneration and SWC.	0	48,750	48,750	48,750	48,750	195,000
	Establishing demonstration sites on progressive farmer fields	0	60,330	60,330	60,330	60,330	241,320
	International Safeguards expert. Developing monitoring and reporting site specific interventions strategies including environmental impact assessments where needed.	0	2,000	2,000	2,000	2,000	8,000
	International Safeguards expert. Developing, monitoring and reporting site specific interventions strategies including environmental impact assessments where needed.	0	16,840	16,840	16,840	16,840	67,360
	Organizing visits and exchange events between farmers.	0	14,880	14,880	14,880	14,880	59,520

2.1.2	Training and capacity building of nursery groups.	9,630	9,630	9,630	9,630	9,630	48,150
2.1.3	Training and capacity building of progressive pastoralists through excursions and exchange visits	9,630	9,630	9,630	9,630	9,630	48,150
	Training cum demonstration camps for pastoralists	78,330	78,330	78,330	78,330	0	313,320
2.2.1	Training representatives of CBOs in leadership and organisational functions and procedures.	0	9,465	9,465	9,465	9,465	37,860
	Farmer field schools held in progressive farmer owned plots	0	8,118	8,118	8,118	8,118	32,472
	Training materials disseminated.	0	7,600	7,600	7,600	7,600	30,400
2.2.3	Annual pastoral field schools held in progressive pastoralist camps and settlements.	0	7,398	7,398	7,398	7,398	29,592
	Training materials disseminated.	0	7,600	7,600	7,600	7,600	30,400
2.2.5	Identifying and training key informers within pastoral groups.	9,230	9,230	9,230	9,230	9,230	46,150
	Training of project staff and extension services in collection and transmission of data to PMU	6,750	6,750	6,750	6,750	6,750	33,750
2.3.3	Conduct training on financial literacy and business management skills incl. private sector financing and public supported investments.	13,055	13,055	13,055	13,055	13,055	65,275

	Conduct training for at least three post-harvest processing unit	8,638	8,638	0	0	0	17,276
	Develop and promote post-harvest models and initiatives for financing climate-resilient infrastructure.	20,380	20,380	20,380	20,380	20,380	101,900
	Train eight (8) value addition post harvesting groups on post-harvest and food crop storage and supply schemes using Purdue Improved Crop Storage (PICS)	7,370	7,370	7,370	7,370	7,370	36,850
	Organize producer alliances for scale-up of investments by value chain stakeholder institutions, producers including cooperatives and associations, non-state agencies engaged in food processing initiatives	10,620	10,620	10,620	10,620	10,620	53,100
	Training of Trainers (TOT) on post-harvest management and storage of food grains	22,030	22,030	22,030	22,030	22,030	110,150
	Training on business management, for a cadre/champion managers of agro-processing units, farmers union, representatives from Chamber of commerce and state government officials	16,810	16,810	16,810	16,810	16,810	84,050
2.4.1	Household surveys to assess constraints and opportunities for income generation	4,710	0	0	0	0	4,710
	Participatory planning to and implement livelihood diversification activities by relevant CBOs	1,386	1,386	1,386	1,386	1,386	6,930

2.4.2	Training and capacity enhancement of pond user and fishing groups	15,630	15,630	15,630	15,630	15,630	78,150
2.4.3	Training of focal points and volunteers for recording monitoring data	9,230	9,230	9,230	9,230	9,230	46,150
	Training of project staff and extension services in collection and transmission of data to PMU	7,750	7,750	7,750	7,750	7,750	38,750
3.1.1	CTA: DSA for 45 days (1 1/2 months) each year	0	8,640	8,640	8,640	8,640	34,560
	CTA: Programme and technical support and training on CSA among farmers and pastoralists, rangeland/pastureland management and restoration, agro-forestry, assisted natural regeneration and SWC.	0	48,750	48,750	48,750	48,750	195,000
	Resource use mapping of watershed areas and resource use patterns of settlements in selected sites building on activity 1.1.4.	32,640	0	0	0	0	32,640
3.1.2	Undertaking comprehensive surveys of soil and water conservation sites.	29,620	0	0	0	0	29,620
	Validating technical drawings and plans and commitments with the watershed committee.	22,560	0	0	0	0	22,560
3.1.3	Undertaking comprehensive surveys of sites identified for flood control.	13,510	0	0	0	0	13,510

	Validating technical drawings and plans and commitments of groups with the watershed committees.	22,560	0	0	0	0	22,560
3.1.4	Undertaking comprehensive surveys of sites identified for water points and pumping systems.	16,240	0	0	0	0	16,240
	Validating technical drawings and plans with the watershed committees.	22,560	0	0	0	0	22,560
3.4.2	Training of water user groups for administration and O&M	0	19,425	19,425	19,425	19,425	77,700
M&E	Designing a mobile ICT based system for recording and communicating records maintained by focal points in farming and pastoral communities.	7,440	4,800	4,800	4,800	4,800	26,640
	Designing a mobile ICT based system for recording and communicating records maintained by focal points in pastoral communities.	660	0	0	0	0	660
	Designing a mobile ICT based system for recording and communicating records maintained by focal points.	6,000	0	0	0	0	6,000
	Identifying easy to measure indicators of crop health and soil moisture conditions.	11,810	0	0	0	0	11,810
	Identifying easy to measure indicators of livestock health and landscape condition.	11,810	0	0	0	0	11,810

Identifying easy to measure, gender-responsive quantitative socioeconomic vulnerability indicators.	11,810	0	0	0	0	11,810
Total Result	984,831	652,049	622,036	617,531	561,436	3,437,883

## 9. Monitoring and Evaluation

### Describe the budgeted M and E plan

The M&E plan is presented in section VI and Annex 5 of the ProDoc. A summary is provided in the table below.

<b>Monitoring and Evaluation Plan and Budget:</b>		
<b>GEF M&amp;E requirements</b>	<b>Indicative costs (US\$)</b>	<b>Time frame</b>
Inception Workshop	10,000	Within 60 days of CEO endorsement of this project.
Inception Report	None	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	10,000	Throughout project period. More intensively during inception phase (first year) and before the mid-term and terminal evaluations.
Monitoring of Social and Environmental Safeguards	86,940	Throughout the project period
Monitoring of Gender and Community Engagement protocols and safeguards	52,030	Throughout project period
Project Board/Steering Committee Meetings	10,000	Annually
Supervision missions	None	Annually
Oversight missions	12,740	Troubleshooting as needed
Local consultants for Mid-term Review	12,000	December 2024
Independent Mid-term Review (MTR) and management response	30,000	December 2024
Local consultant for Terminal Evaluation	12,000	December 2026

Independent Terminal Evaluation (TE) and management response	31,200	December 2026
Translation of MTR and TE reports into English	None	
Total	266,910	

As per GEF guidance, the Monitoring and Evaluation Budget is 2.8% of the total GEF project budget (9,384,703 USD) (below the maximum of 3% allowed for GEF project grants between USD 5?10 million).

## 10. Benefits

**Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?**

At the national level, this project will ensure the mainstreaming of climate change adaptation into policies dealing with agriculture and livestock research and extension, and, the industrial policy framework of South Sudan. The project will undertake comprehensive reviews of existing policies and frameworks and, by facilitating discussion among relevant stakeholders, arrive at specific recommendations for each of these. This will ensure the three national policies and framework are cognizant of the likely impacts of climate change and incorporate relevant strategies and approaches to adapt and mitigate its impacts resulting in socioeconomic benefits over a long term.

The key socioeconomic impact of the project will be at the local level where it will directly benefit about 75,000 persons (37,515 men and 41,235 women). These direct beneficiaries will be from the two counties of Aweil Centre and Aweil East in the Northern Bahr el Ghazal (NBG) state in the north west of South Sudan. The beneficiaries are largely from subsistence rural communities with agropastoral livelihoods. Fisheries and harvesting of food from forests contribute significantly to food security of these communities during time of stress. In NBG about 85% of the households cultivate land and 65% own livestock. Fishing is the primary source of livelihood for 12-15% of the population.

The project interventions will enhance agriculture both among cereal and vegetable farmers in about 300ha. Climate smart agricultural interventions and training will be delivered through hands on, farmer-field approaches coupled with improved and new small-scale irrigation facilities, strategically located to maximize their impact. Livestock owners, including migratory and nomadic pastoral groups, will be supported through improved veterinary services and provision of water. Water bodies will be de-silted and drainage networks will be rehabilitated to reduce impact of floods while enhancing the period of water storage. This will be coupled with improved management of ponds for fisheries and better equipment for catching fish.

Progressive farmers and pastoralists will be identified and supported to act as mentors and facilitators of appropriate climate smart technologies and varieties, and to demonstrate best practices on their own holdings. Development volunteers and community animal health workers will support agriculture and

veterinary extension and outreach and will participate in monitoring and reporting on activities and their impact. This is expected to create a pool of experts within the communities who are formally linked with government extension staff and other relevant projects and NGOs in the region. In all 9,430 persons from local communities will receive training (6,130 men and 3,300 women). 2,211 business owners and entrepreneurs (1,436 male, 775 female) will additionally benefit from the private sector engagement and capacity building activities. This training and capacity building will be supplemented with provision of inputs and initial capital and materials and is expected to result in long term benefits to the communities.

About 15,000ha of catchment areas will be restored through appropriate soil and water conservation and water harvesting measures. Afforestation and reseeded of rangelands will result in increased biomass production. Community based management measures for forests and rangelands will be strengthened and enhanced to ensure rehabilitation and restoration of ecosystem function as a long-term resilience measure. The increased production of biomass and improved provision of ecosystem services such as water, fuel, fodder, timber and non-timber forest produce will improve livelihoods and incomes of families dependent on these natural resources.

On ground project activities will be implemented via community-based organizations such as water user groups, farmer and pastoral federations and unions of entrepreneurs and business people creating social capital within communities. Specific attention will be given to formation and/or strengthening of women and vulnerable groups to participate in the project. All these groups will receive support to ensure they are equipped to design, implement and monitor project activities. These groups will also take up operation and maintenance of assets created by the project, for which they will collect a user fee.

774 extension staff (500 men, 274 women) from the SMAFARFC, local NGOs and boma volunteers will receive training and their capacities will be enhanced to support farmers, pastoral groups and fisher groups in project implementation. Training will include gender sensitization workshops and workshops on community mobilization and organizational support in addition to technical elements of climate smart agriculture, community based natural resource management and rangeland and forest management and restoration. This is expected to result in long term support to local communities and replication of lessons learned in neighboring payams, bomas and counties.

These benefits translate into supporting the following adaptation benefits of the LDCF:

LDCF Objective 1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation and Outcome 1.1: Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience.

1 Physical and natural assets made more resilient to climate variability and change: 15,000 ha of catchment under a variety of land-uses (see Annex 13 section I-4 for statistics) will be restored and managed through a variety of interventions including measures for soil and water conservation, water harvesting, reforestation and climate-smart agriculture interventions that restore and rehabilitate soils and productivity.

2 Livelihoods and sources of income of vulnerable populations diversified and strengthened: Populations engaged in agriculture, pastoralism and fisheries (75,000 persons, 37,515 men and 412,350 women)

women) will be supported through enhanced access to markets, interventions to support agro-processing and diversification of income through introduction and improved practices for beekeeping among traditional beekeepers.

3 Vulnerable natural ecosystems strengthened in response to climate change impacts: The project will restore and protect grasslands and forests in the catchment areas covering 15,000ha.

LDCF Objective 2: Mainstream climate change adaptation and resilience for systemic impact and Outcome 2.1: Strengthened cross-sectoral mechanisms to mainstream climate adaptation and resilience

1 Cross-sectoral policies and plans incorporate adaptation considerations: Climate change will be mainstreamed into three national policies covering the agriculture and industrial sector, namely: 1) National Agriculture and Livestock Extension Policy (NALEP). 2) The National Agricultural and Livestock Research Policy and 3) Comprehensive Industrial Policy Framework. Furthermore, the Northern Bahr el Ghazal Policy for Community Based Forest and Natural Resources Management will be developed for consideration of the State government.

2 Cross-sectoral institutional partnerships established or expanded: The project will bring together seven ministries and the prominent research institute in South Sudan to ensure cross learning and collaboration. These are the Ministry of Environment and Forestry, Agriculture and Food Security, Livestock and Fisheries, Gender Child and Social Welfare, Technology and Industries, Water Resources and Irrigation and Humanitarian Aid and Disaster Management with the School of Natural Resources and Environmental Studies ? University of Juba.

3 Systems and frameworks established for continuous monitoring, reporting and review of adaptation: The project will develop and adopt a sophisticated yet low cost and efficient system for monitoring and reporting adaptation activities and their impacts that leverages IoT technologies and mobile ICT. This system will be based on geospatial, computer assisted, participatory surveying and monitoring.

4 Climate risk and vulnerability assessments conducted: The inception phase of the project will involve exhaustive vulnerability and capacity needs assessments of the selected sites and target communities and institutions.

Outcome 2.3: Institutional and human capacities strengthened to identify and implement adaptation measures

1 Number of people trained regarding climate change impacts and appropriate adaptation responses. A total of 12,665 persons are expected to be trained (8,226 men, 4439 female). This includes 250 people at line ministries (160 male, 90 female); 9,430 Community /association members (6,130 male, 3,300 female); 774 extension service officers (500 male, 274 female) and 2,211 small private business owners (1,436 male, 775 female).

## 11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification \*

PIF	CEO Endorsement/Approval	MTR	TE
<b>High or Substantial</b>			

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

<p><b>QUESTION 2:</b> What are the Potential Social and Environmental Risks?</p> <p><i>Note: Complete SESP Attachment 1 before responding to Question 2.</i></p>	<p><b>QUESTION 3:</b> What is the level of significance of the potential social and environmental risks?</p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 5</i></p>	<p><b>QUESTION 6:</b> Describe the assessment and management measures for each risk rated Moderate, Substantial or High</p>
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<i>Risk Description (broken down by event, cause, impact)</i>	<i>Impact and Likelihood (1-5)</i>	<i>Significance (Low, Moderate Substantial, High)</i>	<i>Comments (optional)</i>	<i>Description of assessment and management measures for risks rated as Moderate, Substantial or High</i>
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<p><b>Risk 1</b></p> <p><b>The use by the project of degraded rangelands or low-productivity agricultural areas for more productive land-uses and for watershed management may reduce open access pastures and fields in project areas, and hence restrict availability, quality of and access to resources or basic services, in particular to vulnerable individuals or groups. This restrictions could potentially result in economic displacement.</b></p> <p><i>Human Rights</i></p> <p><i>P1, P3, P4, P5, P6</i></p> <p><i>Accountability</i></p> <p><i>P13</i></p> <p><i>Displacement and Resettlement</i></p> <p><i>5.1, 5.2, 5.3, 5.4</i></p> <p><i>Indigenous peoples</i></p> <p><i>6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.9</i></p>	<p>I = 4</p> <p>L = 2</p>	<p>Moderate</p>	<p>Component 2 involves establishing demonstration sites for climate smart agricultural practices, plant nurseries, farmers and pastoral fields schools, as well as modifying land uses at the small-scale. This may, if not led through full and inclusive consultations with all groups, lead to restrictions of availability and access to resources and basic services. Economic displacement could be an indirect consequence of such restrictions (e.g. due to the loss of assets or temporary access to grazing areas due to land acquisition or access restrictions). The volatile security situations and uncertainties around the peace process require additional consideration during site selection to limit this risk. In South Sudan, development projects have in the past year entailed evictions and were identified as one of the cause of internal displacement. Although not yet a large-scale phenomenon, eviction-related displacement were observed particularly in urban areas, including in Aweil<sup>11</sup>. No</p>	<p>?</p> <p>The Environmental and Social Management Framework (ESMF) outlines all steps required in order to ensure full compliance with SES requirement during project implementation. In accordance with the ESMF one environmental and social impact assessment (ESIA) and one social and environmental strategic assessment (SESA) will be carried out at project inception to assess this and all other environmental and social risks. The ESIA will be immediately followed by an ESMP including targeted management plans. The ESIA process will draw upon the ESMF to assess the associated impacts, and to inform the specific management measures outlined in the ensuing Management Plans.</p> <p>?</p> <p>Given that the project?s downstream interventions (and notably the project?s support to agricultural and pasture activities) are yet to be specified on the basis of selection criteria of projects, the potential direct impacts are yet to be fully assessed and can?t be identified with a reasonable degree of certainty. Further screening will be needed as the projects are selected, through this SESP. The application of standard good practice such as Free Prior Informed Consent and participatory approaches when choosing project sites and discussing specific agricultural practices will be implemented. The SESP will be subject to further consultations on the field after the activities have been specified, leading to a potential update in the first six months of the project.</p> <p>?</p> <p>Baselines (Activity 1.1.2: Building baselines of climatic, socioeconomic, ecological, edaphic and topographical characteristics of the project sites to inform site prioritization) will be conducted and disclosed (with at least summary report in Arabic) and made available in an accessible location in the first six months of the project, before any field activity starts.</p> <p>?</p> <p>The SESP conclusion (list of risks, relevant standards) is integrated into the ESMF and will serve as a basis for the SESA and ESIA. The ESMF assessment will be</p>
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<b>Risk 2</b>	I = 4	Substantial	<p>While the project's locations were chosen carefully and are not currently areas of conflict, the security situation in South Sudan is volatile. Despite progress made by the new Government of South Sudan to create a society where respect for human rights and democratic principles is ensured, challenges remain after a legacy of prolonged civil war and severe under-development. The only recent Peace agreement, added to an inadequate legal framework, with many international human rights instruments yet to be ratified, makes it difficult for State agents to be held accountable and impunity is endemic. Hence, if social tensions were to arise in the localities of the project, the support to agricultural and pasture activities could be a fuel for conflict, especially due to the presence of indigenous communities with poorly defined land boundaries.</p>	<p>? In order to avoid and manage conflicts, the Stakeholder Engagement Plan (SEP) has been designed and made available in English (as well as in Arabic and Dinka) to all stakeholders before the activities start. It specifies the need for a full disclosure of information and providing for meaningful participation of stakeholders during the planning and implementation of site-specific activities including as part of site-specific Environmental and Social screenings and assessments.</p> <p>? A project-level Grievance Redress Mechanism will promote awareness of the grievance mechanism which provides a means for redress of aggrieved individuals or groups.</p> <p>? A conflict analysis will be conducted together with the ESIA in order to detect (1) potential existing tensions and (2) existing conflict resolution mechanisms, with a particular emphasis on the livelihoods of Indigenous Peoples and Internally Displaced Peoples.</p> <p>? The Livelihood Action Plan will be conducted on a participatory basis, through the representative management structures set up by the project to manage interventions, both in farm lands and in pasture lands. All communities livelihoods, including nomadic pastoralists and IDPs, will be represented.</p> <p>? The project will set up representative management structures to manage interventions, both in farm lands and in pasture lands.</p>
<p><b>The project's support to agricultural and pasture activities could lead to adverse impact on the existing social tensions in the area ? but not present in the selected localities - between land users, including Internally Displaced Persons. These tensions could also increase violent altercations which have arisen over the last years, and it may affect the repartition of benefits among beneficiaries, to the detriment of women and indigenous peoples.</b></p>	L = 4			
<p><i>Human rights</i> <i>P1, P4, P5, P6, P7</i></p>				
<p><i>Accountability</i> <i>P13, P14</i></p>				
<p><i>Displacement and Resettlement</i> <i>5.2, 5.4</i></p>				
			<p>Aweil is located outside of the area where most violence outbreaks are currently happening. In the first half of 2020, between 7 and 15</p>	

<p><b>Risk 3</b></p> <p><b>The duty bearers of this project may have low capacities to (1) measure and manage the impact of climate change on agriculture, (2) to engage with all members of the communities in depth, and (3) to facilitate and monitor a grievance redress mechanism (GRM)</b></p>	<p>I = 4</p> <p>L = 4</p>	<p>Substantial</p>	<p>Introducing new adaptation technologies in which there is no prior experience will be particularly challenging. There are several human resources constraints at the grassroots level and among communities and their representatives which could adversely affect implementation, administration and reporting. This means that the project could suffer from a) Poor coordination of on-ground activities which may result in delays and inefficiencies in time-bound interventions (e.g. provision of improved seeds/livestock drugs ahead of the growing season); b) inadequate mobilization and awareness generation leading to low participation, particularly of women and more vulnerable groups and c) weak training and extension services leading to low adoption of adaptation technologies and practices.</p>	<p>? In order to reinforce the capacities of the duty-bearers to conduct the project effectively and meet their obligations, all outcomes include targeted capacity-building. These activities will be completed by specific capacity-building activities on Safeguards Management, Gender equity, FPIC implementation and Stakeholder Engagement, as planned respectively in the ESMF, the GAP and the SEP.</p> <p>? Alignment of national priorities and coordination of agricultural policy between the national and the local level will be key. The project steering committee, comprised of UNDP, the MoEF and representatives of local communities, will be in charge of ensuring this alignment. It is key that that prefectures / local authorities are empowered in safeguards management, as planned in the ESMF, to make sure policies are adequately applied.</p> <p>? UNDP will appoint a full time project management team comprising of professionals with expertise in administrative, social as well as technical aspects of the project. This will include a project manager, but UNDP CO will also recruit a part-time (at least 30%) Gender expert to support the PMU. Thematic experts will provide technical inputs and support the project management unit in building capacities of agencies and individuals tasked with project implementation. The support of consultants working on monitoring and evaluation and safeguards will be needed, but the CO will prioritize the integration of competencies within the PMU and/or at the CO level in order to ensure continuous quality of support. Project staff, particularly at the Payam and Boma levels will be supported on a continual basis through training and refresher courses, and hand-holding during the initial part of the project.</p>
<p><i>Human Rights</i></p> <p>P7</p>			<p>Administrative boundaries are being reorganized which is causing confusion on roles and jurisdictions of authorities.</p>	<p>? These measures will ensure that technical staff and implementing partners are well equipped to effectively and efficiently discharge their duties and that project management and administration are handled professionally and meet both</p>

<p><b>Risk 4</b></p> <p><b>As women are traditionally excluded from decision-making processes, they could be excluded from the support planned for farmers and farmers organizations as well as in the national and regional institutions. This could inadvertently reproduce existing discriminations, including in the design of agriculture and natural resources management policies, and even gender-based violence against women in project implementation.</b></p> <p><i>Gender Equality and Women's Empowerment</i></p> <p><i>P8, P10, P11</i></p>	<p>I = 4</p> <p>L = 4</p>	<p>Substantial</p>	<p>The society of South Sudan is a patriarchal one that keeps strict gender norms and rigid gender roles. Disputes on marriage, property, and inheritance are often judged according to customary laws at the expense of women's rights. Harmonization of customary laws with statutory ones is a major issue. Women's low status and child marriages cause the high Maternal Mortality Rate in South Sudan, which is one of the highest in the world. Moreover, a lack of medical personnel and facilities, and gender-based discrimination limit women's access to medical treatment.</p> <p>Literacy rates of South Sudan are extremely low. The male literacy rate in 2010 was 40% and the female literacy rate was 16%. Although improvements are being made, the progress is slow. The enrolment rates for primary and secondary schools are also low. The enrolment rates for girls are lower than those for boys at all grades. Accounting for 60.2% of agricultural labour, women play an important role, but</p>	<p>? Gender aspects are integrated in all outcomes of the project document and supported by the Gender analysis and action plan. The gender analysis develops a comprehensive situational analysis or increase the project's understanding of gender issues and challenges in the three targeted areas. It enables the project to better understand the levels of participation and involvement of women and men in agriculture and in community-decision-making as well as different experiences of specific development challenges bore by subsets of the women groups. It also enables the project to better take into account women's priorities, restraints and motivations when designing and supporting alternative livelihoods, as well as to identify opportunities for greater equality and empowerment for women throughout project implementation.</p> <p>? All activities have been designed to be gender-sensitive, supported by gender-disaggregated indicators. The project has been designed with particular attention to establishing mechanisms to reduce the risk that existing discriminations against women are inadvertently reproduced in project implementation.</p> <p>? Output 1.1 (Integration of climate change adaptation strategies in agriculture and natural resources management policies) will be supported by the recruitment of a national gender consultant in charge of developing site specific and national social and environmental safeguards, and in particular to look at Principle 2.</p> <p>? Consultations held during PPG included women's group and a needs assessment focusing on the vulnerability and climate adaptation needs of women was conducted to inform the formulation of adaptation and disaster risk reduction plans. The meeting with NGBS Women Association, in particular, led the consultants to listen to many different women's groups and was the occasion to gather insights on the challenges met by them. Clear recommendations were made such as the implementation of flood control measures (channels and dykes), included in the project. All PPG reports, including proper documentation, pictures and proof of concept are stored and available on</p>
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<p><b>Risk 5</b></p>	<p>I = 3 L = 2</p>	<p>Moderate</p>	<p>The project targets 75,000 people from agricultural and pastoral communities and bring 15,000 ha of land under improved practices. Because of the objectives of more adapted and increased agricultural production as well as its support to small agribusinesses, it is likely to impact local development, trigger more small infrastructure construction, and potentially attract neighboring communities and / or internally displaced persons. The support planned by the project to an agribusiness policy at national level (Output 1.2.3) with a view of developing a strong and dynamic market-driven private agribusiness sector and a long-term agribusiness approach with a climate-friendly consideration could lead to more economic dynamism and in turn to environmental degradations in the area.</p>	<ul style="list-style-type: none"> <li>? The climate adaptation approach underpinning the project's design is meant to ensure the sustainability of this system and of the whole landscape, taking into account broader environmental and social constraints.</li> <li>? Stakeholder consultations will be key to determine local techniques and practices and informed by local planning and landscape management approaches. This is meant to ensure sustainable use of resources and avoid adverse impacts on ecosystems and people's livelihoods.</li> <li>? As part of the ESIA/ESMP, a Biodiversity Action Plan will be prepared during implementation looking particularly at biodiversity hotspots and at sites connected through water streams to the project area.</li> <li>? A SESA will be developed to address Output 1.2.3 as defined in the ESMF</li> <li>? The project will work to strengthen institutional capacities to ensure effective and efficient management of agriculture in regard to climate change, including the mitigation of potential adverse impacts to habitats.</li> <li>? Environmental, Social and Technical Assessments, including a cost-benefit analysis of options, will be undertaken for the targeted sites will detail viable options, including UNIDO's work on soil and water conservation structures. Risks will be examined in the course of these targeted assessments, which will analyze adverse impacts on habitats, ecosystems and services. They will identify socially acceptable and environmentally suitable solutions to be supported by the project. Environmental assessment of those alternatives will be included in these assessment, included appropriate measures of avoidance and if not possible of mitigation, if soils and materials are to move through water streams.</li> </ul>
<p><i>Biodiversity Conservation and Sustainable Natural Resource Management</i></p> <p>1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.10, 1.11</p>			<p>Aroyo falls inside the Chelkou Game Reserve and is about 33 km south of Ashana.</p>	<ul style="list-style-type: none"> <li>? The sites of intervention themselves do not constitute areas considered critical habitat. All potential activities will be carried out in accordance with applicable management plan, and with conditions of approval for the activity as set out by the regulatory authorities.</li> </ul>
<p><i>Pollution Prevention and Resource Efficiency</i></p> <p>8.1, 8.2, 8.6</p>			<p>Wardit is about 6km and Akuem is about 10 km from</p>	

<p><b>Risk 6</b></p> <p><b>The afforestation activities, if not well designed, could potentially lead to an inadvertent introduction of invasive alien species</b></p> <p><i>Biodiversity Conservation and Sustainable Natural Resource Management</i></p> <p><i>1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.12</i></p>	<p>I = 3</p> <p>L = 2</p>	<p>Moderate</p>	<p>The project plans not only assisted natural regeneration of forests but also afforestation activities (Output 3.1), mainly through creation of woodlots and energy plantations with fast growing fuel and timber species, and through planting along and on structures for soil and water conservation and harvesting for strength and protection. Project activities envisage afforestation measures and measures to diversify sources of food, fodder, forage, fuel and timber through planting appropriate species of trees and shrubs.</p> <p>The temptation to use fast growing, low maintenance exotic species, along with suitable native species could arise to provide fodder, fuel and timber as an adaptation measure. These species could however prove to be invasive. Moreover, invasive species could also come through inadvertent transfer on contaminated equipment or use of contaminated plant material or seeds.</p>	<p>? Afforestation with native multi-use species in the catchments will be prioritized</p> <p>? Protection and re-forestation of existing forest areas, as well as assisted natural regeneration will be prioritized where possible.</p> <p>? The exact scale of afforestation and forest protection measures as well as the list of species to be used needs to be further detailed, leading to a potential revision (to Low or to Substantial) of this risk.</p> <p>? Prior to afforestation activities being implemented, a full consultation and assessment will be conducted to develop afforestation plans for each of the focal landscapes in line with international best practice and consideration of the local context. Plans will recommend the use of integrated activities that promote the use of indigenous tree species and through sustainable and environmentally friendly means.</p> <p>? Overall, these activities will result in reduced de-forestation and conservation of existing forest species. Recommended fast growing species for fodder and fuel will largely be limited to homesteads and village boundaries and the risk could become low if no invasive species will be utilized or introduced and if such activity remains at a small-scale.</p> <p>? The Biodiversity Action Plan will specifically mention the list of native species to be exclusively used by the project</p>
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<p><b>Risk 7</b></p> <p><b>Accidental release of products or waste from agricultural production units, uncontrolled use of herbicides and chemical fertilizers which can contaminate soils and surface water could happen during project implementation if used without proper protocols.</b></p> <p><i>Pollution Prevention and Resource Efficiency</i></p> <p>8.1, 8.2, 8.4, 8.5</p> <p><i>Standard 3: Community Health, Safety and Security</i></p> <p>3.4</p>	<p>I = 2</p> <p>L = 2</p>	<p>Low</p>		<p>As the project is overall Substantial risk, this risk will be assessed in the course of the ESIA and management measures will be included in the ESMP as needed.</p>
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<p><b>Risk 8</b></p>	<p>I = 3 L = 2</p>	<p>Moderate</p>	<p>The project plans improved ground water recharge and soil moisture retention through community based soil and water conservation measures in micro-watersheds? (Output 3.2), which include construction work and use of locally available materials. Small scale irrigation and construction of shallow bore-wells, as well as most outputs under Outcome 3 involve movement of soil and materials which could potentially discharge sediment into water bodies and streams, hence potentially modifying the landscape beyond the mere project area.</p>	<p>? These projects are not yet selected and will need further safeguards assessments. The SESP will be used to screen all construction activities once identified. Technical and feasibility studies will be conducted for each activity.</p> <p>? The community based watershed committee will coordinate the construction of water harvesting/extraction structures. Project staff including site engineers will design, document and report on the activities.</p> <p>? The community based watershed committee will coordinate these activities which will be documented and reported on by project staff. On the ground soil and water conservation and afforestation measures, and institution of community based management structures which implement and enforce management measures will contribute to protect the areas from over-exploitation.</p> <p>? All soil and water conservation measures, constructions of ponds and water harvesting structures will be done by professional engineers after a comprehensive site survey. Safety measures, including measures to minimize pollution and waste will be integral to the design and implementation of these activities. Local materials will be used for soil and water conservation structures. All earth-works will be completed well in advance of rainy seasons to prevent any erosion or sedimentation of water bodies. Soil stabilization with vegetation and geo-textiles will be done to further reduce post-construction erosion.</p>
<p><i>Pollution Prevention and Resource Efficiency</i></p>				
<p>8.1, 8.2</p>				
<p><i>Biodiversity Conservation and Sustainable Natural Resource Management</i></p>			<p>The scale of those activities is however limited to smallholder farmers from the target area, which also limits the risk of groundwater resources depletion.</p>	
<p>1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.10, 1.11</p>				
<p><i>Standard 4: Cultural Heritage</i></p>				
<p>4.2</p>			<p>If activities are implemented poorly, or in case of a contingency, such water works could lead to adverse impacts on ecosystems and ecosystem services relevant to communities? health (e.g. food, surface water purification).</p>	<p>? Most watershed interventions will be located on unmanaged and degraded lands and water courses which otherwise cause erosion and flooding. Water impoundments will be small in size and designed with optimally placed surplus weirs/overflow channels so that the obstruction is temporary and does not significantly alter the stream hydrology.</p> <p>? UNDP will appoint a site supervisor who will oversee and</p>

<p><b>Risk 9</b></p> <p><b>Climate change, which manifests itself mainly through more violent storms during the rainy season, has generated major shifts in the seasonal calendar, increased heat waves, perturbations in agricultural practices and among the fish populations, and has affected storage capacities ? this can increase conflicts and social tensions, and lead to the loss of benefits among farmers? organizations.</b></p> <p><i>Climate Change and Disaster Risks</i></p> <p>2.1, 2.2</p>	<p>I = 4</p> <p>L = 4</p>	<p>Substantial</p>	<p>The project site is among the most climate vulnerable regions of South Sudan.</p> <p>River flood due to extreme rains, water scarcity, extreme heat all rank as high risk.</p> <p>This means that (1) potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years, with a high confidence in an increase in intense precipitation (which could cause causing rapid stream flow, breaching dykes and checkdams); (2) droughts are expected to occur on average every 5 years, with a medium confidence in decreasing dryness; (4) exposure to extreme heat, resulting in heat stress, is expected to occur at least once in the next five years.</p> <p>According to the most recent assessment report of the Intergovernmental panel on Climate Change (IPCC, 2013), continued emissions of greenhouse gases will cause further warming, and it is virtually certain that there will be more frequent hot temperature</p>	<p>? The project aims to provide adequate support to the agrarian sector in order to better adapt it to climate change and modified agricultural conditions. The project objectives are specifically to build climate resilience to agriculture among rural communities. While extreme events are likely to negatively impact project activities, by and large, the activities will be resilient to climate change impacts.</p> <p>? Capacity enhancement of State entities and natural resources users will be supported and monitored to ensure that communities? livelihoods are better adapted to climate change.</p> <p>? Alternative livelihood activities are designed to be climate-smart; promotion of innovating agro-pastoral techniques is emphasized.</p> <p>? River flood, water scarcity, extreme heat and wildfires and hazards management systems will be part of the capacity-building and knowledge sharing activities, which are central to the first and second components of the project</p> <p>? Trainings to farmer organizations will take into account the whole chain of production in order to ensure that a better adaptation of cultures corresponds to appropriate storage facilities: Activity 1.2.2 particularly targets training materials for farmers to engage in a new and different kind of climate friendly value chain technologies and practices and protocols.</p> <p>? <b>Project planning decisions, project design, and must take into account the level of river flood hazard.</b></p> <p>? <b>Construction methods will also, in their technical studies, integrate climate hazards.</b></p> <p>? Knowledge sharing at global, regional, national, county and community levels will allow to identify prototypes of early warning systems (EWS) that may exist in the project area. Flood early warning systems for instance are designed to provide communities with advanced warning of an imminent flood event based on weather forecasts, rainfall</p>
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<p><b>Risk 10</b></p> <p><b>The project might generate an increase of GHG emissions at the local level due to the expected increased agricultural production, on the short-term and especially on the long-term</b></p> <p><i>Climate Change and Disaster Risks</i></p> <p>2.4</p>	<p>I = 2</p> <p>L = 1</p>	<p>Low</p>		<p>As the project is overall Substantial risk, this risk will be assessed in the course of the ESIA and management measures will be included in the ESMP as needed.</p>
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<p><b>Risk 11</b></p> <p><b>Aweil region's volatile security situation and general low level of labor safety standards, including UNDSS lists the security level of the Aweil regions as Moderate, may pose a risk for occupational health and safety with regard to any physical works (such as during construction, transporting materials). Project activities could lead to work-related accidents involving local workers during the construction of water storage and drainage control</b></p> <p><i>Community Health, Safety and Security</i></p> <p>3.1, 3.3, 3.10</p> <p><i>Labour and Working Conditions</i></p> <p>7.1, 7,6</p>	<p>I = 3</p> <p>L = 3</p>	<p>Moderate</p>	<p>Some of the infrastructures planned in the project for water storage and drainage control may involve machinery and products potentially harmful to workers if used incorrectly.</p> <p>Construction work, though small-scale, may hence have impacts on the health and safety of community workers though potential work-related incidents, as well as on the population themselves who live and work around these future constructions.</p> <p>Volatile security situation may also pose threats to the workers while on duty for the project.</p> <p>In addition, the failure of structures such as dykes or dams may cause flooding and damage to lands and pose risk to livestock and people. The risk of drowning of livestock and people, particularly children, in ponds and water harvesting structures, needs to be taken into account.</p> <p>It is to be noted that contractors and NGOs/CBOs</p>	<p>? UNDP will follow a procurement process that requires from contractors a site-specific environmental, health, and safety management plans and procedures. They will be part of the technical and feasibility studies.</p> <p>? The construction impacts on the human environment will be managed through a Health and Safety Plan or workers and for populations</p> <p>? The risk of work-related accidents of local workers will also be taken into account in the Health and Safety Plan which will set the standard for the technical and feasibility studies.</p> <p>? Further, the project will designate, within the community, competent individuals to carry out construction monitoring work.</p> <p>? The project has been developed in a security sensitive way, including selection of safe areas as project sites and adequate responses to changing security situation. To ensure security, the project will work through local NGOs/CBOs, who have experience in project implementation.</p> <p>? Activity 3.1.2 includes an EIA by engineers during design of structures.</p>
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<p><b>Risk 12</b></p> <p><b>Most of the agricultural sector in the project area is informal and fails to comply with national and international labor standards. Hence there is a risk of violation of workers' rights within the cooperatives and small agribusinesses supported by the project, linked to forced labor and in particular to child labor.</b></p> <p><i>Labour and Working Conditions</i></p> <p>7.1, 7.3, 7.4, 7.6</p>	<p>I = 4</p> <p>L = 4</p>	<p>Substantial</p>	<p>Forced labor has been reported in the agricultural sector in South Sudan.</p> <p>Child labor is a particularly concerning issue in South Sudan. 45.6% of children are considered to be engaged in a form of labour, and 60% of these children are involved in the agricultural sector[8]. While these ratios of children engaged in formal labor are large, even more children likely work in the informal sector.</p> <p>Child labour activities in the project area includes farming, planting and harvesting crops, but also cattle herding, an activity determined as hazardous and, as such, relevant to Article 3(d) of ILO C. 182. The national law states that the minimum age for work is 14, but rises to 18 for hazardous work. Children may also be employed (particularly girls) in collection of water/fuel etc.</p>	<p>? Inspections of all activities are expected to be carried out by Ministry of the Agriculture and local authorities. In order to ensure the protection of children and all workers against forced labour and other worst forms of labour in agriculture, it is expected to step up inspections of those activities.</p> <p>? The project will work closely with few farmers organizations and agribusinesses within this project, and responsible parties will ensure that these organizations comply with all national and international labour standards.</p> <p>? Training to farmers organizations and agribusinesses on adapted practices will recall these standards and monitoring of working conditions and especially child labor will be diligently followed as planned in the ProDoc.</p> <p>? Written labour management procedures will be established[9] that set out the conditions in which project workers will be employed or engaged and managed, in accordance with the requirements herein and applicable labour laws, rules and regulations. The procedures will be appropriate to the size, locations and workforce of project activities, and the most protective international and /or national standards will apply.</p> <p>? These procedures will particularly address child labour: a minimum age for employment shall be specified in connection with the project activities, as determined by national law for applicable parties subject to national law and consistent with the ILO Convention No. 138.[10] A child under the age of 18 may not perform hazardous work, as stated in South Sudan national law. In addition, a child under the age of 18 may not, in connection with project activities, perform work that is likely to interfere with his/her compulsory education or be harmful to his/her physical, mental, spiritual, moral or social development.</p> <p>? Where cases of child labour are identified, immediate steps shall be taken by applicable parties to correct and remedy them, including the rehabilitation and social integration of the child where necessary.</p>
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<p><b>Risk 13</b></p> <p><b>The project may act as a disease vector : small scale water storage may have potential to provide breeding areas for mosquitos which represent a nuisance and increase the prevalence of Malaria or other significant mosquito borne diseases, while travels of staff and consultants into the area may increase the risk of COVID-19 spread.</b></p> <p><i>Community Health, Safety and Security</i></p> <p>3.4</p>	<p>I = 4</p> <p>L = 4</p>	<p>Substantial</p>	<p>The creation of water works supported by the project to adapt agricultural practices to increased droughts in the two areas may be sources of proliferation of vectors of waterborne diseases (cholera, bilharzia, guinea worms, malaria, etc.) which can harm beneficiaries.</p> <p>The lack of medical facilities and the dilapidated condition of existing facilities, the lack of training for medical personnel, the low number of medical personnel per capita and the excessive burden health-care expenditure represents for low-income households, all lead to believe that an increase in water-borne diseases would lead to a considerable health and sanitation issue at the local level.</p> <p>The project relies on continuous and intensive stakeholder engagement and use of participatory methods and engagement in order to transfer climate adaptation technologies and techniques. It is therefore necessary</p>	<p>? Because this risk can't be avoided, mitigation measures will implemented to tackle the adverse effects. The following measures will be taken before the start of operation of the developed site, especially before the rainy season which constitutes a peak of transmission (April to October). Because the risk cannot be entirely avoided, UNDP will ensure that the project minimizes the potential for community exposure to diseases that could result from or be exacerbated by programming activities, including water-related and vector-borne diseases. As endemic diseases exist in the project area (e.g. malaria), the PMU will explores cost-effective ways to improve environmental conditions that could minimize the incidence of such diseases. Mitigation measures will be integrated within the Health and Safety Plan.</p> <p>? These measures will favor the prevention of risks and impacts and taken into consideration the differentiated exposure to and higher sensitivity of vulnerable groups.</p> <p>? The Health and Safety Plan will cover COVID-19 prevention measures, as already defined in the ProDoc (section on risks). These measures include (1) A system of delegation of responsibilities to decentralize decision making and action wherever feasible; (3) Local coordination of activities - from the UNDP field office at Aweil and implemented by local extension and line department staff to minimize movement; (4) Adherence to all government directives, such as lock downs and mandatory quarantine as well as restrictions on travel, organization of events or sizes of meetings and workshops, (5) additional precautions to ensure that stakeholders and beneficiaries are not exposed to and that project activities do not in any way, allow spreading of the virus to rural areas; (6) Avoidance of international travel wherever possible; (7) The use of online tools such for video conferencing, project management and collaboration. (8) a strong emphasis on the use of mobile ICT to minimize face to face interactions and facilitate online interactions and transfer of data, information and instructions; (9)The training of trainers approach will effectively transfer capacities to local institutions; (10) Mandated safety protocols and best practices such as use</p>
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<p><b>Risk 14</b></p> <p><b>The project could adversely impact traditional indigenous knowledge by (1) sharing it in a way that is not culturally appropriate ; (2) triggering its loss through the introduction of climate smart agriculture technologies and new practices</b></p> <p><i>Cultural Heritage</i></p> <p>4.3, 4.5</p> <p><i>Indigenous peoples</i></p> <p>6.1, 6.2, 6.3, 6.5, 6.7, 6.9</p>	<p>I = 3</p> <p>L = 3</p>	<p>Moderate</p>	<p>These traditions remain in use to develop guidelines for watershed based interventions in climate-smart agriculture, and the project will prioritize the valorization of traditional indigenous knowledge, practices and existing strategies for coping with climate related stress within communities. However, this knowledge could be shared in a way that is not culturally appropriate, betrayed and wrongly interpreted by PMU and stakeholders external to the communities.</p> <p>Moreover, where deemed appropriate, climate smart practices, more resilient crops and other forms of knowledge will be introduced by the project. This may lead, in the mid-term, to a progressive abandonment of traditional forms of agriculture and hence to a loss of traditional knowledge among the younger generations.</p>	<p>? Preservation of traditional knowledge will happen through the study and encouragement of existing climate smart practices. Activities 1.1.3, 1.3.3, 1.4.1 and 1.4.2 include specific measures to identify potential sites and document traditional and indigenous knowledge, with consultations to be conducted separately for women and vulnerable groups; to acknowledge and build on indigenous and traditional knowledge on pests, diseases, nutrient management, land/nursery preparation, soil and water conservation and appropriate implements and inputs for both the advisory packages and the trainings.</p> <p>? Where possible, agricultural knowledge will be studied and preserved through the partnership with local research centres.</p> <p>? The Indigenous Peoples Plan will plan adequate measures to (1) avoid the loss of indigenous agricultural knowledge: (2) define culturally appropriate ways of sharing indigenous knowledge.</p> <p>? FPIC will be applied when necessary.</p>
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<p><b>Risk 15</b></p> <p><b>There is a risk that indigenous peoples, vulnerable or vulnerable groups, might not be involved during the implementation of the project including investments in local adaptation measures for resilient agriculture and implementation of local-level economic activities, and therefore not engaged in, supportive of, or benefitting from project activities.</b></p> <p><i>Cultural Heritage</i></p> <p>4.3, 4.1, 4.5, 4.4</p> <p><i>Displacement and Resettlement</i></p> <p>5.2, 5.4</p> <p><i>Indigenous peoples</i></p> <p>6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9</p>	<p>I = 4</p> <p>L = 3</p>	<p>Substantial</p>	<p>South Sudan is a culturally diverse country where traditional governance systems and customary practices continue to influence local decisions, particularly in rural areas.</p> <p>Under the constitution of The Republic of South Sudan 2011, the constitution states in its part two the Bill of Rights which are numerous and under section 33 specifically states (the right of Ethnic and Cultural Community) that Ethnic and cultural communities shall have the right to freely enjoy and develop their particular cultures. Members of such communities shall have the right to practice their beliefs, use their languages, observe their religions and raise their children within the context of their respective cultures and customs in accordance with this Constitution and the law?.</p> <p>The project area is mainly inhabited by the Dinka people and the Luo (formerly / commonly known as Jurchol. The change of name is</p>	<p>? As outlined in the ESMF, Responsible parties will make sure that the project activities strengthen national laws and local regulations in line with the respect of UNDP standard and internationally recognized indigenous peoples rights. Specific measures pertaining to the respect of indigenous peoples rights to land, food, services, and participation in project which affect their lands will be enclosed within the Indigenous Peoples Plan, to be developed on a participatory basis.</p> <p>? Separate culturally appropriate consultations have been and will continue to be held in the early phase of the project with indigenous communities on project sites, with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned. All consultations have been appropriately documented and remain available upon request. The FPIC protocol will be further detailed in the Indigenous Peoples Plan.</p> <p>? Training and material support provided to farmers organizations and women's groups will be based on inter-community dialogue, ensuring that all local and indigenous communities participate equitably (meaning ensuring transition to Arabic, dinka and dho-luo). In that sense, the project represents an opportunity exists to support forums to increase peaceful dialogue and encourage agreement.</p> <p>? Participation of all communities and farmers in the farmer organizations will be encouraged in a culturally sensitive way. PMU will encourage the participation of a sufficient number of indigenous participants (no single representation) and primarily promote sustainable traditional and customary use practices and prohibit involuntary restrictions on land and resource use.</p> <p>? The project will ensure that communities are able to represent themselves through their own organizations, not via proxy groups made up of people from other interest groups.</p> <p>? Farmers organizations are expected to establish transparent and accountable</p>
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<b>QUESTION 4: What is the overall project risk categorization?</b>				
<i>Low Risk</i>	?			
<i>Moderate Risk</i>	?			
<i>Substantial Risk</i>	X		<p>Required assessments: ESIA and SESA</p> <p>Required management measures: ESMF, ESMP with stakeholder engagement plan, indigenous people's plan including Free Prior and Informed Consent (FPIC) protocol, Gender Action Plan including Gender analysis, Grievance Redress Mechanism, Livelihood Action Plan, Health and Security Plan, Biodiversity Action Plan</p> <p>Note: Although all project activities have been screened in this SESP (in line with SES requirements), the activities under UNIDO (joint GEF Agency) will be managed by UNIDO in accordance with that Agency's safeguards policy (as noted in the ESMF).</p>	
<i>High Risk</i>	?			
<b>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)</b>				
Question only required for Moderate, Substantial and High Risk projects				
<i><u>Is assessment required?</u></i> <i>(check if ?yes?)</i>	X			<i><b>Status?</b></i> <i>(completed, planned)</i>
<i>if yes, indicate overall type and status</i>		X	Targeted assessment(s)	Completed during PPG: stakeholder analysis, gender analysis

		X	ESIA (Environmental and Social Impact Assessment)	Planned during implementation
		X	SESA (Strategic Environmental and Social Assessment)	Planned during implementation
<b><i>Are management plans required? (check if ?yes)</i></b>	X			
<i>If yes, indicate overall type</i>		X	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)	PPG stage:  GAP: completed  SEP: completed  Implementation stage (in ESMP):  IPP: planned  HSP: planned  BAP: planned  LAP: planned
		X	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	Planned

		X	ESMF (Environmental and Social Management Framework)	Completed during PPG
<i>Based on identified risks, which Principles/Project- level Standards triggered?</i>			<b>Comments (not required)</b>	
<i>Overarching Principle: Leave No One Behind</i>				
<i>Human Rights</i>	X			
<i>Gender Equality and Women's Empowerment</i>	X			
<i>Accountability</i>	X			
<i>1. Biodiversity Conservation and Sustainable Natural Resource Management</i>	X			
<i>2. Climate Change and Disaster Risks</i>	X			
<i>3. Community Health, Safety and Security</i>	X			
<i>4. Cultural Heritage</i>	X			
<i>5. Displacement and Resettlement</i>	X			
<i>6. Indigenous Peoples</i>	X			
<i>7. Labour and Working Conditions</i>	X			
<i>8. Pollution Prevention and Resource Efficiency</i>	X			

[1] Human Rights Council, Twenty-sixth session, Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development - Report of the Special Rapporteur on the human rights of internally displaced persons, Mission to South Sudan ? June 2016

[2] Incidence of violence affecting civilians in South Sudan, Quaterly brief, (1) Jan-March 2020, (2) April-June 2020, Human Rights Division United Nations Mission in South Sudan

[3]

[4] Country Gender Profile Republic of South Sudan, Final Report, JICA, March 2017

[5] <https://www.iucnredlist.org/species/12392/3339343>

[6] <https://www.iucnredlist.org/species/44172/50197518>

[7] FAO/WHO, The International Code of Conduct on Pesticide Management (2014)

[8] *Data from 2011, published by UNESCO Institute for Statistics, 2020.*

[9] Labour management procedures include relevant human resources policies and policies and procedures for the engagement of contractors.

[10] To be consistent with the ILO Minimum Age Convention, 1973 (No. 138), the applicable minimum age will not be less than the age of completion of compulsory schooling and, in principle, not less than 15 years.

[11] Luo are being wrongfully referred to as 'Jurchol', a Dinka phrase that has controversial and disputable meanings. Jur is someone or group of individuals who don't speak Dinka language, while Chol is a black color which clearly implies that Luo people when called Jur Chol in Dinka means a 'Black Stranger'. This interpretation and change of name is currently subject to disputes between community-based advocacy groups - <https://thessherald.com/2020/08/17/luo-people-commonly-known-as-jurchol-to-change-their-identity-to-luo/>

[12] <https://www.cia.gov/library/publications/the-world-factbook/geos/od.html>

[13] <https://www.universalis.fr/encyclopedie/dinka/>

[14] <http://www.gurtong.net/Peoples/PeoplesProfiles/JurcholLuo/tabid/199/Default.aspx>

[15] Existing resources can be used such as <https://sites.google.com/site/gardensfordamascus/case-studies-conflict-resolution/traditional-conflict-resolution-in-southern-sudan> or Traditional Mechanisms of Conflict Resolution in Southern Sudan, by Dr. Samson S. Wassara, Berghof Institute for Peace, March 2007

#### **Supporting Documents**

Upload available ESS supporting documents.

**Title**

**Module**

**Submitted**

Title	Module	Submitted
<b>PIMS 6011 Annex10 Environmental and Social Management Framework_17May2021_clean and cleared</b>	<b>CEO Endorsement ESS</b>	
<b>PIMS 6011 Annex 6 Social _ Environmental Screening Procedure_17May2021_clean and cleared</b>	<b>CEO Endorsement ESS</b>	

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

The project results framework is also presented in Section V of the ProDoc.

<p><b>This project will contribute to the following Sustainable Development Goal (s):</b></p> <p><i>Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture</i></p> <p><i>Goal 5: Achieve gender equality and empower all women and girls</i></p> <p><i>Goal 13: Take urgent action to combat climate change and its impacts</i></p>				
<p><b>This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD):</b></p> <p><b>UNCF outcome 2: Local economies are recovered and conditions and coping strategies are improved to end severe food insecurity.</b></p> <p><i>UNDP Strategic Plan outcome 1: Advance poverty eradication in all its forms and dimensions.</i></p>				
	<p><b>Objective and Outcome Indicators</b></p> <p><b>(no more than a total of 20 indicators)</b></p>	<p><b>Baseline[1]</b></p> <p><i>Must be determined during PPG phase</i></p>	<p><b>Mid-term Target[2]Expected level of progress before MTR process starts</b></p>	<p><b>End of Project Target</b></p> <p><i>Expected level when terminal evaluation undertaken</i></p>
<p><b>Project Objective:</b></p> <p><b>Building resilience to climate change risks amongst agricultural and pastoral communities of South Sudan.</b></p>	<p><b><u>Mandatory Indicator 1:</u></b> Direct project beneficiaries</p>	0	25,000 (11,910 male, 13,091 female)	75,000 (35,729 male, 39,271 female)
	<p><b><u>Mandatory GEF Core Indicators:</u></b></p> <p><i>Indicator 2: Area of land to be managed for climate resilience (ha)</i></p>	0	5,000 ha.	15,000 ha.

	<i>Indicator 3: Number of agricultural and NRM policies that integrate climate change</i>	0	3	<p>1: National Agriculture and Livestock Extension Policy (NALEP)</p> <p>2. The National Agricultural and Livestock Research Policy.</p> <p>3. Northern Bahr el Ghazal Policy for Community Based Forest and Natural Resources Management.</p>
<b>Project component 1</b>	<i>Institutional capacities for gender-responsive climate change adaptation across the agricultural sector.</i>			
<b>Outcome 1: Strategies and capacities to implement community based and gender-sensitive climate change adaptation for agriculture and food value chains across South Sudan.</b>	<i>Indicator 5: Number of strategy documents and advisory packages developed for gender responsive CCA and value chains in the agricultural sector</i>	0	<p>1 - Strategy paper (Ag. extension policy)</p> <p>3 - Advisory packages for farming, livestock and agro-forestry</p>	<p>2 - Strategy papers (Ag. extension &amp; Ag. value chains)</p> <p>3 - Advisory packages for farming, livestock and agro-forestry</p>
	<i>Indicator 6: Institutional and grassroots capacities demonstrated in coordinating and implementing community based, gender responsive CCA in agriculture and NRM</i>	0	3 - NBG state, Aweil Centre and Aweil East county institutions	6 - NBG state, Aweil Centre and Aweil East county institutions, CBOs in Wardit, Aroyo and Akuem sites

<b>Outputs to achieve Outcome 1</b>	<p>1.1 <i>Integration of climate change adaptation strategies in agriculture and natural resources management policies.</i></p> <p>1.3: <i>Guiding materials to support climate-responsive extension services developed, delivered and distributed</i></p> <p>1.4 Training of trainers and extension personnel delivered to support climate-smart agriculture and natural resources management</p>			
<b>Project component 2</b>	<i>Climate change resilient agriculture and food value chains.</i>			
<b>Outcome 2: Best practices in climate change resilient agriculture and food value chains adopted by rural communities.</b>	<i>Indicator 7: Number of women and men in agro-pastoral communities adopting CSA and climate resilient livelihoods</i>	0	25,000 (11,910 men, 13,091 women)	75,000 (35,729 men, 39,271 women)
	<i>Indicator 8: Number of agri-businesses and value chains established</i>	0	1 value chain.  5 organized enterprises, MSMEs, cooperatives, associations	3 value chains.  20 organized enterprises, MSMEs, cooperatives, associations
<b>Outputs to achieve Outcome 2</b>	<p>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</p> <p>2.2 Farmer field schools established and community based organizations (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)</p> <p>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</p>			
<b>Project component 3</b>	<i>Community based natural resources management to offset the impacts of climate change on ecosystem goods and services.</i>			
<b>Outcome 3: Communities in micro-watersheds</b>	<i>Indicator 9: Number of hectares restored</i>	0	5,000	15,000

<p><b>adopt natural resources management and restoration to reduce climate change impacts.</b></p> <p><i>2 indicators maximum</i></p>	<p><i>Indicator 10: Number of micro-watershed committees established for sustainable management of catchment areas</i></p>	<p>0</p>	<p>0</p>	<p><i>3, in Aroyo, Chel and Akuem respectively.</i></p>
<p><b>Outputs to achieve Outcome 3</b></p>	<p>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</p> <p>3.2 Improved ground water recharge and soil moisture retention through community-based soil and water conservation measures in micro-watersheds</p> <p>3.3 Reduced impacts of floods through creation of water storage and spreading structures and drainage control measures in the catchment</p> <p>3.4 Increased resilience to drought through creation of water points from shallow boreholes</p>			

[1] *Baseline, mid-term and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and needs to be quantified. The baseline can be zero when appropriate given the project has not started. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.*

[2] *Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.*

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

### **Comments from the Norwegian and Danish Constituency**

Outcomes such as 1 and 2 need gradual start to allow the government to prepare to own and sustain these outcomes.

Thank you for the suggestion with which we completely agree. A year-long inception phase is proposed to establish implementation mechanisms and ensure adequate capacities of project partners. This period will be used to equip stakeholders to conduct necessary field assessments and mobilization work. The inception phase will be used to raise the level of sensitization on issues such as gender-equity and gender-responsive development among institutional stakeholders and to develop, test and implement the project's monitoring framework and build capacities of stakeholders in its use. On-ground socioeconomic as well as bio-physical studies conducted during the inception phase will lead to a comprehensive and contextual gender strategy, identify climate smart agricultural and watershed restoration interventions and a strategy for private sector engagement and establishing/restoring markets and value chains.

Outcome 3 is assessed to be more effective as the approach is in favor of the community. The planned activities are realistic and sustainable by the community themselves.

Thanks to reviewer for these comments. Building on the PIF, we have conducted additional analysis of watershed delineations and sites have been selected on basis of a comprehensive set of criteria using an iterative process where stakeholders played a key role. This information is presented in the feasibility study (Annex 13). The Stakeholder Engagement Plan (Annex 9) presents details of the strategies to be followed to generate awareness, mobilize and build capacities of stakeholders and community-based organizations.

The project description is too simplistic and reveals an inadequate understanding of the context on the ground. It requires improvement to ensure better management of risks.

We have tried to address these lacunae through the following work during the PPG process. Extensive field work, analysis of secondary data including geo-spatial data as well as reviews of literature are included in the Feasibility Study (Annex 13). Field data collected during the intensive stakeholder engagement process during the project preparation is presented in Annex 9: Stakeholder Engagement Plan and Annex 9a: Stakeholder Consultation Report. These reports demonstrate the granular level of field data and consultations that were carried out during the PPG phase. A comprehensive risk assessment covering social, environmental risks from project activities has been done. This is presented in the UNDP Social and Environmental Screen Procedure (Annex 6:)along with the Environmental and Social Management Framework (Annex 10). The UNDP risk register (Annex 7) lists risks, including procedural risks to the project. Together with the Gender Analysis and Action Plan(Annex 11), and the Stakeholder Engagement Plan (Annex 9 and 9a) these documents list and provide risk mitigation and avoidance strategies for the project and will ensure all social and environmental risks are taken into account before any field implementation or interventions are initiated by this project.

Alignment to SDG vision 5 zero hunger and vision 16 climate action

The project is indeed closely aligned with the two SDG visions. Its interventions are designed to address food security by building climate resilient livelihoods. Its activities tackle one of the primary causes of food insecurity in South Sudan, namely the effect of climate change on agriculture and food

production. The project will help build resilience among both agricultural and pastoral communities by mitigating impacts climate change induced natural disasters through climate smart agricultural practices and restoration and protection of ecosystem function. The watershed-based approaches proposed in the project will additionally provide communities with long term climate resilience by restoring and protecting catchments which will result in sustained ecosystem services on which communities rely during times of stress.

Align the program to both national and regional priorities to ensure sustainability.

This has been done, thanks to the reviewer for identifying this gap. We have made the following changes to the proposal. The alignment with national, regional and international priorities and agreements is provided in this document. Additional information about baseline projects including relevant national and regional initiatives is provided in Part IV: Results and Partnerships (Pg. 20) of the ProDoc.

Alignment of the programme with IGAD's objectives of addressing the environmental and climate change issues.

Thank you for pointing out this gap in the PIF. We have provided details of how the project is aligned with IGADs objectives in the section of alignment with international and regional conventions and in the knowledge management section of this document and in the ProDoc Section II, pg. 13 and Section IV, pg. 50.

Both component 2 and 3 of the project seek to address environmental and climate change issues by utilizing a watershed-based approach to restoring ecosystem processes through interventions in soil and water conservation, afforestation, agro-forestry and climate smart agriculture. The project has adopted a holistic approach which ties in restoration with income diversification and linkages with the private sector by addressing constraints, re-building and strengthening market value chains. This is supplemented by the analysis provided in the section II on Watershed Approaches, of the feasibility study (Annex 13).

#### Comments and Suggestions from Germany

Germany suggests clarifying with which specific CBOs cooperation is planned as part of the project's stakeholder engagement.

Thank you for pointing out the lack of clarity. We have now provided details of the CBOs in the discussion on activities in the proposal. CBO's are identified as key stakeholders to ensure community participation and representation of women, but only limited information is given on specific engagement activities Annex 9: Stakeholder Engagement Plan provides details of the CBOs and strategies to be used for their mobilisation and capacity building. Annex 9a which documents the stakeholder engagements, goes into details on the composition, strengths and weaknesses of the CBOs on-ground and has informed the design of this strategy. To summarise: The inception phase of the project will involve in-depth field surveys to identify potential beneficiaries from within communities

based on vulnerability criteria. These criteria will ensure equitable representation of women and marginalised groups within each community. Specific attention will be given to women headed households and households of internally displaced people. The stakeholder engagement strategy and the gender analysis and action plan will ensure that awareness generation, training and capacity building of communities is done so as to ensure, i) Representation of women as members and leaders within user groups and committees created to implement project activities and ii) Separate groups and associated activities for women that focus on needs and vulnerabilities of women within their specific livelihood context. For example, a group of women vegetable farmers mobilised to implement climate smart agricultural activities and small-scale irrigation on their plots, or a group of women and girls in cattle camps organised to design and then manage the use of water points.

Identify and detail what risks and mitigation options associated with possible omission of parts of the planned co-financing exist.

Co-financing from the ministries has been secured. The letters of support are presented in Annex 14. The analysis of risks associated with co-finance are presented under the section on risks. In this document Text follows: There is a small risk that planned co-financing for the project may be delayed or not be provided on time or in the amounts intended. Delays in funding or cancellation of projects have occurred in the past on account of insecurity. However, after the 2018 peace agreement, there has been a resumption of projects and finances for initiatives in South Sudan. This risk has also been minimised by carefully reviewing the co-finance commitments of the institutional partners and revising the co-finance commitments on that basis. The amount of in-kind co-finance is based on actual allocations of staff time, infrastructure and facilities of the government to the project. These commitments are supported by letters that are provided in Annex 14. Co-finance through baseline projects and partnerships (described in Section IV of the pro-doc and in the CEO Endorsement Application) is based on projects to which financial commitments have already been committed and which are concurrent to the proposed LDCF project. Letters of commitment from the respective implementing agencies have been procured.

The project proposal should explore in greater detail how active female representation will be ensured in e.g. watershed committees. In comparable cases, participatory approaches have solidified power imbalances within the communities because community leaders agreed on adaptation measures and benefit-sharing schemes that negatively affected poorer and less influential community members. This concern should be addressed.

This is an important concern which has been taken into account in project design. Section IV of the ProDoc on pg.51 discusses how the project addresses gender equality and women's empowerment. This is further supported by the detailed gender analysis and action plan presented in Annex 11 and in the stakeholder engagement plan in Annex 9. The proposed project strategy specifically ensures priorities of women are addressed proactively at the planning and design stages and that priority is given to activities that will reduce and not add to the considerable burden of domestic responsibilities and

chores on women. This includes creation of water points in accessible locations and species selection which increases availability of fuel, fodder, and NTFP on which women are dependent.

The project proposal would benefit from a more detailed outline of how it will ensure that local communities will adopt the described techniques and continue to use them in the medium and long-term. Additionally, the project proposal may engage more thoroughly with local and traditional knowledge in this context.

Thank you for these comments. Sustainability is indeed a key challenge in such projects. The strategy for sustaining project activities is outlined in Pg. 17 in this document and in Section IV, pg.51 in the ProDoc. Annex 13: Feasibility Study also discusses the key strategies pertaining to community based NRM.

The reviewers rightly point out the importance of integrating traditional knowledge and practices with project intervention for better acceptance and adoption of new ideas and techniques. The need for the formal acknowledgement and documentation of traditional knowledge and the risk associated with its loss or misuse are highlighted in the risks section in both this document (Pg. 29) and in the ProDoc (Section IV pg. 44). Further, output 1.4 activity 1.4.1 (Pg. 24) and output 2.4, activity 2.4.4 of the ProDoc (Pg. 30) states how building on traditional knowledge and practices is a key component in the strategy to ensure acceptance of CSA interventions.

To summarize:

? All technological interventions will build on traditional knowledge and practices, will be low cost and based on locally available materials.

? Training programs held as part of the project will incorporate lessons and experiences from traditional and customary practices and local knowledge in order to increase acceptance and adoption among communities.

? Skills required to implement project activities will be transferred to communities via comprehensive training programs hands on capacity building. These programs will run concurrently with project activities.

? The project will target village development workers and volunteers as agents of change. Equitable representation of women and vulnerable groups will be ensured among the agents of change, who will receive training in relevant areas.

? Government extension services will be the focus of a series of training of trainer programmes and their capacities to support farmers, pastoralists and gardeners will be enhanced through both technical training and the provision of necessary materials and implements through private and government supply chains.

? A market feasibility study will be undertaken as part of the inception phase to establish the viability of activities that rely on markets and value chains. This includes income diversification activities, agricultural inputs and implement supplies and agro-processing, storage and marketing.

? The potential of private sector in the supply of inputs and materials required for project activities and their repair and maintenance will also be ascertained during the inception phase. Interventions which can be supported by existing market and value chains will be prioritised.

? Communities will be required to contribute to the project by paying user fee where appropriate and/or by replicating activities by training new entrants and contributing labour and materials. For example, women gardeners will be asked to train other women in subsequent season and to provide them seeds and share implements procured for the project.

? Ownership of assets and infrastructure created by the project will lie with the respective user groups. This is to protect against any elite capture or takeover of assets by vested interests.

? Training in operation and maintenance of equipment and implements will be a requirement prior to hand over of assets to user groups.

Germany appreciates the project proposal's emphasis on fostering local ownership through in-kind contributions (labor, materials, etc.) by the target population to the outputs described under 3.2.-3.4. The project proposal should explain maintenance needs of the respective structures, and how the local communities will be trained to conduct such activities independently in the long-term. Fostering local ownership through in-kind contributions (labor, materials, etc.) is indeed part of the project's strategy to ensure sustainability.

It is acknowledged that long term sustainability will require capacities in operation and maintenance and funds to replace parts of equipment. Details of the strategy to ensure sustainability are presented above. Much of this is related to the ability of communities to undertake O&M of the rural infrastructure created by the project. A summary of the strategies proposed in the project is below:

? Design of all community assets and rural infrastructure will include an O&M plan which details out requirements for O&M including costs of labor, materials, equipment parts and inputs such as fuel.

? Assets such as equipment, which require regular maintenance and expertise in operation will only be handed over to user groups after these groups have received requisite training.

? User groups will be required to collect a user fee based on mutually agreed rates. This fee will be used to procure replacement parts and materials such as fuel and lubricants.

? The market study will ensure any equipment or materials procured for the project (such as pumps or piping) are available within reasonable distances from the sites and also can be serviced in case of major breakdowns.

Lessons from the GIZ-project 'Adapting agricultural production methods to climate change and stabilizing livelihoods in Western Bahr el Ghazal, South Sudan', which concluded in 2018. The project used field farmer schools to enable the local population to employ various adaptation measures, particularly in relation to staple crops and vegetables. Additionally, the project strengthened the capacities of local government, by involving the agricultural extension services.

This is indeed a very relevant project and its experiences and lessons learned will be replicated. Details have been included in Section IV of the proposal document (Partnerships, pg. 35). Capacity building activities proposed in the project will be channeled through the farmer's field school approach. This, as established by the GIZ project, has clear advantages. Please see activities under output 2.2. A summary of the proposed actions is below:

- ? Ensuring all interventions are on-ground and demonstrated to work in local conditions.
- ? Progressive farmers and pastoralists who will host these demonstrations will also receive intensive training in climate smart agricultural technologies and will be provided opportunities to share and exchange their experiences with others. This will create a local pool of resource persons.
- ? Camps of farmers/pastoralists will be organized at regular intervals to these demonstration sites.
- ? Farmer field schools will also be the conduit for inputs required for CSA.

Finally, Germany recommends a more thorough explanation of the social selection criteria

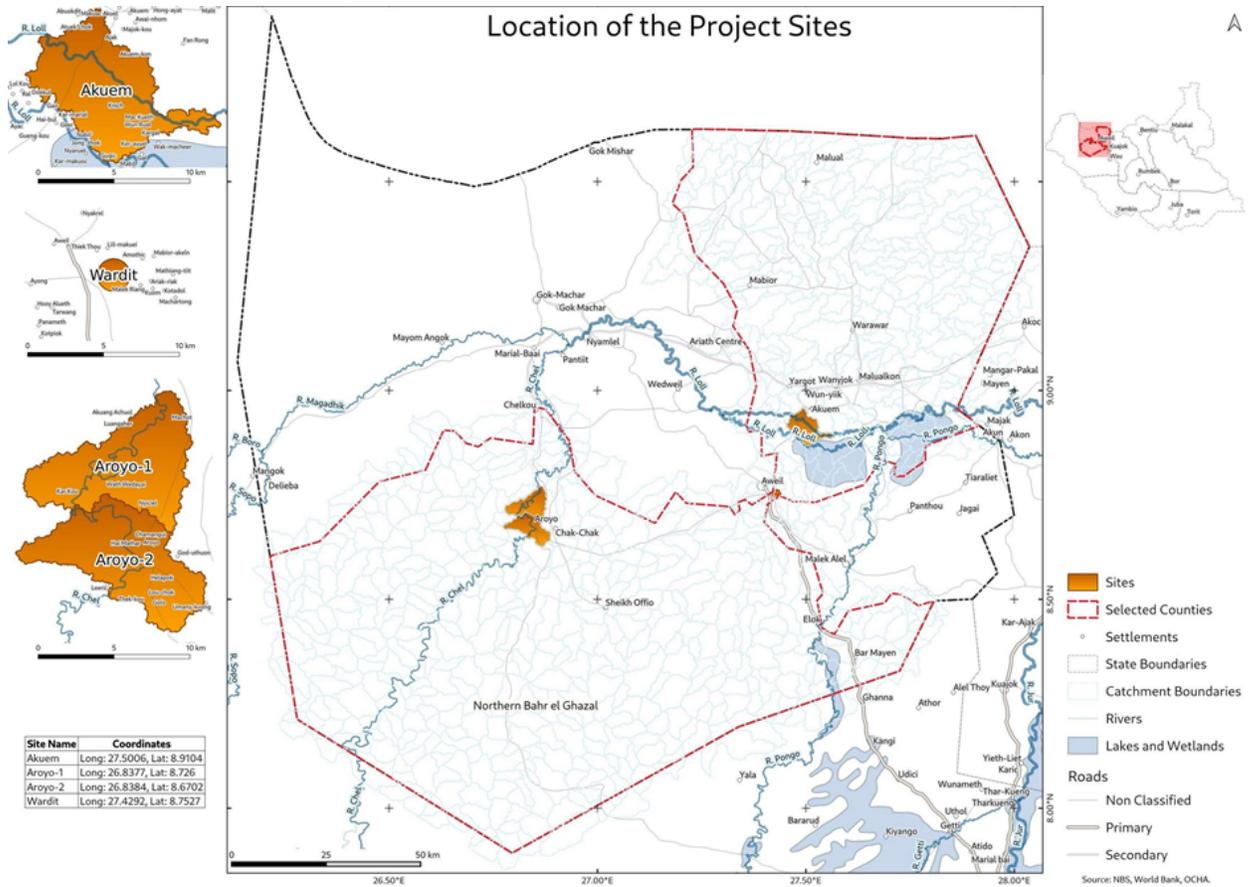
Section 4 of the feasibility study presents a detailed discussion the selection of sites which is based both on socioeconomic as well as biophysical criteria. This is summarized below. Kindly note that availability of socioeconomic data in South Sudan is very limited and we had to rely on records from multiple sources, including on-ground data provided by government partners. Social vulnerability was a key parameter that was considered. For this we used data from OCHA and FEWSNET which shows that Northern Bahr el Gazal is among the most food insecure regions of the country, presently at IPC level 4. This area also has a high population of refugees and IDP. However, unlike Jongelei state, the security situation in Aweil is stable, which allows for project activities to be implemented as planned. Another key criteria for selection of the sites was the willingness of the traditional leadership for meaningful participation of women and marginalized groups. Vulnerability to floods and droughts was a third criteria used by local stakeholders to identify sites. As a parallel exercise, the micro-watersheds selected for the project were scored based on biophysical attributes as well as logistic and institutional parameters. Micro-watersheds with highest potential productivity, better access to markets and facilities and communications were scored higher. Note that both the counties have a strong climate case (presented in section 17). The final sites were then selected on the basis of combined (and weighted) scores.

**ANNEX C: Status of Utilization of Project Preparation Grant (PPG).  
(Provide detailed funding amount of the PPG activities financing status  
in the table below:**

PPG Grant Approved at PIF: 219,000			
<i>Project Preparation Activities Implemented UNDP</i>	<i>GETF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Remaining Balance</i>
Formulation of the UNDP-NCE project Document, CEO Endorsement request	64,500.00	63,536.03	963.97
Formulation of Technical Report and Annexes	44,000	37,626.29	6,373.71
Workshops	41,500	21,631.26	19,868.74
UNDP Total	150,000.00	122,793.58	27,206.42
UNIDO - Relevant Assessment studies; Consultancy Inputs to CEO Endorsement Request and co-financing commitments. Validation and review by relevant mechanisms is initiated and UNIDO internal peer review and approvals completed, stakeholder and internal quality review and confirmation of co-financing commitments.	50,000.00	32,748.00	17,252.00
<b>Total</b>	<b>200,000</b>	<b>155,541.58</b>	<b>44,458.42</b>

**ANNEX D: Project Map(s) and Coordinates**

**Please attach the geographical location of the project area, if possible.**



## ANNEX E: Project Budget Table

Please attach a project budget table.

Justification for purchase of field vehicles:

The total savings on vehicle hire (which cost USD 250 per day in Aweil), for the four UNDP components is USD 139,500 (USD 67,500, USD 47,000, 10,000 and USD 15,000 respectively). Budget notes refer to the costs that would have been incurred by the project if a field vehicle were not available. The costs of purchasing to 4x4 pickup trucks, hiring drivers and their maintenance is estimated to be about 180,800. Having two vehicles at the disposal of the project would provide a number of advantages. Key among these is the availability of vehicles during critical periods, including during inclement weather when vehicles may not be available for hire. Safe, secure and reliable transport during the entire project and the flexibility provided by having project vehicles are further advantages. Finally, these vehicles will be transferred to the relevant government agencies on project completion which will support the sustainability of project activities.

### Project Budget Table (GEF Budget)

Expenditure Category	Detailed Description	Component (USDeq.)	Responsible Entity
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		<i>1</i>	<i>2</i>	<i>3</i>	<i>M &amp; E</i>	<i>Sub-Total</i>	<i>PMC</i>	Total (USDe q.)	Executing Entity receiving funds from the GFP Agency II
<b>Equipment</b>	<p>72200 Equipment and Furniture) Output 1.1.: Develop land-use and land-cover maps Purchase of GPS (Garmin GPSMAP? 64csx) .Calculation: unit cost @ 600 X 4 (units) X 1 (times) [Year 1: 2400] Sub-total = 2400ii) Output 1.3.: Dissemination of materials to extension services and farmers Procurement of motorcycles, 1 per site..Calculation: unit cost @ 5000 X 3 (units) X 1 (times) [Year 1: 3000, Year 2: 3000, Year 3: 3000, Year 4: 3000, Year 5: 3000] Sub-total = 15000Total = 17400</p>	17,400				17,400		17,400	WVSS

<b>Equipment</b>	<p>72200 Equipment and Furniture) Output 2.2.: Formation of community based groups, associations and committees for project implementation. Procurement of motorcycles, 1 per site..Calculation: unit cost @ 5000 X 3 (units) X 1 (times) [Year 1: 15000] Sub-total = 15000ii) Output 2.2.: Providing extension services to crop farmers. Procurement of one 4X4 pick up truck for transport of materials and staff to sites. This is justified on the following grounds: 1) Cost of hiring a 4X4 is USD 250 in Aweil. It will be cheaper to outright purchase vehicles than to hire them for the proposed activities; 2) Availability of vehicles is low, especially for long periods and when used off-road. Not having a reliable vehicle to transport materials and personnel can jeopardize project implementation; 3) Security considerations require that a trained and experienced driver is available at all times who follows UNDP norms and protocols for the safety of project staff and visiting consultants and dignitaries..Calculation: unit cost @ 55000 X 1 (units) X 1 (times) [Year 1: 55000] Sub-total = 55000Total = 70000</p>	70,000			70,000		70,000		
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WVSS

<b>Equipment</b>	<p>72200 Equipment and Furniture) Output 2.3.: Procurement of processing equipment and machinery e.g sorghum grinder, groundnut paste machine, groundnut sheller, manual sorghum grinders and tricycle Procurement of groundnut paste machine, groundnut sheller, 3 per site..Calculation: unit cost @ 4000 X 9 (units ) X 1 (times) during year 1 = 36000ii) Output 2.3.: Procurement of processing equipment and machinery e.g sorghum grinder, groundnut paste machine, groundnut sheller, manual sorghum grinders and tricycle Procurement of manual sorghum grinders and tricycle, 3 per site..Calculation: unit cost @ 5000 X 9 (units ) X 1 (times) during year 1 = 45000iii) Output 2.3.: Procurement of processing equipment and machinery e.g sorghum grinder, groundnut paste machine, groundnut sheller, manual sorghum grinders and tricycle Procurement of sorghum grinder, 2 per site..Calculation: unit cost @ 20000 X 6 (units ) X 1 (times) during year 1 = 120000Total = 201000</p>	201,000			201,000		201,000		To be selected at inception
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<b>Equipment</b>	72200 Equipment and Furniture i) Output 3.1.: Consulting with local authorities to identify key households to include in watershed committees Procurement of motorcycles, 1 per site. Calculation: unit cost @ 5000 X 3 (units) X 1 (times) [Year 1: 15000] Sub-total = 15000 ii) Output 3.4.: Linking water points with small scale and micro-irrigation. Procurement of micro-irrigation kits (10 kits per year for 3 sites). Calculation: unit cost @ 500 X 30 (units) X 5 (times) [, Year 2: 18750, Year 3: 18750, Year 4: 18750, Year 5: 18750] Sub-total = 75000 Total = 90000			90,000		90,000		90,000	<span style="background-color: #00FF00;">WVSS</span>
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<b>Equipment</b>	<p>72300 Materials &amp; Goods)</p> <p>Output 1.1.: Training of field staff for surveying and biophysical assessments Procurement of field implements (augers, spades, shovels) for collection of samples from field. One set per site..Calculation: unit cost @ 2000 X 3 (units) X 1 (times) [Year 1: 6000] Sub-total = 6000ii) Output 1.3.: Dissemination of materials to extension services and farmers Annual fuel and maintenance of motorcycle..Calculation: unit cost @ 1000 X 3 (units) X 5 (times) [Year 1: 3000, Year 2: 3000, Year 3: 3000, Year 4: 3000, Year 5: 3000] Sub-total = 15000iii) PMU : Motorcycle fuel and maintenance: WVSS will allocate one motorcycle for use by the Project Manager to travel to project sites. Fuel and maintence will be charged to the project Motorcycle fuel and maintence for 54 months.Calculation: unit cost @ 350 X 1 (units ) X 54 (times) [Year 1: 3150, Year 2: 4200, Year 3: 4200, Year 4: 4200, Year 5: 3150] Sub-total = 18900Total = 39900</p>	<p>39,900</p>			<p>39,900</p>		<p>39,900</p>		<p>WVSS</p>
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<b>Equipment</b>	<p>72300 Materials &amp; Goods)</p> <p>Output 2.1.: Establishing demonstration sites on progressive farmer fields Setting up demonstrations on progressive farmer sites, five farmers per boma per year..Calculation: unit cost @ 700 X 60 (units) X 4 (times) [, Year 2: 42000, Year 3: 42000, Year 4: 42000, Year 5: 42000] Sub-total = 168000ii)</p> <p>Output 2.1.: Excursions to cattle markets with progressive pastoralists and extension staff. Provision of veterinary supplies, materials and care (on two locations at each site).Calculation: unit cost @ 5000 X 6 (units) X 4 (times) [Year 1: 30000, Year 2: 30000, Year 3: 30000, Year 4: 30000] Sub-total = 120000iii)</p> <p>Output 2.1.: Identifying sites and setting up plant nurseries Preparation and planting of farms (2 per boma, 12 bomas, yearly).Calculation: unit cost @ 750 X 12 (units) X 4 (times) [, Year 2: 18000, Year 3: 18000] Sub-total = 36000iv)</p> <p>Output 2.1.: Identifying sites and setting up plant nurseries Supply of seeds and implements (5 per boma, 12 bomas, yearly..Calculation: unit cost @ 2000 X 58.0697 (units) X 3 (times) [, Year 2: 114978, Year 3: 114978, Year 4: 59231, Year 5: 59231.2] Sub-total = 348418v)</p> <p>Output 2.1.: Training cum demonstration camps for pastoralists Provision of veterinary supplies, materials and care (2 per boma, 12 bomas).Calculation: unit cost @ 1200 X 24 (units) X 4 (times) [Year 1: 28800, Year 2: 28800, Year 3: 28800, Year 4: 28800] Sub-total = 115200vi)</p> <p>Output 2.1.: Training cum demonstration camps for pastoralists Upgrading facilities on cattle camps</p>	1,821,418	1,821,418	1,821,418	<b>WVSS</b>
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Equipment	<p>72300 Materials &amp; Goods)  Output 2.3.: Establishment of management board for the agro processing centres in each of the targeted watershed Procurement of Motor Cycles + Accessories (e.g Helmets, Reflectors, Parts) for agro-processing unit field coordination  Calculation: unit cost @ 5000 X 6 (units ) X 1 (times) during year 1 = 30000ii) Output 2.3.: Procurement of purdue Improved Crop Storage (PICS), airtight bags, metal and plastic silos and post harvesting farmers trained on post harvest and storage of food grain crop using purdue Improved Crop Storage (PICS)  Procurement of metal silos (12 metal silos per Boma, 12 Bomas).Calculation: unit cost @ 22 X 144 (units ) X 1 (times) during year 1 = 3168iii) Output 2.3.: Procurement of purdue Improved Crop Storage (PICS), airtight bags, metal and plastic silos and post harvesting farmers trained on post harvest and storage of food grain crop using purdue Improved Crop Storage (PICS)  Procurement of plastic silos (12 pastic silos per Boma, 12 Bomas).Calculation: unit cost @ 22 X 144 (units ) X 1 (times) during year 1 = 3168iv) Output 2.3.: Procurement of purdue Improved Crop Storage (PICS), airtight bags, metal and plastic silos and post harvesting farmers trained on post harvest and storage of food grain crop using purdue Improved Crop Storage (PICS)  Procurement of purdue Improved Crop Storage (PICS.Calculation: unit cost @ 16 X 1200 (units ) X 5 (times) during year 1, 2, 3, 4 = 96000v) Output 2.3.: Procurement of purdue Improved Crop Storage (PICS), airtight</p>	294,336	294,336	294,336	To be selected at inception
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<b>Equipment</b>	72300 Materials & Goods) Output 3.1.: Consulting with local authorities to identify key households to include in watershed committees Annual fuel and maintenance of motorcycle..Calculation: unit cost @ 1000 X 3 (units) X 5 (times) [Year 1: 3000, Year 2: 3000, Year 3: 3000, Year 4: 3000, Year 5: 3000] Sub-total = 15000Total = 15000		15,000		15,000		15,000	WVSS
<b>Equipment</b>	72400 Communic & Audio Visual Equipi) Output 2.2.: Training materials disseminated. SD cards (10 CBO reps per boma, 12 bomas).Calculation: unit cost @ 5 X 120 (units) X 4 (times) [, Year 2: 600, Year 3: 600, Year 4: 600, Year 5: 600] Sub-total = 2400. Repeated with 2 target groups/sites. Sub-total = 4800ii) Output 2.2.: Training materials disseminated. Solar/ hand crank radios with MP3 players and card slots (10 CBO reps per boma, 12 bomas).Calculation: unit cost @ 50 X 120 (units) X 4 (times) [, Year 2: 6000, Year 3: 6000, Year 4: 6000, Year 5: 6000] Sub-total = 24000. Repeated with 2 target groups/sites. Sub-total = 48000Total = 52800	52,800			52,800		52,800	WVSS

<b>Equipment</b>	72800 Information Technology Equipmti) Output 1.1.: Training of field staff for surveying and biophysical assessments Procurement of Android based survey tablets (2 per site).Calculation: unit cost @ 500 X 6 (units) X 1 (times) [Year 1: 3000] Sub-total = 3000ii) Output 1.1.: Training of field staff for surveying and biophysical assessments Procurement of low cost drones to assist participatory transects (one per site).Calculation: unit cost @ 750 X 3 (units) X 1 (times) [Year 1: 2250] Sub-total = 2250Total = 5250	5,250			5,250		5,250	WVSS
<b>Equipment</b>	72800 Information Technology Equipmti) Output 2.2: Laptop computers for new Agriculture and Livelihoods staff to foster communication and reporting Laptops to foster communication and reporting.Calculation: unit cost @ 1260 X 2 (units) X 1 (times) [Year 1: 2520] Sub-total = 2520Total = 2520	2,520			2,520		2,520	WVSS
<b>Equipment</b>	72800 Information Technology Equipmti) Output 3.1: Laptop computers for new Water staff to foster communication and reporting Laptops to foster communication and reporting.Calculation: unit cost @ 1260 X 2 (units) X 1 (times) [Year 1: 2520] Sub-total = 2520Total = 2520		2,520		2,520		2,520	WVSS

<b>Equipment</b>	72800 Information Technology Equipmti) PMU : Laptop for Project Manager to foster communication and reporting Laptop to foster communication and reporting.Calculation: unit cost @ 1260 X 1 (units ) X 1 (times) [Year 1: 1260] Sub-total = 1260Total = 1260					-	1,260	1,260	WVSS
<b>Equipment</b>	73300 Rental & Maint of Info Tech Eqi) Output 1.1.: Web hosting fee on cloud service/online repository. Online hosting account.Calculation: unit cost @ 200 X 1 (units) X 5 (times) [Year 1: 200, Year 2: 200, Year 3: 200, Year 4: 200, Year 5: 200] Sub-total = 1000Total = 1000	1,000				1,000		1,000	WVSS
<b>Grants</b>	72600 Grantsi) Output 2.4.: Providing support for income diversification to vulnerable groups Grant to NGO to support ten community saving groups each year who are engaged in livelihood diversification including financial literacy trainings..Calculation: unit cost @ 750 X 30 (units) X 5 (times) [, Year 2: 28125, Year 3: 28125, Year 4: 28125, Year 5: 28125] Sub-total = 112500Total = 112500		112,500			112,500		112,500	WVSS
<b>Grants</b>	72600 Grantsi) Output 3.4.: Support water user groups to set up a fee and savings structure and financial literacy training. Grant to NGO to support registered water user groups for savings and financial literacy. 10 groups per site each year.Calculation: unit cost @ 250 X 30 (units) X 5 (times) [, Year 2: 9375, Year 3: 9375, Year 4: 9375, Year 5: 9375] Sub-total = 37500Total = 37500			37,500		37,500		37,500	WVSS

<b>Contractual services-Individual</b>	<p>71400 Contractual Services ? Individual) Output 1.2.: Conduct rapid market analysis to identify the potential commodities Hiring of Enumerator for data collection 12 enumerators for 2 days in each of the 12 Boma .Calculation: unit cost @ 12 X 12 (units ) X 2 (days) X 1 (times) [Year 1: 288] Sub-total = 288ii) Output 1.2.: Undertake a value chain Analysis and Mapping of non- agro and agro-based commodities Hiring of Enumerator for data collection .Calculation: unit cost @ 12 X 12 (units ) X 2 (days) X 1 (times) [Year 1: 288] Sub-total = 288Total = 576</p>	576			576		576	To be selected at inception
<b>Contractual services-Individual</b>	<p>71400 Contractual Services ? Individual) Output 2.3.: Design and construction of 2 climate-proofed post-processing units for cleaning, drying and storage in each of the targeted watershed Construction of 2 climate-proofed post-processing units for cleaning, drying and storage in each site.Calculation: unit cost @ 10000 X 6 (units ) X 1 (times) during year 1 = 60000Total = 60000</p>	60,000			60,000		60,000	To be selected at inception

<b>Contractual services-Individual</b>	<p>71800 Contractual Services-Imp Partni)  Output 1.1.: Developing monitoring and reporting site specific social and environmental safeguards including environmental impact assessments where needed. Fee for local social and environmental safeguards expert.Calculation: unit cost @ 200 X 1 (units) X 30 (days) X 1 (times) [Year 1: 3000, Year 2: 1500, Year 5: 1500] Sub-total = 6000ii) Output 1.4: Costs for Senior Project Manager toward project execution; This staff is responsible for oversight and management of all Components and ensuring quality and timely implementation. S/he will also provide technical expertise in climate related programming. S/he will also lead coordination with UNDP and with relevant counterparts in the three government ministries. Senior Project Manager @30% charged to Component 1.Calculation: unit cost @ 3150 X 1 (units) X 60 (times) [Year 1: 37800, Year 2: 37800, Year 3: 37800, Year 4: 37800, Year 5: 37800] Sub-total = 189000iii) Output 1.4: Costs for Water Engineer/Manager towards project execution; The staff will be hired on a full-time basis and responsible for overseeing implementation and monitoring of outputs under component 3 and contributing to related to watershed management under Component 1. S/he will also be responsible for coordination with relevant counterparts within the Ministry of Water Resources and Ministry of Environment. Water Engineer/ Manager @ 25% charged to Component 1.Calculation: unit cost @ 927.25 X 1 (units) X 54 (times) [Year 1: 8345, Year</p>	426,798		426,798	426,798	
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<b>Contractual services-Individual</b>	<p>71800 Contractual Services-Imp Partni)  Output 3.1: Costs for Senior Project Manager toward project execution; This staff is responsible for oversight and management of all Components and ensuring quality and timely implementation. S/he will also provide technical expertise in climate related programming. S/he will also lead coordination with UNDP and with relevant counterparts in the three government ministries. Senior Project Manager @15% charged to Component 3.Calculation: unit cost @ 1575 X 1 (units) X 60 (times) [Year 1: 18900, Year 2: 18900, Year 3: 18900, Year 4: 18900, Year 5: 18900] Sub-total = 94500ii) Output 3.1: Costs for Water Officer towards project execution; This staff is responsible for supporting the Manager in the implementation of outputs under Component 2, especially identifying and mobilizing beneficiaries, delivering training according to his/her expertise where relevant, and supporting monitoring efforts. Water Officers @100% charged to Component 3 for 48 months.Calculation: unit cost @ 2249 X 1 (units) X 48 (times) [Year 1: 13494, Year 2: 26988, Year 3: 26988, Year 4: 26988, Year 5: 13494] Sub-total = 107952iii) PMU : Costs for Northern Bahr el Ghazal Area Manager towards project execution; This staff is responsible for overseeing the support functions in Northern Bahr el Ghazal. He will be responsible for supporting the Project Manager in coordinating adequate human resources, procurement, and logistics support to the project. NReG Area Manager @5%</p>	213,201	213,201	213,201	WVSS
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<b>Contractual services-Individual</b>	<p>71800 Contractual Services-Imp Partni)  Output PMU: Costs for Project Manager towards project execution; The staff will be hired on a full-time basis and responsible for overseeing implementation and monitoring of outputs. It is also expected that the Manager will bring climate-related expertise to the project. S/he will also be responsible for coordination with relevant counterparts within the partner government line ministries. Project Manager @75% charged to PMU.Calculation: unit cost @ 2781.75 X 1 (units) X 60 (times) [Year 1: 33381, Year 2: 33381, Year 3: 33381, Year 4: 33381, Year 5: 33381] Sub-total = 166905ii) PMU : Costs for Finance and Administration Officer towards project execution; This staff will ensure that the project expenses are captured and reported correctly, and all controls are in place to ensure adequate finance processes. This position will be shared with other projects in Greater Bahr el Ghazal. Finance and Administration Officer @50% charged to PMU (other 50% shared with other projects).Calculation: unit cost @ 1089.5 X 1 (units ) X 60 (times) [Year 1: 13074, Year 2: 13074, Year 3: 13074, Year 4: 13074, Year 5: 13074] Sub-total = 65370Total = 232275</p>					-	232,275	232,275	<span style="background-color: #90EE90;">WVSS</span>
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<b>Contractual services-Individual</b>	<p>71800 Contractual Services-Imp Partnxxx) Output 2.2: Costs for Agriculture and Livelihoods Officer towards project execution; This staff is responsible for supporting the Manager in the implementation of outputs under Component 2, especially identifying and mobilizing beneficiaries, delivering training according to his/her expertise where relevant, and supporting monitoring efforts. Agriculture and Livelihoods Officers @100% charged to Component 2 for 48 months.Calculation: unit cost @ 2249 X 1 (units) X 48 (times) [Year 1: 13494, Year 2: 26988, Year 3: 26988, Year 4: 26988, Year 5: 13494] Sub-total = 107952xxx) Output 2.2: Costs for Project Manager towards project execution; The staff will be hired on a full-time basis and responsible for overseeing implementation and monitoring of outputs. It is also expected that the Manager will bring climate-related expertise to the project. S/he will also be responsible for coordination with relevant counterparts within the partner government line ministries. Agriculture and Livelihoods Manager @ 25% charged to Component 2.Calculation: unit cost @ 927.25 X 1 (units) X 60 (times) [Year 1: 11127, Year 2: 11127, Year 3: 11127, Year 4: 11127, Year 5: 11127] Sub-total = 55635xxxii) Output 2.2: Costs for Senior Project Manager toward project execution; This staff is responsible for oversight and management of all Components and ensuring quality and timely implementation. S/he will also provide technical expertise in climate related</p>	580,70 1		580,70 1	580,70 1	
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<b>Contractual services-Company</b>	<p>72100 Contractual Services-Companiesi)  Output 3.2.: Constructing and maintaining fences and enclosures. Fencing and enclosures. Aroyo and Akuem (500 ha) using local materials. Costs for all sites.Calculation: unit cost @ 60242 X 1 (units) [, Year 2: 15060, Year 3: 15060, Year 4: 15060, Year 5: 15062] Sub-total = 60242ii) Output 3.2.: Organising maintenance camps through watershed committees. Maintenance camp. Aroyo and Akuem (10,000 ha).Calculation: unit cost @ 10 X 2 (units) X 5000 (ha) [, Year 2: 25000, Year 3: 25000, Year 4: 25000, Year 5: 25000] Sub-total = 100000iii) Output 3.2.: Setting up and monitoring no-grazing zones. Protection measure for grazing. Aroyo and Akuem (1,000 ha).Calculation: unit cost @ 13 X 2 (units) X 500 (ha) [, Year 2: 3250, Year 3: 3250, Year 4: 3250, Year 5: 3250] Sub-total = 13000iv) Output 3.2.: Undertaking soil and water conservation measures in catchment areas. SWC in Aroyo and Akuem catchments (totally 10,000 ha)..Calculation: unit cost @ 74 X 2 (units) X 5000 (ha) [, Year 2: 185000, Year 3: 185000, Year 4: 185000, Year 5: 185000] Sub-total = 740000Total = 913242</p>		913,242		913,242		913,242		
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<b>Contractual services-Company</b>	<p>72100 Contractual Services-Companiesi)  Output 3.2.: Organising watering and replanting of dead saplings in the micro-watersheds. Watering and replanting. Aroyo and Akuem (3,000 ha).Calculation: unit cost @ 15 X 2 (units) X 1500 (ha) [, Year 2: 11250, Year 3: 11250, Year 4: 11250, Year 5: 11250] Sub-total = 45000ii) Output 3.2.: Undertaking assisted natural regeneration in catchment areas. Planting/afforestation Aroyo and Akuem (3,000 ha).Calculation: unit cost @ 106758 X 1 (units) [, Year 2: 26689, Year 3: 26689, Year 4: 26689, Year 5: 26691] Sub-total = 106758iii) Output 3.2.: Undertaking soil and water conservation measures on farmer fields. Soil &amp; water conservation Aroyo, Akuem and Wardit (300 ha), multiple sites as identified during inception phase..Calculation: unit cost @ 100 X 3 (units) X 100 (ha) [, Year 2: 7500, Year 3: 7500, Year 4: 7500, Year 5: 7500] Sub-total = 30000iv) Output 3.3.: Constructing and maintaining fences and enclosures to protect water harvesting points on community lands. Fence maintenance. Aroyo, Akuem and Wardit (300 ha).Calculation: unit cost @ 20 X 3 (units) X 250 (ha) [, Year 2: 3750, Year 3: 3750, Year 4: 3750, Year 5: 3750] Sub-total = 15000v) Output 3.3.: Constructing flood control and drainage structures on farm lands. Flood control. Aroyo, Akuem and Wardit (300 ha).Calculation: unit cost @ 250 X 3 (units) X 100 (ha) [, Year 2: 18750, Year 3: 18750, Year 4: 18750, Year 5: 18750] Sub-total = 75000vi) Output 3.3.: Constructing flood control structure on</p>		1,194,164	1,194,164		1,194,164	
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<b>International Consultants</b>	<p>71200 International Consultants) Output 1.1: Independent Mid-term Review (MTR) and management response Independent evaluation consultants. Calculation: unit cost @ 30000 X 1 (units) [, Year 3: 30000] Sub-total = 30000ii) Output 1.1.: CTA: i) Develop geospatial datasets; ii) Training field staff in biophysical assessments; iii) Publish data on online repository; Preparing a strategy and framework for capacity enhancement of local partners; iii) Preparing a comprehensive social mobilization strategy and action plan; iv) Identifying appropriate agriculture, animal husbandry, income and livelihood diversification options and developing site specific extension and advisory packages for agro-pastoral communities; v) Designing capacity assessment tool for partner agencies; vi) Review of policies and plans; ;vii Identifying easy to measure, gender-responsive quantitative socioeconomic vulnerability indicators; vii) Overall programme support. Fee for international consultant (CTA) for 150 days in year 1. Calculation: unit cost @ 300 X 1 (units) X 150 (days) X 1 (times) [Year 1: 45000] Sub-total = 45000iii) Output 1.1.: Developing monitoring and reporting site specific social and environmental safeguards including environmental impact assessments where needed. Fee for international social and environmental safeguards expert for 40 days year 1 and 20 days each year 2 and 5. Calculation: unit cost @ 300 X 1 (units) X 80 (days) [Year 1: 12000, Year 2: 6000, Year 5:</p>	99,000		99,000		99,000	WVSS
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<b>International Consultants</b>	<p>71200 International Consultants) Output 1.2.: Developing relevant training materials on introducing climate adaptation solutions in value chain Fee for International Consultant .Calculation: unit cost @ 650 X 1 (units ) X 20 (days) X 1 (times) [Year 1: 13000] Sub-total = 13000ii) Output 1.2.: Undertake national and sub national dialogue on incorporating strategies for climate-friendly agribusiness value chain standards into the South Sudan Industrial Policy Framework Draft, 2018 International consultant.Calculation: unit cost @ 650 X 1 (units ) X 30 (days) X 1 (times) [Year 1: 19500] Sub-total = 19500Total = 32500</p>	<p>32,500</p>			<p>32,500</p>		<p>32,500</p>	<p>To be selected at inception</p>
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<b>International Consultants</b>	<p>71200 International Consultants) Output 2.1: Independent Terminal Evaluation (TE) and management response PMU: Terminal evaluation by UNDP Evaluation Specialists and independent evaluation consultants. Calculation: unit cost @ 30000 X 1 (units) [, Year 5: 30000] Sub-total = 30000ii) Output 2.1.: International Safeguards expert. Developing, monitoring and reporting site specific interventions strategies including environmental impact assessments where needed. Fee for international social and environmental safeguards expert, 20 days each year from year 2-4. Calculation: unit cost @ 300 X 1 (units) X 80 (days) [, Year 2: 6000, Year 3: 6000, Year 4: 6000, Year 5: 6000] Sub-total = 24000 Total = 54000</p>	54,000			54,000		54,000		WVSS
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<b>Local Consultants</b>	<p>71300 Local Consultantsi) Output 1.1.: Compile statistical baselines Fee for local statistician/economist. Calculation: unit cost @ 200 X 1 (units) X 20 (days) X 1 (times) [Year 1: 4000] Sub-total = 4000ii) Output 1.1.: Developing, monitoring and reporting site specific gender and community engagement strategies and safeguards Fee for national gender and community engagement expert. Calculation: unit cost @ 200 X 1 (units) X 30 (days) X 1 (times) [Year 1: 3000, Year 2: 3000] Sub-total = 6000iii) Output 1.1.: Translation of training materials for print and podcast. Fee for local consultant. Calculation: unit cost @ 200 X 1 (units) X 20 (days) X 1 (times) [Year 1: 4000] Sub-total = 4000iv) Output 1.3.: Preparing audio recordings and audio-visual versions of the guides in Dinka and Arabic. Local expert translator from English to Arabic and Dinka. Calculation: unit cost @ 200 X 1 (units) X 20 (days) [Year 1: 4000] Sub-total = 4000v) Output 1.3.: Repackaging materials for print, social media and web-based distribution. Local communication specialist with experience in social media. Calculation: unit cost @ 200 X 1 (units) X 20 (days) X 1 (times) [Year 1: 4000] Sub-total = 4000vi) Output 1.3.: Translation of packages into local languages (Dinka and Arabic). Local expert translator from English to Arabic and Dinka. Calculation: unit cost @ 200 X 1 (units) X 20 (days) [Year 1: 4000] Sub-total = 4000Total = 26000</p>	26,000				26,000	26,000		
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<b>Local Consultants</b>	<p>71300 Local Consultantsi) Output 1.2.: Development and dissemination of Information, Education and Communication (IEC) and value chain extension materials (Charts, videos, flyers etc.) Fee for the National consultant to develop the Climate friendly Value chain IEC materials and messages translated in local language .Calculation: unit cost @ 300 X 1 (units ) X 30 (days) X 1 (times) [Year 1: 9000] Sub-total = 9000ii) Output 1.2.: Conduct rapid market analysis to identify the potential commodities Fee for National consultant.Calculation: unit cost @ 300 X 1 (units ) X 30 (days) X 1 (times) [Year 1: 9000] Sub-total = 9000iii) Output 1.2.: Conduct Stakeholder Value chain support policy dilaogue to identified gaps for Climate change adaptatation mainstraming Local consultant.Calculation: unit cost @ 300 X 1 (units ) X 5 (days) X 5 (times) [Year 1: 1500, Year 2: 1500, Year 3: 1500, Year 4: 1500, Year 5: 1500] Sub-total = 7500i) Output 1.2.: Developing Specific training materials for each of the Five (5) identify Value chain commodities Local consultant.Calculation: unit cost @ 300 X 1 (units ) X 20 (days) X 1 (times) [Year 1: 6000] Sub-total = 6000ii) Output 1.2.: Implementing the upgraded strategies for the selected 5-6 potential Value chain commodities Local consultant.Calculation: unit cost @ 300 X 1 (units ) X 5 (days) X 5 (times) [Year 1: 1500, Year 2: 1500, Year 3: 1500, Year 4: 1500, Year 5: 1500] Sub-total = 7500iii) Output 1.2.: Organize trainings to raise awareness among civil (community and market</p>	76,500			76,500		76,500	To be selected at inception
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<b>Local Consultants</b>	<p>71300 Local Consultantsi)  Output 2.3.: Conduct situation analysis on post-harvest losses with focus on gender roles Fee for Local Consultant.Calculation: unit cost @ 300 X 1 (units ) X 30 (days) X 1 (times) during year 1 = 9000ii)  Output 2.3.: Conduct training on financial literacy and business management skills to (middlemen/associations/cooperatives and processing in functional literacy, business planning and business management skills Local consultant.Calculation: unit cost @ 300 X 1 (units ) X 5 (days) X 5 (times) during year 1, 2, 3, 4, 5 = 7500iii)  Output 2.3.: Conduct training to women and men private operators on basic maintenance and operation and sustainability of power-operated processing equipment for each processing unit Local consultant.Calculation: unit cost @ 300 X 1 (units ) X 12 (days) X 2 (times) during year 1, 2 = 7200iv)  Output 2.3.: Develop Entrepreneurship Training Manuals: Start and Improve Your Business (SIYB) training Manual and Generate Your Own business idea Manual (GYBI) with innovative strategies for value-added Agricultural processing products Local consultant (One to develop SIYB and One for GYBI manual).Calculation: unit cost @ 300 X 1 (units ) X 30 (days) X 1 (times) during year 1 = 9000v)  Output 2.3.: Identifying existing self-initiative business oriented post harvesting processing women and men groups for value addition. Local consultant.Calculation: unit cost @ 300 X 1 (units ) X 30 (days) X 1 (times) during year 1 = 9000vi)</p>	109,200		109,200	109,200	109,200	To be selected at inception
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<b>Local Consultants</b>	<p>71300 Local Consultantsi) Output 2.4.: Designing a mobile ICT based system for recording and communicating records maintained by focal points in farming and pastoral communities Local consultant.Calculation: unit cost @ 200 X 1 (units) X 20 (days) X 1 (times) [Year 1: 4000] Sub-total = 4000ii) Output 2.4.: Identifying easy to measure indicators of biophysicla parameters for crop health, soil moisture, rangeland condition and livestock health. Local consultant.Calculation: unit cost @ 200 X 1 (units) X 30 (days) X 1 (times) [Year 1: 6000] Sub-total = 6000. Repeated with 2 target groups/sites. Sub-total = 12000iii) Output 2.4.: Identifying easy to measure, gender-responsive quantitative socioeconomic vulnerability indicators. Local consultant.Calculation: unit cost @ 200 X 1 (units) X 30 (days) X 1 (times) [Year 1: 6000] Sub-total = 6000iv) Output 2.4.: Training and facilitation of focal points and volunteers for recording monitoring data Local expert in use of mobile ICT tools for monitoring and reporting.Calculation: unit cost @ 200 X 1 (units) X 7 (days) X 5 (times) [Year 1: 1400, Year 2: 1400, Year 3: 1400, Year 4: 1400, Year 5: 1400] Sub-total = 7000v) Output 2.4.: Training and facilitation of project staff and extension services in collection and transmission of data to PMU Local expert in use of mobile ICT tools for monitoring and reporting.Calculation: unit cost @ 200 X 1 (units) X 7 (days) X 5 (times) [Year 1: 1400, Year 2: 1400, Year 3: 1400, Year 4: 1400, Year 5: 1400] Sub-total =</p>	36,000	36,000	36,000	WVSS
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<b>Training, Workshops, Meetings</b>	<p>75700 Training) Output 2.1.: Conducting study tours between progressive farmers, extension staff and agricultural experts including site visits. Venue and refreshments for participants (5 per boma for 12 bomas).Calculation: unit cost @ 20 X 60 (units) X 5 (days) X 5 (times) [Year 1: 6000, Year 2: 6000, Year 3: 6000, Year 4: 6000, Year 5: 6000] Sub-total = 30000ii) Output 2.1.: Identification, training and capacity building of progressive pastoralists through excursions and exchange visits Venue and refreshments for participants (4 per boma, 12 bomas).Calculation: unit cost @ 20 X 48 (units) X 5 (days) X 5 (times) [Year 1: 4800, Year 2: 4800, Year 3: 4800, Year 4: 4800, Year 5: 4800] Sub-total = 24000iii) Output 2.1.: Identify and create networks by organizing visits between livestock owners and private sector suppliers. Venue and refreshments for participants (4 per boma, 12 bomas)..Calculation: unit cost @ 20 X 48 (units) X 5 (days) X 4 (times) [Year 1: 4800, Year 2: 4800, Year 3: 4800, Year 4: 4800] Sub-total = 19200iv) Output 2.1.: Organizing visits and exchange events between farmers. Venue and refreshments for participants (20 per boma, 12 bomas).Calculation: unit cost @ 20 X 240 (units) X 2 (days) X 4 (times) [, Year 2: 9600, Year 3: 9600, Year 4: 9600, Year 5: 9600] Sub-total = 38400v) Output 2.1.: Training and capacity building of nursery groups including women groups Venue and refreshments for participants (5 per boma, 12 boma,wach years). Calculation: unit</p>	370,080	370,080	370,080	WVSS
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<b>Training, Workshops, Meetings</b>	<p>75700 Training) Output 3.1.: Conducting community meetings for forming watershed committees and selecting of office bearers Venue and refreshments for participants (4 per boma, 12 bomas).Calculation: unit cost @ 20 X 48 (units) X 20 (days) X 1 (times) [Year 1: 19200] Sub-total = 19200ii) Output 3.1.: Consulting with local authorities to identify key households to include in watershed committees Venue and refreshments for participants in meeting (10 per site).Calculation: unit cost @ 20 X 30 (units) X 20 (days) X 1 (times) [Year 1: 12000] Sub-total = 12000iii) Output 3.1.: Resource use mapping of watershed areas and resource use patterns of settlements in selected sites building on activity 1.1.4. Venue and refreshments for participants (4 per boma, 12 bomas).Calculation: unit cost @ 20 X 48 (units) X 20 (days) X 1 (times) [Year 1: 19200] Sub-total = 19200iv) Output 3.1.: Validating technical drawings and plans with the watershed committees. Venue and refreshments for participants (10 per watershed committee/site).Calculation : unit cost @ 20 X 30 (units) X 20 (days) X 1 (times) [Year 1: 12000] Sub-total = 12000v) Output 3.4.: Training of water user groups for administration and O&amp;M Venue and refreshments for participants (4 per boma for 12 bomas).Calculation: unit cost @ 20 X 48 (units) X 5 (days) X 10 (times) [, Year 2: 12000, Year 3: 12000, Year 4: 12000, Year 5: 12000] Sub-total = 48000Total = 110400</p>			110,400		110,400		110,400	WVSS
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<b>Training, Workshops, Meetings</b>	75700 Training) PMU : Inception Workshop Inception workshop within 60 days of CEO approval.Calculation: unit cost @ 3500 X 1 (units ) X 1 (times) [Year 1: 3500] Sub-total = 3500Total = 3500					-	3,500	3,500	<span style="background-color: #90EE90;">WVSS</span>
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<b>Training, Workshops, Meetings</b>	<p>75700 Trainingi) Output 1.1.: Establishing partnerships for knowledge sharing with relevant fora Travel costs per participant..Calculation: unit cost @ 11 X 40 (units) X 3 (days) X 5 (times) [Year 1: 1320, Year 2: 1320, Year 3: 1320, Year 4: 1320, Year 5: 1320] Sub-total = 6600ii) Output 1.1.: Establishing partnerships for knowledge sharing with relevant fora Workshop venue, cost per participant.Calculation: unit cost @ 30 X 40 (units) X 3 (days) X 5 (times) [Year 1: 3600, Year 2: 3600, Year 3: 3600, Year 4: 3600, Year 5: 3600] Sub-total = 18000iii) Output 1.1.: Organising local knowledge sharing events Costs of venue and refreshments (20 attendees per site).Calculation: unit cost @ 20 X 60 (units) X 2 (days) X 5 (times) [Year 1: 2400, Year 2: 2400, Year 3: 2400, Year 4: 2400, Year 5: 2400] Sub-total = 12000iv) Output 1.1.: Publish proceedings of national dialogue, prepare policy brief. Travel reimbursements for local participants..Calculation: unit cost @ 11 X 40 (units) X 1 (times) [Year 1: 440] Sub-total = 440v) Output 1.1.: Publish proceedings of national dialogue, prepare policy brief. Venue and refreshments for validation workshop cost per participant.Calculation: unit cost @ 30 X 40 (units) X 1 (times) [Year 1: 1200] Sub-total = 1200vi) Output 1.1.: Training of field staff for surveying and biophysical assessments Travel costs per participant.Calculation: unit cost @ 11 X 12 (units) X 5 (days) X 2 (times) [Year 1: 1320] Sub-total = 1320vii) Output 1.1.: Training of field staff for surveying and</p>	96,160			96,160		96,160	WVSS
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<b>Training, Workshops, Meetings</b>	<p>75700 Trainingi) Output 1.2.: Advocacy with relevant public sector departments in the targeted watershed to regulate the adoption of environmentally friendly value chain practices and technologies Venue and refreshments for participants during advocacy meeting (10 per site).Calculation: unit cost @ 20 X 30 (units ) X 2 (days) X 5 (times) [Year 1: 1500, Year 2: 1500, Year 3: 1200, Year 4: 1200, Year 5: 600] Sub-total = 6000ii) Output 1.2.: Conduct Stakeholder Value chain support policy dilaogue to identified gaps for Climate change adaptatation mainstraming Venue and refreshments for participants (10 per watershed/site) .Calculation: unit cost @ 20 X 30 (units ) X 2 (days) X 5 (times) [Year 1: 1200, Year 2: 1200, Year 3: 1200, Year 4: 1200, Year 5: 1200] Sub-total = 6000iii) Output 1.2.: Conduct Stakeholder Value chain support policy dilaogue to identified gaps for Climate change adaptatation mainstraming Venue hire for workshop at Aweil for 30 participants for all the watershed .Calculation: unit cost @ 20 X 30 (units ) X 2 (days) X 5 (times) [Year 1: 1200, Year 2: 1200, Year 3: 1200, Year 4: 1200, Year 5: 1200] Sub-total = 6000iv) Output 1.2.: Implementing the upgraded strategies for the selected 5-6 potential Value chain commodities Venue and refreshments for participants (10 per site each year, 3 sites).Calculation: unit cost @ 20 X 30 (units ) X 2 (days) X 5 (times) [Year 1: 1200, Year 2: 1200, Year 3: 1200, Year 4: 1200, Year 5: 1200] Sub-total = 6000v) Output 1.2.: Organize trainings and</p>	48,720			48,720		48,720	To be selected at inception
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<b>Training, Workshops, Meetings</b>	<p>75700 Trainingi) Output 2.3.: Provide regular technical assistance, advisory and mentoring services to the producers, fishermen, agribusiness MSMEs (Improve the technical capacities of public and private sector service providers/facilitators) on integrating climate adaptation in business plans Venue and refreshments for participants (25 per Boma, 12 bomas).Calculation: unit cost @ 20 X 60 (units ) X 2 (days) X 5 (times) during year 1, 2, 3, 4, 5 = 12000ii) Output 2.3.: Conduct training on financial literacy and business management skills to (middlemen/associations/cooperatives and processing in functional literacy, business planning and business management skills Venue and refreshments for participants (5 per Boma and 12 Bomas).Calculation: unit cost @ 20 X 60 (units ) X 5 (days) X 5 (times) during year 1, 2, 3, 4, 5 = 30000iii) Output 2.3.: Develop and implement climate friendly business plans for the each of agro processing unit in each watershed Costs of venue and refreshments (25 participants per site).Calculation: unit cost @ 20 X 75 (units ) X 2 (days) X 5 (times) during year 1, 2, 3, 4, 5 = 15000iv) Output 2.3.: Post harvesting Farmers training on post harvest and storage of food grain crop using purdue Improved Crop Storage (PICS) Venue and refreshments for 300 participants (5 post harvesting famers per boma for 12 bomas) once twice in a year.Calculation: unit cost @ 20 X 60 (units ) X 5 (days) X 10 (times) during year 1, 2, 3, 4, 5 = 60000v)</p>	264,500	264,500	264,500	To be selected at inception
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<b>Travel</b>	<p>71600 Travel) PMU :  Quarterly travel for Water Engineer/Manager; provision for quarterly flights from Aweil to Juba for R&amp;R benefit for relocateable national staff assignees who have deployed from Juba to the field site. Travel from Aweil to Juba for R&amp;R in hardship posting.Calculation: unit cost @ 550 X 18 (times) [Year 1: 1650, Year 2: 2200, Year 3: 2200, Year 4: 2200, Year 5: 1650] Sub-total = 9900ii) PMU : Training and facilitation of project staff and extension services in collection and transmission of data to PMU DSA for local for site visits for 2 PSC members or staff for 7 days twice a year for 5 years..Calculation: unit cost @ 91 X 2 (units ) X 14 (days) X 5 (times) [Year 1: 2548, Year 2: 2548, Year 3: 2548, Year 4: 2548, Year 5: 2548] Sub-total = 12740iii) PMU: Mid-term GEF and/or LDCF/SCCF Core indicators and METT or other required Tracking Tools PMU: Annually prior to GEF PIR. This will include GEF core indicators. Involves data collection through travel to sites and offices by PMU staf..Calculation: unit cost @ 5000 X 1 (units ) [Year 1: 1000, Year 2: 1000, Year 3: 1000, Year 4: 1000, Year 5: 1000] Sub-total = 5000iv) PMU: Terminal LDCF Core indicators PMU: Travel by project manager and other staff to sites and offices to gather data on core indicators using tracking tools..Calculation: unit cost @ 5000 X 1 (units ) [, Year 5: 5000] Sub-total = 5000Total = 32640</p>					-	32,640	32,640	<span style="background-color: #00FF00;">WVSS</span>
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<b>Travel</b>	<p>71600 Traveli) Output 1.1.: CTA: DSA for 90 days. DSA for international consultants for 90 days in y ear 1.Calculation: unit cost @ 192 X 1 (units) X 90 (days) X 1 (times) [Year 1: 17280] Sub-total = 17280ii) Output 1.1.: Develop land-use and land- cover maps DSA for field staff.Calculation: unit cost @ 11 X 4 (units) X 30 (days) X 1 (times) [Year 1: 1320] Sub-total = 1320iii) Output 1.1.: Develop land- use and land-cover maps Vehicle hire for field surveys and collection of ground control points.Calculation: unit cost @ 250 X 1 (units) X 20 (days) X 1 (times) [Year 1: 5000] Sub-total = 5000iv) Output 1.1.: Developing monitoring and reporting site specific social and environmental safeguards including environmental impact assessments where needed. Air fare for consultants within South Sudan.Calculation: unit cost @ 550 X 2 (units) X 6 (times) [Year 1: 3300, Year 2: 1650, Year 5: 1650] Sub-total = 6600v) Output 1.1.: Developing monitoring and reporting site specific social and environmental safeguards including environmental impact assessments where needed. DSA for international social and environmental safeguards expert for 30 days in year 1 and 15 days each in year 2 and 5.Calculation: unit cost @ 192 X 1 (units) X 60 (days) X 1 (times) [Year 1: 5760, Year 2: 2880, Year 5: 2880] Sub-total = 11520vi) Output 1.1.: Developing monitoring and reporting site specific social and environmental safeguards including environmental impact assessments where needed. DSA for local consultants Calculation:</p>	<p>225,16 7</p>		<p>225,16 7</p>	<p>225,16 7</p>	<p>WVSS</p>
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<b>Travel</b>	<p>71600 Traveli) Output 1.2.: Development and dissemination of Information, Education and Communication (IEC) and value chain extension materials (Charts, videos, flyers etc.) DSA for the field staffs to disseminate printing materials .Calculation: unit cost @ 11 X 12 (units ) X 5 (days) X 3 (times) [Year 1: 990, Year 2: 495, Year 3: 495] Sub-total = 1980ii) Output 1.2.: Development and dissemination of Information, Education and Communication (IEC) and value chain extension materials (Charts, videos, flyers etc.) DSA for the National Consultant .Calculation: unit cost @ 91 X 1 (units ) X 30 (days) X 1 (times) [Year 1: 2730] Sub-total = 2730iii) Output 1.2.: Advocacy with relevant public sector departments in the targeted watershed to regulate the adoption of environmentally friendly value chain practices and technologies DSA for field staff ( 2 per site).Calculation: unit cost @ 11 X 6 (units ) X 2 (days) X 5 (times) [Year 1: 165, Year 2: 165, Year 3: 132, Year 4: 132, Year 5: 66] Sub-total = 660iv) Output 1.2.: Advocacy with relevant public sector departments in the targeted watershed to regulate the adoption of environmentally friendly value chain practices and technologies DSA for public and private sector participants during advocacy meeting (10 per site for 3 sites).Calculation: unit cost @ 11 X 30 (units ) X 2 (days) X 5 (times) [Year 1: 825, Year 2: 825, Year 3: 660, Year 4: 660, Year 5: 330] Sub-total = 3300v) Output 1.2.: Conduct rapid market analysis to identify the potential commodities</p>	<p>125,040</p>		<p>125,040</p>		<p>125,040</p>	<p>To be selected at inception</p>
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<b>Travel</b>	71600 Traveli) Output 2.1.:	340,57 0	340,57 0	340,57 0	<b>WVSS</b>
	Conducting study tours between progressive farmers, extension staff and agricultural experts including site visits. DSA for workshop participants (5 per boma for 12 bomas).Calculation: unit cost @ 11 X 60 (units) X 5 (days) X 5 (times) [Year 1: 3300, Year 2: 3300, Year 3: 3300, Year 4: 3300, Year 5: 3300] Sub-total = 16500ii) Output 2.1.:				
	Excursions to cattle markets with progressive pastoralists and extension staff. DSA for progressive pastoralists (4 per boma, 12 bomas)..Calculation: unit cost @ 11 X 48 (units) X 5 (days) X 4 (times) [Year 1: 2640, Year 2: 2640, Year 3: 2640, Year 4: 2640] Sub-total = 10560iii) Output 2.1.:				
	Identification, training and capacity building of progressive pastoralists through excursions and exchange visits DSA for workshop participants (4 per boma, 12 bomas).Calculation: unit cost @ 11 X 48 (units) X 5 (days) X 5 (times) [Year 1: 2640, Year 2: 2640, Year 3: 2640, Year 4: 2640, Year 5: 2640] Sub-total = 13200iv) Output 2.1.:				
	Identify and create networks by organizing visits between livestock owners and private sector suppliers. DSA for workshop participants (4 per boma, 12 bomas)..Calculation: unit cost @ 11 X 48 (units) X 5 (days) X 4 (times) [Year 1: 2640, Year 2: 2640, Year 3: 2640, Year 4: 2640] Sub-total = 10560v) Output 2.1.:				
	International Safeguards expert. Developing monitoring and reporting site specific interventions strategies including environmental impact assessments where needed. Travel for international social and environmental safeguards				

<p><b>Travel</b></p>	<p>71600 Traveli) Output 2.3.: Provide regular technical assistance, advisory and mentoring services to the producers, fishermen, agribusiness MSMEs (Improve the technical capacities of public and private sector service providers/facilitators) on integrating climate adapation in business plans DSA for meeting participants (25 per Boma, 12 Bomas.Calculation: unit cost @ 11 X 60 (units ) X 2 (days) X 5 (times) during year 1, 2, 3, 4, 5 = 6600ii) Output 2.3.: Provide regular technical assistance, advisory and mentoring services to the producers, fishermen, agribusiness MSMEs (Improve the technical capacities of public and private sector service providers/facilitators) on integrating climate adapation in business plans Travel and DSA for field staff ( 3 per site).Calculation: unit cost @ 11 X 9 (units ) X 2 (days) X 10 (times) during year 1, 2, 3, 4, 5 = 1980iii) Output 2.3.: Conduct situation analysis on post-harvest losses with focus on gender roles Air travel for local consultant.Calculation: unit cost @ 550 X 1 (units ) X 1 (times) during year 1 = 550iv) Output 2.3.: Conduct situation analysis on post-harvest losses with focus on gender roles DSA for field staffs supporting the local consultant.Calculation: unit cost @ 11 X 2 (units ) X 20 (days) X 1 (times) during year 1 = 440v) Output 2.3.: Conduct situation analysis on post-harvest losses with focus on gender roles DSA for local consultant.Calculation: unit cost @ 91 X 1 (units ) X 30 (days) X 1 (times) during year 1 = 2730vi) Output</p>	<p>269,659</p>	<p>269,659</p>	<p>269,659</p>	<p>To be selected at inception</p>
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<b>Travel</b>	<p>71600 Traveli) Output 3.1: Vehicle hire to support the transportation of staff and light materials to project sites. This is intended to supplement use of the purchased vehicle to ensure staff movement between two counties. Vehicle hire to support staff for Component 2 activities .Calculation: unit cost @ 250 X 1 (units) X 60 (times) [Year 1: 3000, Year 2: 3000, Year 3: 3000, Year 4: 3000, Year 5: 3000] Sub-total = 15000ii) Output 3.1.: Consulting with local authorities to identify key households to include in watershed committees DSA for meeting participants.Calculation: unit cost @ 11 X 30 (units) X 20 (days) X 1 (times) [Year 1: 6600] Sub-total = 6600iii) Output 3.1.: Validating technical drawings and plans with the watershed committees. DSA for meeting participants.Calculation: unit cost @ 11 X 30 (units) X 20 (days) X 1 (times) [Year 1: 6600] Sub-total = 6600iv) Output 3.4.: Training of water user groups for administration and O&amp;M DSA for meeting participants (4 per boma).Calculation: unit cost @ 11 X 48 (units) X 5 (days) X 10 (times) [, Year 2: 6600, Year 3: 6600, Year 4: 6600, Year 5: 6600] Sub-total = 26400Total = 54600</p>		54,600		54,600		54,600	WVSS	
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<b>Office Supplies</b>	72500 Supplies) PMU : Visibility Items: The project will procure materials with project information, including WVSS, UNDP, and government names and logos. This will include sign boards for static project sites, banners for events, and stickers for labeling assets. It may also include vests and caps for staff. Visibility to communicate project information.Calculation: unit cost @ 10000 X 1 (units ) [Year 1: 10000] Sub-total = 10000Total = 10000					-	10,000	10,000	WVSS
<b>Other Operating Costs</b>	74100 Professional Servicesi) PMU : Audit PMU: Audit firm appointed for project audits.Calculation: unit cost @ 40000 X 1 (units ) [Year 1: 8000, Year 2: 8000, Year 3: 8000, Year 4: 8000, Year 5: 8000] Sub-total = 40000Total = 40000					-	40,000	40,000	WVSS

<b>Other Operating Costs</b>	<p>74200 Audio Visual&amp;Print Prod Costsi) Output 1: Office stationary, printing, flash drives and stationary for field work [Year 1: 1772, Year 2: 1772, Year 3: 1772, Year 4: 1772, Year 5: 1776] Sub-total = 8864ii) Output 1.2.: Development and dissemination of Information, Education and Communication (IEC) and value chain extension materials (Charts, videos, flyers etc.) Flash Drives, SD cards containing Climate friendly Value chain Videos, Messages (20 pcs for distribution to CBO reps per boma, 12 bomas).Calculation: unit cost @ 10 X 240 (units ) X 2 (times) [Year 1: 2400, Year 2: 2400] Sub-total = 4800iii) Output 1.2.: Development and dissemination of Information, Education and Communication (IEC) and value chain extension materials (Charts, videos, flyers etc.) Printing Materials) brochure, leaflets, poster, stickersand flyers for distribution anddisplay (500 pcs of Printing Materials per Boma, 12 Bomas).Calculation: unit cost @ 1000 X 1 (units ) X 3 (times) [Year 1: 1500, Year 2: 750, Year 3: 750] Sub-total = 3000Total = 16664</p>	16,664				16,664		16,664	WVSS & to be selected at inception
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<b>Other Operatin g Costs</b>	<p>74200 Audio Visual&amp;Print Prod Costsi) Output 1: Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions. Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions. [Year 1: 15936, Year 2: 15936, Year 3: 15936, Year 4: 15936, Year 5: 15939] Sub-total = 79683ii) Output 1.1.: Establishing partnerships for knowledge sharing with relevant fora Printing of proceedings and brochures.Calculation: unit cost @ 1000 X 1 (units) X 5 (times) [Year 1: 1000, Year 2: 1000, Year 3: 1000, Year 4: 1000, Year 5: 1000] Sub-total = 5000iii) Output 1.1.: Publish proceedings of national dialogue, prepare policy brief. Printing of proceedings and recommendations.Calculati on: unit cost @ 1000 X 1 (units) X 1 (times) [Year 1: 1000] Sub-total = 1000iv) Output 1.1.: Translation of training materials for print and podcast. Printing of materials.Calculation: unit cost @ 1000 X 1 (units) X 1 (times) [Year 1: 1000] Sub-total = 1000v) Output 1.3.: Dissemination of materials to extension services and farmers Printing and publication.Calculation: unit cost @ 1000 X 1 (units) X 5 (times) [Year 1: 1000, Year 2: 1000, Year 3: 1000, Year 4:</p>	92,683		92,683		92,683	WVSS
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<b>Other Operating Costs</b>	74200 Audio Visual&Print Prod Costsi) Output 2: Office stationary, printing, flash drives and stationary for field work during year 1, 2, 3, 4, 5 = 6305Total = 6305		6,305			6,305		6,305	WVSS
<b>Other Operating Costs</b>	74200 Audio Visual&Print Prod Costsi) Output 2: Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions. Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions..Calculation: unit cost @ 119037 [Year 1: 23807, Year 2: 23807, Year 3: 23807, Year 4: 23807, Year 5: 23809] Sub-total = 119037ii) Output 2.2.: Training materials disseminated. Print materials (20 CBO reps per boma, 12 bomas).Calculation: unit cost @ 1000 X 1 (units) X 4 (times) [, Year 2: 1000, Year 3: 1000, Year 4: 1000, Year 5: 1000] Sub-total = 4000. Repeated with 2 target groups/sites. Sub-total = 8000Total = 127037		127,037			127,037		127,037	WVSS

<b>Other Operating Costs</b>	74200 Audio Visual&Print Prod Costsi) Output 3: Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions. Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions..Calculation: unit cost @ 81201 [Year 1: 16240, Year 2: 16240, Year 3: 16240, Year 4: 16240, Year 5: 16241] Sub-total = 81201ii) Output 3.1.: Resource use mapping of watershed areas and resource use patterns of settlements in selected sites building on activity 1.1.4. Printouts, stationary and materials for participatory exercises (one per boma).Calculation: unit cost @ 500 X 12 (units) X 1 (times) [Year 1: 6000] Sub-total = 6000Total = 87201		87,202		87,202		87,202	WVSS	
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<b>Other Operating Costs</b>	74200 Audio Visual&Print Prod Costsi) Output PMU PMU : Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions. Project Support Services: Contribution to WVSS project support services rate including human resources, procurement, and logistics staffing services, mobile phone credit, stationaries and consumable supplies, and internet subscriptions..Calculation: unit cost @ 127215 [Year 1: 25443, Year 2: 25443, Year 3: 25443, Year 4: 25443, Year 5: 25443] Sub-total = 127215Total = 127215					-	127,215	127,215	WVSS
<b>Other Operating Costs</b>	74700 Transporti) Output 2.3.: Transporation of post harvesting equipments and materials 1.Calculation: unit cost @ 7000 X 1 (units ) X 1 (times) during year 1 = 7000ii) Output 2.3.: Transportation of the Processing equipment and machinery- Flight charter .Calculation: unit cost @ 7000 X 9 (units ) X 1 (times) during year 1 = 63000Total = 70000	70,000				70,000		70,000	To be selected at inception

<b>Other Operating Costs</b>	74700 Transporti) Output 2.4: Transportation of materials (seeds, agricultural tools and kits, veterinary items and kits, and other materials which can not be purchased in Aweil) from Juba to Aweil Cargo transportation by truck rental from Juba to Aweil.Calculation: unit cost @ 3000 X 1 (units) X 8 (times) [Year 1: 3000, Year 2: 6000, Year 3: 6000, Year 4: 6000, Year 5: 3000] Sub-total = 24000Total = 24000		24,000			24,000		24,000	WVSS
<b>Other Operating Costs</b>	74700 Transporti) Output 3.4: Transportation of materials for the restoration or construction of materials for water infrastructures and for tools and other items for watershed management activities from Juba to Aweil Cargo transportation by truck rent from Juba to Aweil.Calculation: unit cost @ 3000 X 1 (units) X 8 (times) [Year 1: 3000, Year 2: 6000, Year 3: 6000, Year 4: 6000, Year 5: 3000] Sub-total = 24000Total = 24000			24,000		24,000		24,000	WVSS
		1,329,358	4,866,626	2,741,829	-	8,937,813	446,890	9,384,703	

**Summary of Funds**

	Amount	Amount	Amount	Amount	Amount	Total
	Year1	Year 2	Year 3	Year 4	Year 5	
LDCF	1,050,886	1,529,698	1,540,203	1,436,456	1,339,218	6,896,461
GEFTF	0	228,310	228,310	228,310	228,312	913,242

Ministry of Environment & Forestry, Govt. of South Sudan (public investment)	440,526	440,526	440,526	440,526	440,528	2,202,632
Ministry of Agriculture & Food Security, Govt. of South Sudan (public investment)	533,157	533,157	533,157	533,157	533,161	2,665,789
Ministry of Water Resources & Irrigation, Govt. of South Sudan (in-kind)	0	1,552,302	1,552,302	1,552,302	1,552,305	6,209,211
Ministry of Trade and Industry (in-kind)	600,000	600,000	600,000	600,000	600,000	3,000,000
Ministry of Agriculture & Food Security, Govt. of South Sudan (in-kind)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
Ministry of Environment & Forestry, Govt. of South Sudan (in-kind)	600,000	600,000	600,000	600,000	600,000	3,000,000
WVSS	156,000	156,000	156,000	156,000	156,000	780,000
UNDP TRAC	74,000	19,000	19,000	19,000	19,000	150,000

UNIDO (LDCF Funding for Component 1 and 2)	854,306	200,196	188,660	187,415	144,423	1,575,000
UNIDO (in kind)	190,000	190,000	190,000	190,000	190,000	950,000
UNIDO (grant)	10,000	10,000	10,000	10,000	10,000	50,000
<b>Subtotal LDCF + GEFTF (WVSS + UNIDO)</b>	1,905,192	1,958,204	1,957,173	1,852,181	1,711,953	9,384,703
<b>Subtotal Co-financing</b>	3,603,683	5,100,985	5,100,985	5,100,985	5,100,994	24,007,632
<b>TOTAL</b>	<b>5,508,875</b>	<b>7,059,189</b>	<b>7,058,158</b>	<b>6,953,166</b>	<b>6,812,947</b>	<b>33,392,335</b>

**ANNEX F: (For NGI only) Termsheet**

Instructions. Please submit a finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

**ANNEX G: (For NGI only) Reflows**

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agency is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

**ANNEX H: (For NGI only) Agency Capacity to generate reflows**

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).