Enhancing the resilience of agriculture and livestock producers through improved watershed management and development of environmentally-positive value chains in South East Mauritania

Part I: Project Information

GEF ID
10176

Project Type
FSP

Type of Trust Fund
LDCF

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Enhancing the resilience of agriculture and livestock producers through improved watershed management and development of environmentally-positive value chains in South East Mauritania

Countries
Mauritania

Agency(ies)
FAO

Other Executing Partner(s)
Ministry of Environment and Sustainable Development (MEDD)

Executing Partner Type
Government

GEF Focal Area
Climate Change

Taxonomy

Climate Change, Focal Areas, Climate Change Adaptation, Climate resilience, Mainstreaming adaptation, Least Developed Countries, Ecosystem-based Adaptation, Climate finance, Adaptation Tech Transfer, Complementarity, Innovation, Livelihoods, National Adaptation Plan, Private sector, Community-based adaptation, Influencing models, Strengthen institutional capacity and decision-making, Demonstrate innovative approache, Transform policy and regulatory environments, Deploy innovative financial instruments, Stakeholders, Communications, Awareness Raising, Behavior change, Education, Private Sector, Financial intermediaries and market facilitators, SMEs, Individuals/Entrepreneurs, Type of Engagement, Partnership, Information Dissemination, Consultation, Participation, Civil Society, Community Based Organization, Trade Unions and Workers Unions, Academia, Non-Governmental Organization, Beneficiaries, Local Communities, Gender Equality, Gender Mainstreaming, Women groups, Gender-sensitive indicators, Sex-disaggregated indicators, Gender results areas, Participation and leadership, Knowledge Generation and Exchange, Capacity Development, Access and control over natural resources, Access to benefits and services, Capacity, Knowledge and Research, Knowledge Generation, Learning, Adaptive management, Indicators to measure change, Theory of change, Knowledge Exchange, Peer-to-Peer, South-South

Sector

Mixed & Others

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Submission Date

12/1/2021

Expected Implementation Start

6/1/2022

Expected Completion Date

6/1/2026

Duration

48In Months

Agency Fee($)

419,540.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCA-1	Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	LDCF	3,540,000.00	12,961,584.00
CCA-2	Mainstream climate change adaptation and resilience for systemic impact	LDCF	876,210.00	2,685,416.00
		Total Project Cost($)	**4,416,210.00**	**15,647,000.00**

B. Project description summary

Project Objective

Strengthen the resilience of vulnerable rural populations by improving agriculture and livestock sector planning and the application of innovative practices at watershed level in Mauritania. Indicator: Number of vulnerable agro-sylvo-pastoralists (ASP) from rural communities in target watersheds showing an enhanced resilience and adopting adaptive practices Target: 100,000 (50% women) vulnerable agro-sylvo-pastoralists from rural communities in target water-sheds showing an enhanced resilience and adopting adaptive practices

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1. Adaptation and resilience practices secured through community-centred watershed management planning and participatory governance schemes	Technical Assistance	Outcome 1: ASP producers are cooperatively and effectively managing shared resources using an integrated watershed-management approach to address climate change impacts and build resilience at watershed level	Output.1.1: Community-based governance structures established and operationalised to mainstream climate resilience into watershed governance, using an integrated watershed management approach Output 1.2: Climate-proof, integrated watershed management plans developped and implemented at watershed level to enhance resilience of vulnerable rural communities Output 1.3: Human and institutional capacity and local knowledge strengthened to strategically address climate vulnerabilities and enhance resilience at watershed	LDCF	371,760.00	1,500,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
2. Climate-sensitive practices and innovations applied to support the uptake of resilience measures by vulnerable communities and promote sustainable use of re-sources in watershed ecosystems	Investment	Outcome 2: Agro-sylvo-pastoral producers are using innovative solutions and climate coping practices to enhance climate resilience and resource sustainability at watershed level	Output 2.1: Knowledge, adaptive practices and innovations mainstreamed through Agro-Pastoral Field Schools Output 2.2: Productive landscapes restored and ecosystems functionality supported at watershed level to enhance resilience Output 2.3: Investments in climate-resilient and income-generating activities in target watersheds catalysed through innovative financial mechanisms	LDCF	3,414,514.00	11,400,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
3. Lessons learned are captured, mainstreamed and upscaled using adapted M&E and KM approaches	Technical Assistance	Outcome 3: Climate-resilient and adaptive practices are mainstreamed into decision-making processes and lessons learned are widely disseminated	Output 3.1: Project results mainstreamed to enhance resilience and adaptive policies Output 3.2: Project lessons captured and knowledge managed & disseminated Output 3.3: Effective Monitoring, Evaluation and Learning (MEL) implemented	LDCF	419,640.00	2,000,000.00
			Sub Total ($)		**4,205,914.00**	**14,900,000.00**

Project Management Cost (PMC)		
LDCF	210,296.00	747,000.00
Sub Total($)	**210,296.00**	**747,000.00**
Total Project Cost($)	**4,416,210.00**	**15,647,000.00**

Please provide justification

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	National Agency for the Great Green Wall	Grant	Investment mobilized	800,000.00
Recipient Country Government	National Agency for the Great Green Wall	In-kind	Recurrent expenditures	3,400,000.00
Recipient Country Government	National Agency for the Great Green Wall	In-kind	Recurrent expenditures	300,000.00
GEF Agency	FAO	Grant	Investment mobilized	10,000,000.00
GEF Agency	FAO	Grant	Investment mobilized	700,000.00
GEF Agency	FAO	In-kind	Recurrent expenditures	447,000.00
			Total Co-Financing($)	**15,647,000.00**

Describe how any "Investment Mobilized" was identified

The National Agency for the Great Green Wall is providing co-financing that amounts to USD 4.5m distributed as follows: USD 800,000 as investment including interventions across the target landscapes in the 4 wilayas, USD 3.4m as recurrent expenditures and USD 300,000 as in-kind cofinancing through staff time and technical backstopping. FAO will provide USD 700,000 through technical cooperation projects (Joint UNJP project + TCP projects) as a new investment as well as USD 447,000 as in-kind cofinancing through staff time, office/meeting facilities and technical backstopping. Finally, GCF funds will be mobilized as cofinancing through an FAO-implemented project (SURAGGWA).

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	LDCF	Mauritania	Climate Change	NA	4,416,210	419,540	4,835,750.00
			Total Grant Resources($)		**4,416,210.00**	**419,540.00**	**4,835,750.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount ($)

150,000

PPG Agency Fee ($)

14,250

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	LDCF	Mauritania	Climate Change	NA	150,000	14,250	**164,250.00**
			Total Project Costs($)		**150,000.00**	**14,250.00**	**164,250.00**

Meta Information - LDCF

LDCF true
SCCF-B (Window B) on technology transfer false
SCCF-A (Window-A) on climate Change adaptation false

Is this project LDCF SCCF challenge program?
false

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

---

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

---

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

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

This Project has an urban focus. false

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

Agriculture	**50.00%**
Natural resources management	**50.00%**
Climate information Services	**0.00%**
Costal 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%**

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

Sea level rise false
Change in mean temperature true
Increased Climatic Variability true
Natural hazards true
Land degradation true
Costal and/or Coral reef degradation false
GroundWater quality/quantity false

To calculate the core indicators, please refer to Results Guidance

Core Indicators - LDCF

CORE INDICATOR 1	Total	Male	Female	% for Women
Total number of direct beneficiaries	145,040	72,520	72,520	50.00%

CORE INDICATOR 2	
Area of land managed for climate resilience (ha)	71,500.00

CORE INDICATOR 3	
Total no. of policies/plans that will mainstream climate resilience	0

CORE INDICATOR 4		Male	Female	% for Women
Total number of people trained	10,148	5,074	5,074	50.00%

OUTPUT 1.1.1

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

---

	Male	Female

Total number of direct beneficiaries from more resilient physical assets	**100,000**	**50,000**	**50,000**

Ha of agriculture land	Ha of urban landscape	Ha of rural landscape	No. of residential houses
7,000.00		**64,500.00**	**0**

No. of public buildings	No. of irrigation or water structures	No. of fishery or aquaculture ponds	No. of ports or landing sites
0	**0**	**0**	**0**

Km of road	Km of riverban	Km of coast	Km of storm water drainage

Other	Other(unit)	Comments
0		

OUTPUT 1.1.2

Livelihoods and sources of income of vulnerable populations diversified and strengthened

---

		Male	Female
Total number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	**45,000**	**22,500**	**22,500**

Livelihoods and sources of incomes strengthened / introduced			
Agriculture	Agro-Processing	Pastoralism/diary	Enhanced access to markets
true	**true**	**true**	**true**
Fisheries /aquaculture	Tourism /ecotourism	Cottage industry	Reduced supply chain
false	**false**	**false**	**false**
Beekeeping	Enhanced opportunity to employment	Other	Comments
false	**true**	**false**	

OUTPUT 1.1.3

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

---

		Male	Female
Total number of direct beneficiaries from the new/improved climatic information systems	**0**	**0**	**0**

Climate hazards addressed

Flood	Storm	Heatwave	Drought
false	**false**	**false**	**false**

Other	Comments
false	

Climate information system developed/strengthened

Downscaled Climate model	Weather/Hydromet station	Early warning system	Other
false	**false**	**false**	**false**

Comments

Climate related information collected

Temperature	Rainfall	Crop pest or disease	Human disease vectors
false	**false**	**false**	**false**

Other	Comments
false	

Mode of climate information disemination

Mobile phone apps	Community radio	Extension services	Televisions
false	**false**	**false**	**false**

Leaflets	Other	Comments
false	**false**	

OUTPUT 1.1.4

Vulnerable natural ecosystems strengthened in response to climate change impacts

Types of natural ecosystem

Desert	Coastal	Mountainous	Grassland
true	**false**	**true**	**true**

Forest	Inland water	Other	Comments
true	**false**	**false**	

OUTPUT 1.2.1

Incubators and accelerators introduced

		Male	Female
Total no. of entrepreneurs supported	**0**	**20**	**20**

		Comments
No. of incubators and accelerators supported	**0**	

		Comments
No. of adaptation technologies supported	**0**	

OUTPUT 1.2.2

Financial instruments or models to enhance climate resilienced developed

---

Financial instruments or models

PPP models	Cooperatives	Microfinance	Risk insurance
false	**true**	**true**	**false**

Equity	Loan	Other	Comments
false	**false**	**false**	

OUTPUT 2.1.1

Cross-sectoral policies and plans incorporate adaptation considerations

---

Will mainstream climate resilience	Of which no. of regional policies/plans	Of which no. of national policies/plan
0	**0**	**0**

Sectors

Agriculture	Fishery	Industry	Urban
true	**false**	**false**	**false**

Rural	Health	Water	Other
true	**false**	**true**	**false**

Comments

OUTPUT 2.1.2

Cross sectoral institutional partnerships established or expanded

---

No. of institutional partnerships established or strengthened	**0**

Comments

OUTPUT 2.1.3

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

---

No. of systems and frameworks	**0**

Comments

OUTPUT 2.1.4

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

---

No. of systems and frameworks **0**

Comments

OUTPUT 2.2.1

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

---

No. of institution(s)

Comments

OUTPUT 2.2.2

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

No. of mechanism(s)

Comments

OUTPUT 2.2.3

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

No. of initiatives or technologies

Comments

OUTPUT 2.2.4

Public investment mobilized

Amount of investment
(US$)

Comments

OUTPUT 2.2.5

Private investment mobilized

Amount of investment
(US$)

Comments

OUTPUT 2.3.1

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

---

		Male	Female
Total no. of people trained	**10,148**	**5,074**	**5,074**
		Male	Female
Of which total no. of people at line ministries	**40**	**20**	**20**
		Male	Female
Of which total no. of community/association	**10,000**	**5,000**	**5,000**
		Male	Female
Of which total no. of extension service officers	**108**	**54**	**54**
		Male	Female
Of which total no. of hydromet and disaster risk management agency staff	**0**	**0**	**0**
		Male	Female
Of which total no. of small private business owners	**0**	**0**	**0**
		Male	Female
Of which total no. school children, university students or teachers	**0**	**0**	**0**
Other	Comments		

OUTPUT 2.3.2

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

		Male	Female
No. of people with raised awareness	**0**	**0**	**0**

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

---

No. of national climate policies and plans

Comments

OUTPUT 3.1.2

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

---

No. of systems and frameworks

Comments

OUTPUT 3.1.3

Vulnerability assessments conducted

No. of assessments conducted

Comments

OUTPUT 3.2.1

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

---

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

---

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

Comments

OUTPUT 3.3.1

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

		Male	Female
Total no. of people trained	**0**	**0**	**0**
		Male	Female
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**

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

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description).

A) Introduction: global environment / adaptation problem

a) Problem context

1. A Least-Developed Country, Mauritania is located in Northwest Africa with most of its population of 4.6 million[1][1] living in the country?s southern Sahelian zone. The remaining 75% of the country is part of the largely uninhabited Sahara desert. As of 2019, Mauritania ranked 157 out of 189 on the Human Development Index (HDI). Approximately 44.4% of the population lives in poverty and 25.1% live in extreme poverty[2][2]. The country?s most vulnerable populations live in rural areas and depend upon livestock and agriculture production for their livelihood. According to the World Bank, approximately 50% population and more than 75% of the country?s poor depend upon agriculture and livestock. Over 61% of rural Mauritanians earn less than US$ 1.5 per day[3][3].

2. Mauritania is divided into two climatic zones: the Saharan-Sahel region to the North and the Sahel region to the South. The proposed LDCF project will intervene in the Saharan-Sahel zone. Across both zones, the hot and dry trade winds blow from September to June. The anticyclone humid winds occur during the remainder of the year, bringing limited rainfall. Both winds contribute to soil erosion desert expansion which moves from North to the South. The country is at constant risk of drought and desertification. Only 0.5 % of the national territory is arable, mostly in the Senegal River flood plain. Nearly 70% of freshwater withdrawals in Mauritania are dedicated to agriculture, an estimated 1.7 billion cubic meters annually. Water access and supply (infrastructure, services and institutional capacity), water harvesting, water use efficiency and productivity are limited.

3. Mauritania is administratively organized into regions (wilayas), departments and communes. Nationally, there are 15 regions, 44 departments, and 250 communes. The proposed project will target four watersheds within four South-East Mauritania wilayas, namely Tidjikja (Tagant), Barbara (Hodh el Gharbi), Meisah (Assaba) and Tektak?-Dafort (Guidimakha).

4. These regions are located along the border with Senegal and Mali. They are part Mauritania?s eastern and southern agricultural belt situated along the uplands of the Senegal River. Local communities rely upon farming and livestock production. The most vulnerable depend upon rainwater for rain-fed agriculture and nomadic cattle breeding.

5. The area is strongly influenced by the permanent presence of water. The hydrographical network is defined by a vast endorheic system of 71,500 ha with between 200 and 400mm/year isohyets. In these areas with low annual precipitation levels, the hydrological network plays a key role for rural development, concentrating agricultural, forestry and pastoral activities in limited areas. While rain water percolates into sandy soils, compact or clay soils are found along waterways and depressions. This results in a mosaic of pools, swamps, marigots and rivers along main waterways.

Summary of anticipated climate changes & high-impact climatic events in the target regions

6. A detailed Climate Risk Assessment was conducted during the PPG phase and is available in Annex M ? along with detailed maps showing the projected evolution of climatic parameters under the Representative Concentration Pathway (RCP) 4.5 and 8.5 scenarios and over the 2011-2040, 2041-2070 and 2071-2100 periods. Key findings from the Climate Risk Assessment have informed the whole project design; the main results in terms of anticipated climate changes in the target regions are summarised below.

7. **Temperatures**: most General Circulation Models (GCM) and Regional Climate Models (RCM) from the Coupled Model Intercomparison Project Phase 5 (CMIP5) capture a temperature increase, with a robust response to greenhouse gas emissions likely to intensify over the 21st century.

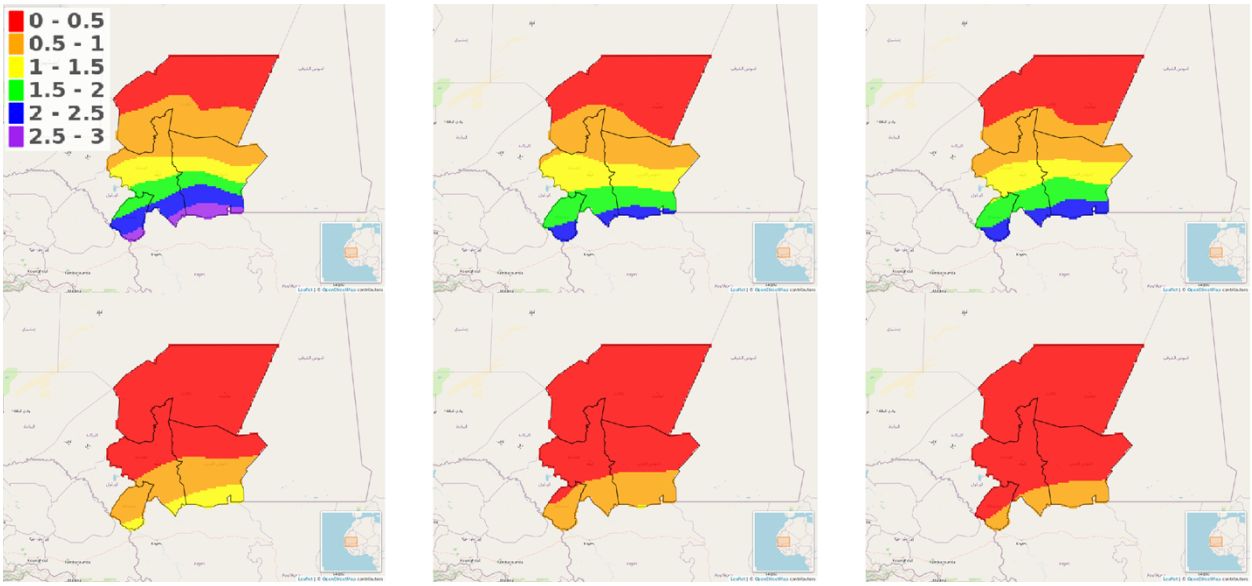
8. The 20-22?C isotherm (average Tmin) is projected to move northwards across all project areas between January and April; except for Tagant. From May to August, the 26?C isotherm (average Tmin) is expected to extend throughout the whole project area, with average Tmin exceeding 30?C along Assaba and Guidimakha from 2040 onwards, and surpassing 34?C along Hodh el Gharbi under RCP 8.5 by the end of the century. Overall, this implies that night-time heatwaves (higher than 30?C) are expected to increase in duration, intensity, and frequency across project areas ? in particular during the summertime in southernmost provinces.

9. From January to April, a 2 to 4?C increase in average Tmax is projected across all project areas, with an isotherm displacement towards north-eastern parts. However, a different pattern to that of January and April is displayed from May to August: for the latter months, the easternmost areas will experience a highest temperature increase (4 to 8?C increase under RCP 8.5). More in-depth analysis shows an average Tmax expected to exceed 40?C during the boreal summer and reach up to 44-46?C on average along the easternmost parts of the project area. As a result, long-lasting daytime extreme heatwaves between May and August are projected to increase in duration, intensity, and frequency.

10. **Rainfall**: the target region is governed by the displacement of the Intertropical Convergence Zone (ITCZ), i.e. the convergence of trade winds from both hemispheres. The ITCZ moves northwards as the boreal summer peaks, and vice versa during the winter months. Under normal conditions, the ITCZ reaches the highest latitudes (19?N) along West Africa at the end of August, coinciding with heavy precipitation events within the region. Increasing temperatures also intensify storm-scale dynamics, enhancing moisture inflow and the overall precipitation of heavy rain events[4][4].

11. With regards to future climate, it is highly likely that precipitation will remain close to 0mm between January and April both over time and under different RCPs. Under normal conditions, as the summer approaches, the ITCZ position moves towards the north and precipitation starts to increase, particularly at lower latitudes. From May to August, precipitation is expected to decrease across southern and central parts (Figure 1); but not along northernmost parts, characterized by extreme arid conditions throughout the year. During these months, a decrease of 0.5 mm/day is expected along central and southernmost areas, equivalent to a 60mm decrease from May to August when the 2011-2040 and 2071-2100 periods are compared (Figure 8). A 60mm decrease is equivalent to a precipitation decline of 10-20%, as these areas record on annual basis between 300 and 600mm.

Figure 1. Average daily precipitation (mm/day) between May and August under RCP 4.5 and 8.5 (above and below maps, respectively) for the 2011-2040, 2041-2070, and 2071-2100 time periods (left to right maps, respectively).



12. **Drought** is a slow-onset climatological hazard that is increasingly threatening the agricultural and livestock sectors in Mauritania. Historical drought analysis shows severe and extreme drought conditions across the country, especially in the 1970s and 1980s. Recurring droughts across these two decades led to critical reductions in water resources, vegetation loss, increased land degradation and desertification processes, resulting in turn in a loss of arable land and agricultural production ? including loss of pasture and livestock depletion. Although the new millennium was considered wetter than usual, serious drought stress conditions were experienced in the early 2010s. For example, in 2011, the drought left over 100,000 people food insecure and the decrease in pastureland significantly affected livestock activities which, in many regions, was the main source of income for rural populations.

13. Several studies[5][5] conclude that drought stress conditions in recent years are more pronounced towards the central and southernmost parts of Mauritania, thus overlapping with this project?s areas of intervention. Although the number of isolated dry days has increased between 1981 to 2014, the number of dry days between June and September (rainy season) has decreased. Additionally, between 1981 and 2014, the number of dry spells during the rainy season has decreased by 30 to 50%. These findings are in harmony with research literature showing a regreening of the Sahel over the past few decades. Even though precipitation has recovered in Western Sahel over the 1981-2014 period, historical data series do not show variation in precipitation intensity over time[6][6]. However, in 2013, multiple heavy rainfall events lead to a precipitation 35% higher than normal, resulting in riverine flooding across project areas (Table 1).

Table 1. Historical high-impact events observed between 2000-2021 across the target areas[7][7].

Year	Disaster category	Type of disaster	Associated disaster	Number of people affected
2001	Climatological	Drought	Food shortage	1,000,000
2005	Hydrological	Riverine flood	Broken dam	7,500
2006	Hydrological	Flash flood	-	9,000
2007	Hydrological	Riverine flood	-	53,620
2010	Climatological	Drought	Food shortage	838,000
2010	Hydrological	Riverine flood	-	8,750
2011	Climatological	Drought	Food shortage	723,000
2013	Hydrological	Riverine flood	-	4,225
2017	Climatological	Drought	Food shortage	3,893,774
2020	Climatological	Drought	Food shortage	609,000

14. A slight increase in the number of **heavy rainfall events** (>20mm) is anticipated towards northern parts of the project area and a stabilisation along southernmost areas under RCP 4.5 overtime. Overall, southernmost parts of the project area are expected to record on average 2.5 to 5.5 (RCP 4.5) and 1.0 to 2.0 (RCP 8.5) heavy rainfall events per year respectively when the 2011-2040 and 2071-2100 periods are compared.

15. With regards to dry days (<0.5mm/day) during the rainy season (July-October), no significant changes are expected under RCP 4.5 overtime. However, under RCP 8.5, a higher number of dry days are projected when the 2011-2040 and 2071-2100 periods are compared. For the RCP 8.5 scenario, only 30 days of rain are expected between July and October by 2071-2100. These changes are associated with a precipitation decrease between May and August under RCP 8.5 by the end of the century. To conclude, the dual challenge of decreasing amount of total rainfall and number of rainy days during the wet season is likely to exacerbate the pressure on water resources and increase the risk of conflicts between farmers and pastoralists.

b) National framework for the management of productive landscapes

Institutional context

? At the national level

16. The **Ministry of Environment and Sustainable Development** (**Minist?re de l?Environnement et du D?veloppement Durable, MEDD**) is responsible for the development, implementation, and monitoring and evaluation of policies, strategies, initiatives and sustainable management of natural resources. The MEDD ensures the promotion of and makes sure that issues related to climate change, the fight against desertification and biodiversity conservation are taken into consideration in sectoral strategies and programs. It is responsible for monitoring and implementation of the Rio Conventions in Mauritania. The MEDD hosts several departments:

? Nature Protection Directorate (Direction de la Protection de la Nature, DPN);

? Protected and Coastal Areas Directorate (Direction des Aires Prot?g?es et du Littoral, DAPL) ;

? Environmental Control Directorate (Direction du Contr?le Environnemental, DCE) ;

? Data, Intersectorial Coordination and Programming Directorate (Direction de la Programmation, de la Coordination Intersectorielle et des Donn?es, DPCID) ; and

? Pollution and Environmental Urgency Directorate (Direction des Pollutions et des Urgences Environnementales, DPUE).

The MEDD is represented locally by regional delegations (Directions R?gionales de l?Environnement et du D?veloppement Durable, DREDD).

17. The MEDD also houses the **National Agency for the Great Green Wall** (**Agence Nationale pour la Grande Muraille Verte, ANGMV**), created in 2013. The mission of the ANGMV is to coordinate the implementation of the Mauritanian side of the Great Green Wall Initiative (GGWI), the goal of which is to strengthen the resilience of African Sahelo-Saharan people and natural systems to desertification and drought through the sound management of ecosystems, sustainable development of land resources, protection of rural heritage and improvement of living conditions of the local population. The objectives of the initiative include the restoration of 100 million hectares of degraded land affected by desertification, sequestration of 250 million tons of carbon and creation of 350,000 jobs in rural areas by 2030. The ANGMV also ensures coordination with the national agencies of other countries that are part of the GGWI[8][8].

18. The Ministry of Agriculture and Rural Development (Minist?re de l?Agriculture et du D?veloppement Rural, MADR) is in charge of agricultural development. Its official mandate is to:

? elaborate and implement policies relating to the development of agriculture;

? propose legislative texts defining agricultural regulations and ensure their implementation;

? guide and facilitate development actions carried out by the public and private partners;

? provide support and technical advice for the sustainable improvement of agricultural production and productivity;

? define the conditions for improving the functioning and organisation of socio-professional organisations and implement appropriate actions; and

? maintain cooperative relations with international and inter-State bodies whose field of interest concerns the agricultural sector.

Technical directorates relevant to the proposed project are the: i) Directorate for Strategies, Cooperation and Monitoring and Evaluation (Direction des Strat?gies, de la Coop?ration et du Suivi-Evaluation, DSCSE); ii) Directorate for the Development of Sectors and Agricultural Advisory Services (Direction de D?veloppement des Fili?res et du Conseil Agricole; DDFCA); iii) Directorate for the Development of Animal Sectors and Pastoralism (Direction de D?veloppement des Fili?res Animales et du Pastoralisme, DDFAP); and iv) Directorate for Rural Equipment (Direction de l?Equipement Rural, DER). The MRD is represented locally by Regional Directions for Rural Development (Directions R?gionales du D?veloppement Rural, DRDR).

19. The **Ministry of Hydraulics and Sanitation** (**Minist?re de l?Hydraulique et de l?Assainissement, MHA**) manages water policy. The MHA oversees all investments related to mobilisation of drinkable water, irrigation water and sanitation. The Directorate for Hydraulics is responsible for water management and the National Water Resources Center (Centre National des Ressources en Eau, CNRE) is responsible for information management and monitoring of water resources. The MHA works with regional directions (Directions R?gionales de l?Hydraulique et de l?Assainissement, DRHA) throughout Mauritania.

20. The **Ministry of the Interior and Decentralisation** (**Minist?re de l?Int?rieur et de la D?centralisation**, **MID**) steers decentralisation processes, including through the promotion of development actions in favour of local authorities, populations and deconcentrated State services. It oversees capacity-building activities aimed at decentralised administrations.

21. Among other responsibilities, the **Ministry of Social Affairs, Children and Family** (**Minist?re des Affaires sociales, de l?Enfance et de la Famille, MASEF**) is in charge of ensuring the mainstreaming of gender into sectorial policies and working directly with communities on gender inclusiveness. Its two directorates are the Directorate for Social Action and National Solidarity (Direction de l?Action Sociale et de la Solidarit? Nationale) and the Directorate for Studies, Cooperation and Monitoring (Direction des Etudes, de la Coop?ration et du Suivi).

22. Several projects financed by FAO and IFAD in particular have set up savings and loans associations in their respective areas of intervention, known as Oasis Investment and Credit Mutuals (Mutuelles d?Investissement et de Cr?dit Oasien, MICO) for IFAD in the oasis areas, and the Agricultural Savings and Credit Cooperatives (Caisses d?Epargne et de Cr?dit Agricole, CECA) for FAO in rain-fed areas[9][9]. After the termination of these projects, and to avoid losing the important achievements accumulated over several years, the Ministry of Rural Development created the **National**

Union of Investment and Credit Mutuals in the Oasis and Rainfed Areas (Union Nationale des Mutuelles d'Investissement et de Cr?dit Oasien et des zones pluviales, UNMICO) to mitigate the possible negative repercussions of this break-up on the institutional and functional future of the credit associations. Thus, UNMICO, upon the request of the Minister of Rural Development, received the approval N?67/GR/2014 from the Central Bank of Mauritania. Following the communication of the Minister of Agriculture, in the Council of Ministers of April 16, 2015, UNMICO was assigned a prevalent role in the monitoring and operational management of community-level Savings and Loans Associations in rural areas across the country.

? At the decentralised level

23. Mauritania?s administration is divided into six regions composed of 12 wilayas[10][10], 52 moughataas (departments) and 216 municipalities. Heads of executive in wilayas, moughataas and municipalities are the wali, hakem and mayor, respectively.

24. While a first decentralisation law was passed in 1986, the actual decentralisation process started in 1991. In the particular case of decentralisation in the agricultural sector, the privileged level has not been the local level but the regions, because of the greater technical and financial capacities available to them, which have been seen as an asset to accompany the process and contribute to the training of the local level in new functions and responsibilities[11][11]. In this context, the modalities of rural development planning and strategic programme preparation have been modified: although they remained essentially national, they have nevertheless incorporated bottom-up procedures for the design of agricultural development programmes. This has allowed national policies to incorporate moderate differentiation by region and strong differentiation by type of production. While the participation of local levels is limited to simple forms of consultation, the modalities of coordination at the regional level consist of national decision-making and funding on the one hand, and monitoring, follow-up and evaluation under the responsibility of the regional level on the other.

25. With regard to the decentralisation of the main agricultural support services, regions have been given responsibility for defining policies on credit and inputs, while the definition of policies on training, extension, research, credit and irrigation has remained the exclusive domain of the national level. The same applies to the financing of these services, which is a national responsibility, except for the financing of inputs (regional responsibility). The provision of these services shows a more diversified picture. While the public sector remains predominant in the provision of research services, it shares this role with Non-Governmental Organisations (NGO) for training and extension, and with the private sector for irrigation services. The private sector also has a predominant role in the provision of inputs, together with producer organisations for agricultural credit.

26. A municipality is defined as "a local authority under public law with legal personality and financial autonomy". The Mauritanian State recognises the right of local authorities to administer themselves and to take decisions relating to the functioning, equipment and development of the territories they administer. Municipal competences relevant to the proposed project encompass: i) the administration of the communal territory; ii) the development of the economic, social and educational

living environment of the territory; iii) the development of natural resources (including fire fighting); iv) the management of markets and slaughterhouses; and v) the development and management of areas granted by the State to the municipality.

27. The Municipal Council is the main deliberative body at the municipal level. In addition, a Municipal Consultation Committee (Comit? de Consultation Collective, CCC) may be established as consultative body to facilitate the work of the Municipal Council[12][12]. As such, the CCC is a guidance, monitoring, follow-up and evaluation structure to help ensure the proper conduct of public action and communal development projects. It is part of the steering body for the Municipal Development Plan (Plan de D?veloppement Communal, PDC ? cf. below) and reports to the Municipal Council, which is the contracting authority[13][13].

28. Some municipalities have structured additional deliberative bodies to assist with consultation and decision making at the local level. Examples include[14][14]:

? The Local Development Council (Comit? de D?veloppement Local, CDL) is the executive body of the consultation committees. It is responsible for implementing the decisions of the consultation framework, and act as an interface with donors, contractors, village monitoring committees and the commune. It may also be in charge of other missions benefiting the community: awareness-raising meetings in villages on literacy, mobilisation of community resources (taxes and duties), etc. It is made up of about ten members, members of socio-professional organisations, traditional chieftaincy and elected municipal officials.

? Village Monitoring and Management Committees (Comit?s Villageois de Suivi et de Gestion, CVSG) can be set up for the implementation of an initiative (e.g. monitoring and management committee for wells; parents' association for a school); they are responsible for mobilising municipal resources when necessary. Each CVSG is made up of members of the traditional chiefdom and civil society actors.

The mandate and composition of these facultative bodies vary across municipalities, as they reflect the specificity of local contexts and different ways of structuring municipal action and consultation within each commune.

29. Since 2001, an alternative local governance framework for the management of natural resources has been experimented with the support of the Deutsche Gesellschaft f?r INternationale Zusammenarbeit (GIZ), first in Guidimakha then in Hodh el Gharbi. In selected communes, Associations for Local & Collective Management (Associations de Gestion Locales Collectives, AGLC) have been set up and officially vested with the responsibility to manage given agro-sylvo-pastoral areas[15][15]. These areas are collectively agreed upon between communities, users? groups and representative of the State administration. The transfer of responsibility follows a well-defined process and is effective for 10 years ? provided that no degradation of natural resources due to inadequate

management is observed and that the AGLC remains socially representative of the local population ? and does entail any transfer of ownership.

Law and policy framework

? At the national level

30. Mauritania benefits from a relatively exhaustive legal and policy framework ? both overarching and sector-specific ? to steer development efforts in the fields of rural development and management of natural resources. The main elements of this framework relevant to the proposed project are outlined below.

31. A successor to the Poverty Reduction Strategy Paper action plan (2011-2015), the national **Accelerated Growth and Prosperity-Sharing Strategy** (**Strat?gie de Croissance Acc?l?r?e et de Partage de Prosp?rit?**) was adopted for the 2016-2030 period. This strategy sets forth a number of priorities, amongst which are: i) integrated management of natural resources and biodiversity, combating desertification, conservation and management of zones of ecological interest and protected areas; ii) management of environmental impacts, pollution, climate and environmental emergencies; and iii) the development of partnerships, inter-sectorial coordination, mobilisation of financial resources and communication.

32. The proposed project is also aligned with the **Rural Sector Development Strategy for 2025** (**Strate?gie de De?veloppement du Secteur Rural Horizon 2025, SDSR**). Indeed, the SDSR focuses on: i) improving agro-sylvo-pastoral productivity; ii) providing fair access to water, land and pastoral resources for the most vulnerable local communities as well as their sustainable use; and iii) strengthening institutional capacities to improve the participatory aspect of rural development policies. Assessments of previous SDSR programmes have noted that insufficient emphasis had been placed on natural resource management as opposed to environmental protection and conservation[16][16]. The ongoing SDSR has been designed to address this concern, by including a focus on sectoral growth to benefit the rural poor.

33. The **Environmental and Sustainable Development Policy Declaration** was adopted in 2011. It recognises that the development of the country starts with environmental conservation. The Declaration was a high-level reaffirmation of the **National Sustainable Development Strategy** (**Strat?gie Nationale de D?veloppement Durable, SNDD**), adopted in 2006. The SNDD aims for integrated management and efficient use of natural resources through local participatory management of natural resources, protected areas and wetlands. It also encourages linkages between development and local environmental protection.

34. In 2017, a new strategy ? the National Environment and Sustainable Development Strategy (Strat?gie Nationale de l?Environnement et du D?veloppement Durable, SNEDD) ? and its associated National Action Plan for Environment and Sustainable Development (Plan d?Action National pour l?Environnement et le D?veloppement Durable, PANEDD) were validated. The SNEDD?s core objectives are to: i) value natural resources in a sustainable and climate change resilient way to the benefit of the poor; and ii) promote the ecological and rational use of natural resources and ecosystem services. Expected results are that:

? an integrated policy of conservation, management and sustainable use of marine, terrestrial and aerial ecosystems is implemented;

? concrete measures to protect the littoral and adaptation of coastal cities are implemented to respond to priorities identified in the context of the framework for climate adaptation; and

? natural and cultural resources are preserved and valued.

35. The PANEDD comprises five strategic directions, including: i) integrated environmental governance; ii) integrated sustainable management of natural resources and biodiversity; iii) sustainable management of marine and coastal environment; and iv) strengthening of prevention and management of pollution and threatened species.

36. Of relevance to the proposed project is also the **National Agricultural Development Plan (Plan National de D?veloppement Agricole, PNDA),** a 10-year plan adopted in 2016 to steer the development of the agricultural sector. Its overall objective is to promote a modern, competitive and sustainable agricultural sector through the development of value chains with high growth potential. It is to be operationalised through four programmes: i) intensification and diversification of agricultural production; ii) promotion of competitive value chains; iii) sustainable management of natural resources; and iv) improvement of the quality of extension services. The proposed project aligns with all four objectives.

37. The **Pastoral Code** (**Code Pastoral**) adopted in 2000 articulates the principles of sustainable pasture management, including land tenure, water access and the role of local authorities and pastoral organisations in the livestock sector. The main objective of the Pastoral code is to establish the principles for a rational management of pastoral landscapes and to determine the rules governing all pastoral activities. Among other matters, the Pastoral Code establishes modalities to reconcile sedentary agricultural activities with the constraints of transhumant pastoralism, including rights of passage and access, establishing a priority right for livestock and ensuring that any land use plans are subsidiary to this right[17][17].

38. Other laws relevant to the proposed project include: i) Environment Law (Code de l?Environnment, 2000) ; ii) Hunting and Nature Protection Law (Code de la Chasse et de la Protection de la Nature, 1997) ; iii) Plant Protection Law (Loi relative ? la Protection des V?g?taux, 2000) ; iv) Agrarian and Tenure Law (Loi Fonci?re et Domaniale, 1983) ; and v) Water Law (Code de l?Eau, 2005).

39. In addition to the laws and policies described above, Mauritania has produced a number of national strategies and plans in accordance with its obligations as a ratifier of the Rio Conventions. Alignment between the proposed project and these strategies is presented in Section 7.

40. Many rural areas continue to apply traditional systems to manage land and other resources. Provisions are included within many of the above-mentioned codes for decentralised decision-making. This includes provisions within the Water Code, Forest Code, and Pastoral Code. For example, many communes have the ability to delegate the management agro-sylvo-pastoral resources to local associations. As noted previously and further elaborated upon in Section 1.a.2, this constitutes an entry point within the baseline for project innovation sin terms of local governance.

? At the sub-national level

41. As per Order 680 from 17 April 2011, all sub-national entities recognised as territorial collectivities (i.e. municipalities and regions) have a formal obligation to develop local development plans. As such, the majority of municipalities have adopted a **Communal Development Plan** (**Plan de D?veloppement Communal, PDC**), the operationality of which varies greatly across municipalities. A complete PCD typically consists in a description of the territory, sectoral diagnostics, an institutional diagnostic and an operational plan for prioritised actions, with a more or less specific identification of implementation partners, cost estimated and funding sources. Progress in the execution of PCDs is heterogenous[18][18].

42. Local management plans have been set up in the past for specific resources. For example, the Forest Code provides the possibility to establish Simplified Management Plans (SMP) that authorise and regulate the exploitation of wood resources at the local scale (SMPs may apply to forest areas of up to 100 hectares). However, the initiative of designing such plans is usually linked to the implementation of a given donor-funded project. In the case of forests, while there used to be up to be seven forested areas covered by management plans[19][19] in the country by 2014, these plans have not been continued after the termination of the associated projects and, as of 2020, there is no forest under management plan in Mauritania[20][20]. There are generally no unified frameworks for the preparation and implementation or local resource-specific plans.

c) Project intervention sites

43. The proposed project will target four watersheds in the wilayas of Tagant, Hodh el Gharbi, Assaba and Guidimakha. These watersheds are briefly described below.

? Tidjikja watershed, wilaya of Tagant

44. The Tidjikja watershed is composed of two communes, Tidjikja and Rachid, with a total population of approx. 20,000. It is about 70 km long, from the feeder area called Baghdada, 45km south-east of Tidjikja, to a basin called El Khatt, north-west of Rachid (Figure 2). The watershed is fed by ten tributaries coming from the Tagant plateau[21][21]. The soils of the basin are largely of sandy structure brought in by the winds that sweep across the dune ridges on the Tagant plateau, along which the date palms and crop fields are established.

45. Some areas of the oued beds are silted by sand deposits. The narrower watercourses create favourable conditions for violent water flows, which occur in case of heavy rainfall and damage riverbanks. The minor bed of the oued is discontinuous in several places where large deposits of sand have blocked the passage of the water. This situation is very clear between Lehweitat and Rachid, where the watershed is clearly divided into two sub-watersheds.

46. Most of the watershed area is silted up and unsuitable for any agricultural or pastoral activity, apart from the basins known locally as the ?zones d??pandage? in the municipality of Tidjikja and the El Khatt basin downstream of the municipality of Rachid.

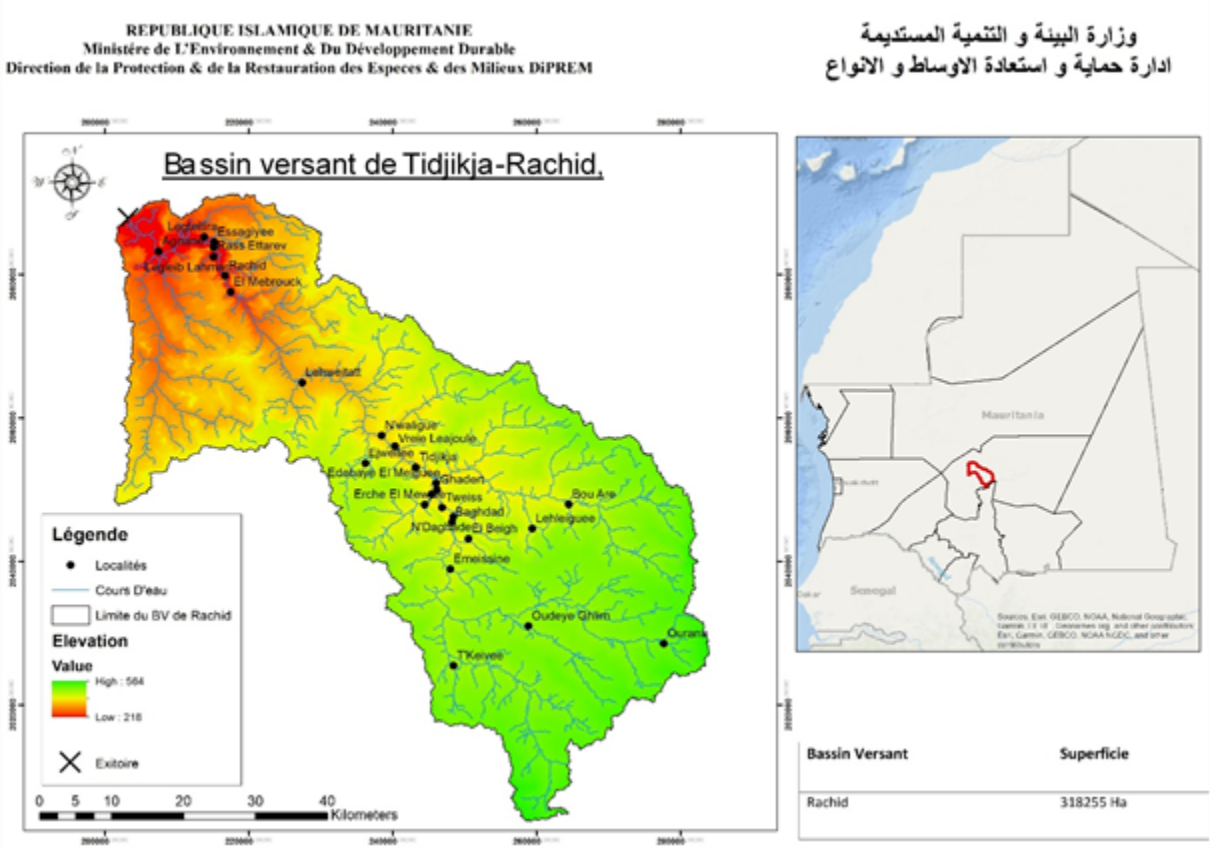
47. The Tidjikja watershed hosts a diversity of plant species, mainly *Acacia raddiana*, *Acacia flava*, *Balanites aegyptiaca*, *Capparis decudea*, *Leptadenia pyrotechnica* as well as perennial grasses such as *Panicum turgidum* and *Aristida pungens*. This vegetation strongly contributes to halting the progression of sand dunes towards the palm groves and agricultural areas.

48. The main economic activities of the two communes of the watershed area (Tidjikja and Rachid) are livestock breeding, agriculture and trade. Livestock farming in the area is extensive, with seasonal movements outside the area due to irregular rainfall. The main agricultural activities are the cultivation of date palms and horticulture. These two crops are grown along the wadis where there is a relatively shallow water table. Despite the existence of a few earth dams ? built by the communities themselves without any technical guidance, and which suffer design defects ? agricultural activity is highly dependent on rainfall, which is very erratic in the area.

49. Many socio-professional organisations are present in the watershed, in particular with the participatory oasis management associations (Association de Gestion Participatives des Oasis, AGPO) which cover the entire watershed. Seven AGPOs are active in the commune of Tidjikja and two in the

commune of Rachid (which each gather a number of cooperatives and communal associations); an umbrella organisation of AGPOs has been established in the region but is not fully functional. In addition, according to the Ministry of Social Affairs, Childhood and the Family (Minist?re des Affaires Sociales, de l?Enfance et de la Famille, MASEF), up to 3,520 women are registered in a women?s cooperative in Tidjikja alone; the strong level of social cohesion in this watershed forms a favourable basis to foster income-generating activities (IGA) through cooperatives.

Figure 2. Map of Tidjikja watershed (wilaya of Tagant).



? Barbara watershed, wilaya of Hodh el Gharbi

50. The Barbara watershed area is about 70 km long and is inhabited by a population of approx. 12,300. The watershed is fed by two main sources, namely El Aguer and Eguini labyadh, both located the El Aguer plateau. The waters flow into three main tamourts, Khweiwira, Gdenani and Doueirara. The watershed is characterised by a sometimes-violent water flow, with flooding from El Aguer often threatening the city of Tintane.

51. Arboreal, shrubby and grassy vegetation fixes part of the living to semi-living dunes contiguous to the waterbed. These include *Acacia raddiana*, *Balanites aegyptiaca* and *Leptadenia pyrotechnica* on the heights and *Acacia nilotica*, *Ziziphus mauritiaca* and *Acacia raddiana* at the edges of the main bed. Perennial grass species are essentially made up of *Panicum turgidum* and *Aristida pungens.* A dense forest (*Acacia nilotica*, *Acacia raddiana*, *Ziziphus mauritiaca* and *Balanites aegyptiaca*) has formed on the banks of the minor bed of the watershed area, in the Radhi zone. These banks benefit from the excess runoff in the minor bed of the basin, which has created a more humid microclimate favourable for these species.

52. Downstream of Barbara, the relief becomes less rugged and there are vast agropastoral areas with important potential for agricultural production and pastures. In this area, a dam was built in 1958, damaged, rebuilt and then damaged again. Should the dam be restored, the area of its cultivable basin is estimated at 80 ha. In addition, the potential for rain-fed cultivation is significant, especially for traditional cereals (sorghum, millet). If water input can be secured (with wells or boreholes), there is also potential for horticulture. Further downstream, several depressions have potential for agropastoral exploitation, especially around the ponds of Gdenani, Khweiwira and Dweirara.

53. Two main types of degradation have been observed in the watershed:

? a significant phenomenon of siltation and movement of the dunes both inside and outside the major bed of the watershed area, resulting in widespread deposits of white sand inside the bed; and

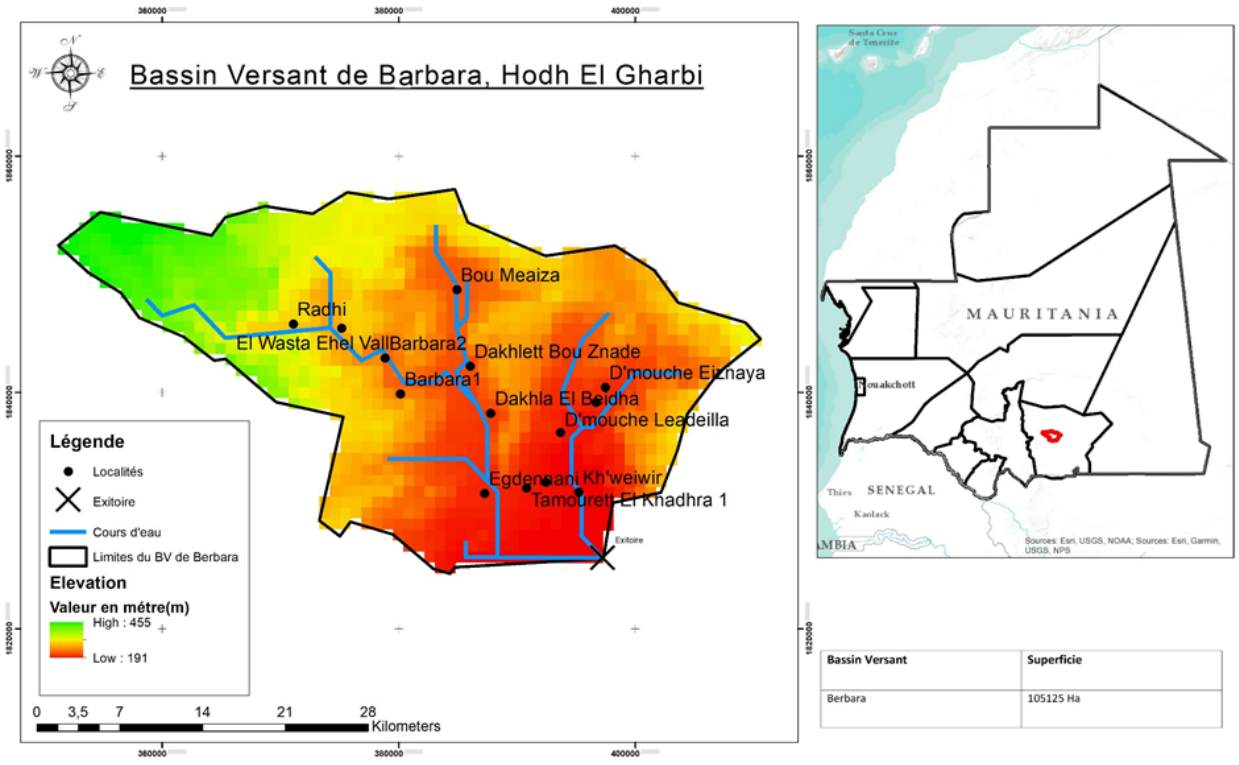
? advanced erosion of the banks of almost all watercourses (tributaries and major bed of the watershed), with the palm groves located south of Radhi being particularly affected.

54. In terms of professional organisations, the GIZ set up an AGLC in 2007, which includes five villages (Barbara, Legleita, El Wasta, Tichouten and Radhi) and was focused on NTFP. In addition, women's cooperatives are quite active in cowpea cultivation, dyeing, sale of water lilies, balanites oil, balanites syrup, jujube cakes and horticulture.

Figure 3. Map of Barbara watershed (wilaya of Hodh el Gharbi).

REPUBLIQUE ISLAMIQUE DE MAURITANIE
Ministére de L'Environnement & Du Développement Durable
Direction de la Protection & de la Restauration des Especes & des Milieux DiPREM

وزارة البيئة و التنمية المستديمة
ادارة حماية و استعادة الاوساط و الانواع



Bassin Versant	Superficie
Berbara	105125 Ha

? Meisah watershed, wilaya of Assaba

55. The Meisah watershed is a 20 km long and 8 km wide. It is bordered to the west, south and east by mountain ridges called Touajil lemdermzatt and to the north by an earth dam and two tamourts (depressions periodically filled with water), namely Tamourt Aghwawit and Tamourt Gdala. The only commune fully located within the watershed is Kiffa (population of 50,000), but communities from the neighbouring commune of Nouamleyne also cultivate land and graze cattle in the watershed.

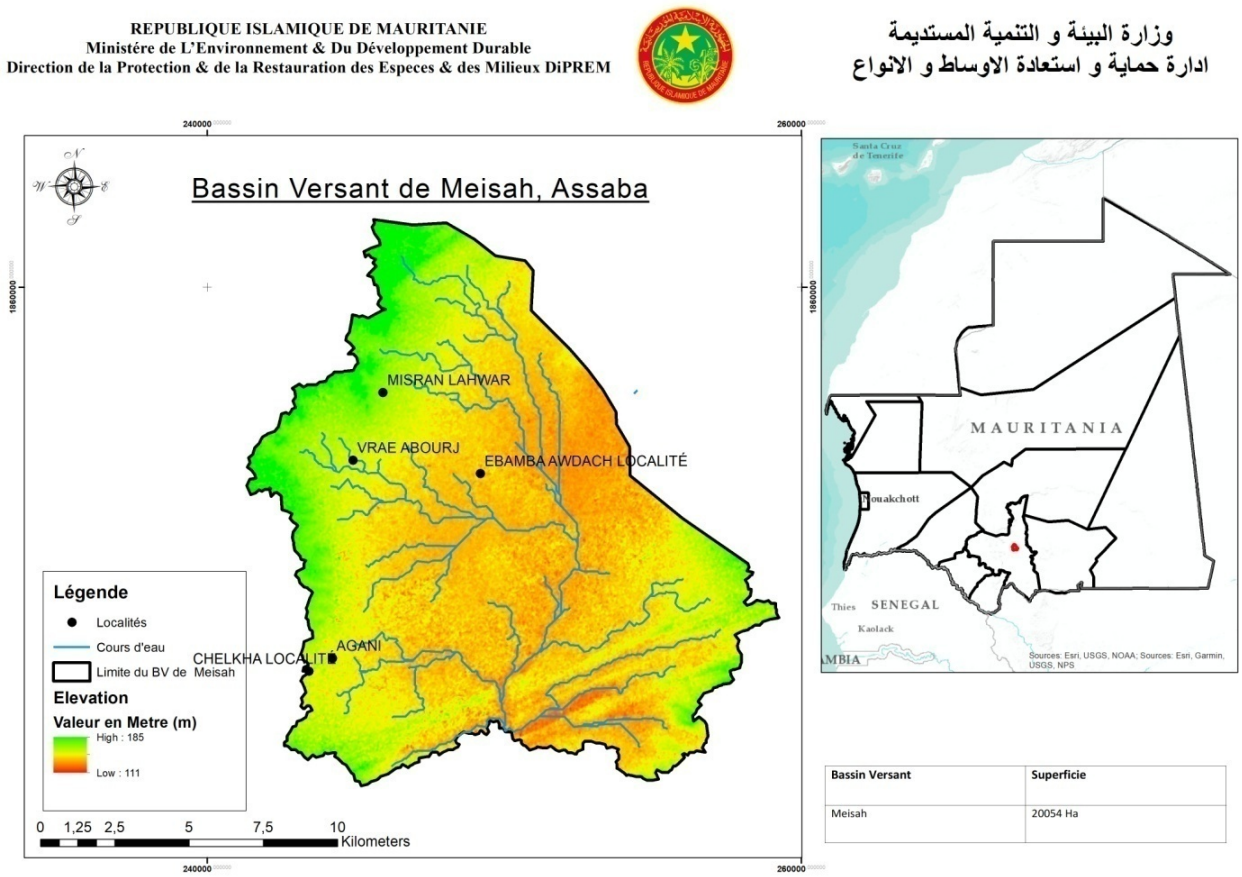
56. The watershed area is fed by water flows from these mountain ridges, all of which feed into the basin of a dysfunctional dam built upstream of the two tamourts. The location of this dam is detrimental to the important forest stands (*Acacia flava, Acacia nilotica, Capparis decudea*) downstream of the infrastructure, and does not allow to regulate the water level in the tamourts, which are the key factors for the development of the area.

57. Indeed, the Meisah watershed is characterised by important agricultural, pastoral and forestry potential. For this potential to be fully realised however, a dam would need to be built downstream of

the two tamourts, so that the water level can be properly managed. This project has been in discussion for years between local populations, local authorities and the GoM. At present, a dense forest of is located in the upper parts of the basin (south-east), with a large stand of *Acacia senegal* (gum trees), *Ziziphus mauritiaca* (jujube trees) and *Balanites aegyptiaca*, which augurs great possibilities for Non-Timber Forest Product (NTFP) exploitation. Large pastoral areas are also visible around and within the basin. Local people report that, with a functional dam, farmers could grow wild rice and wheat in addition to the traditional sorghum and millet. Important agricultural ponds and agro-pastoral reserves have been observed in the basin as well as earthen dykes helping to improve retention of run-off water. Generally, the area is characterised by a severe shortage of water for human and animal consumption, which is compounded by a low capacity to mobilise the little water the watershed receives; this, rather than siltation, is th main challenge faced in the Meisah watershed.

58. The communities in the watershed area are agro-pastoralists structured into four cooperatives, one of which being focused on poultry farming, while the other three carry out agricultural and other activities, such as hide tanning, dyeing and collection of NTFPs. The tribal organisation generally limits land disputes, but anyone wishing to work in the watershed must apply to the local chief - with an almost-always positive response, according to local officials. Poverty is stringent in the area and education and living conditions are very precarious.

Figure 4. Map of Meisah watershed (wilaya of Assaba).



? Tektake-Dafort watershed, wilaya of Guidimakha

59. The Tektak?-Dafort watershed is a portion of the Ouad Garfa watershed, famous for the many casualties swept away by its waters. Indeed, the watershed, which drains through the town of Maghama into the Senegal River is one of the most violent watersheds in the country. The watershed area is home to 35 villages, including 13 in the commune of Tektak?, two in the commune of Aweinatt, and 20 in the commune of Dafort, for a total of approx. 27,500 inhabitants.

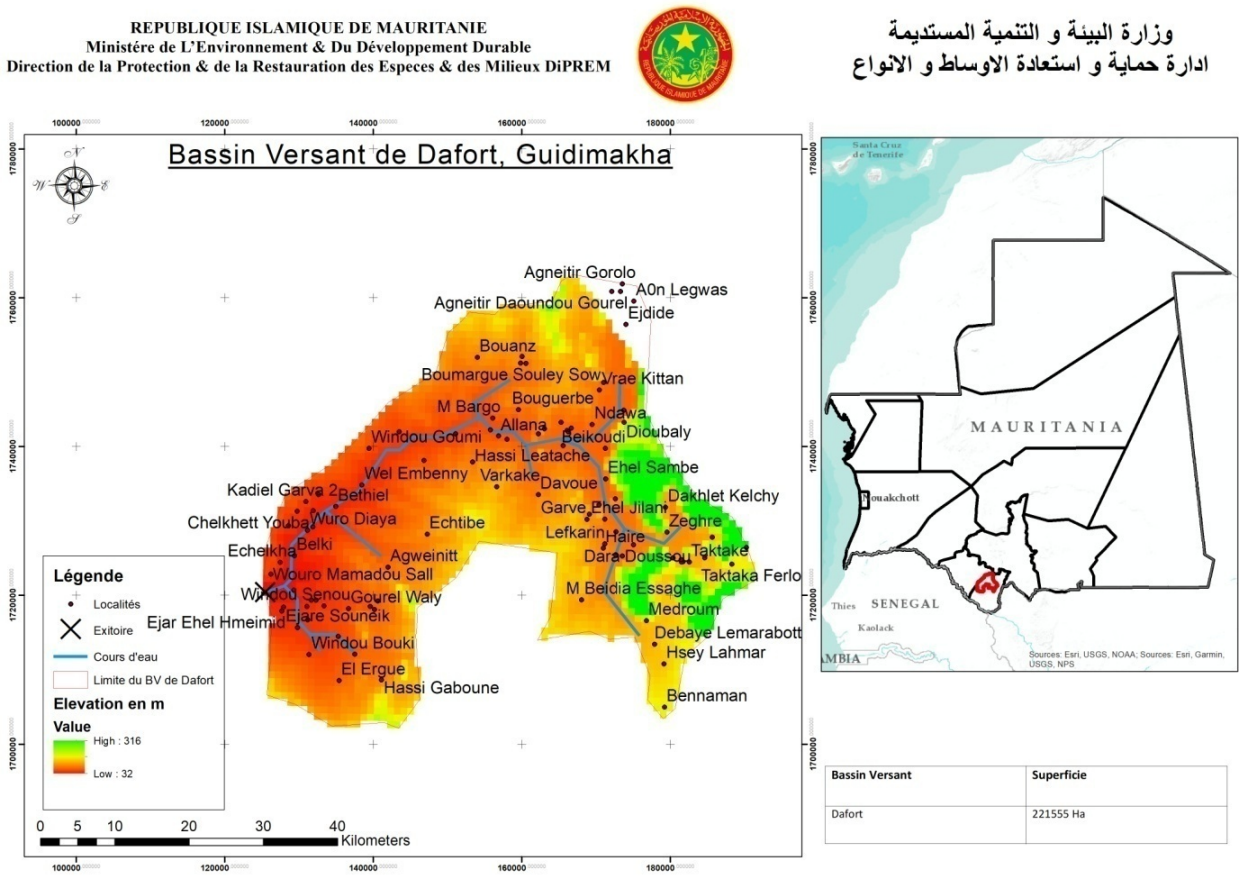
60. The watershed has its source (upstream) at NDoumoully (commune of Aweinatt) and extends downstream all the way to M'Bargo (commune of Daral Doussou), over a length of about 45 km and an average width of 1 km. The basin is marked by rocky plains that are often in an advanced state of degradation ? despite the installation of several sills to slow water down and limit erosion. The northern and southern limits of the watershed consist in mountain ranges that narrow the major bed in places. The risk of siltation in some of the minor beds is evident, especially upstream in the NDoumolly area, in spite of some basic fixing operations attempted by the local population. In addition, the erosion of the riverbanks has caused a significant loss of cultivable land for the populations exploiting the watershed.

61. The minor bed is bordered by date palms in the Tektak? area, whose production is progressively decreasing due to the lack of water[22][22]. The vegetation, fairly dense in some areas, covers almost the whole watershed. It is mainly composed of *Acacia raddiana*, *Ziziphus mauritiaca*, *Hyphaene thebeica*, *Balanites aegyptiaca*, *Combretum glutinosum, Acacia nilotica* and *Acacia senegal*. The water supply sources consist in a borehole at Tektak?, another at Dafort and wells in the other villages.

62. Should the degradation processes be halted, the Tektak?-Dafort watershed would have considerable agro-sylvopastoral potential. The mostly sandy-silty to clayey-silty stony land can be cultivated with traditional cereals (sorghum, millet), but requires a lot of slowing down sills or dykes to improve the infiltration of runoff water in the rainy season, thus improving the recharge of the water table and the quality of the soil. Similarly, pasture is abundant in the area but the lack of water points prevents the development of livestock keeping. The main agricultural products in the area are sorghum, millet and henna, with the largest henna production centre in Mauritania located in Tektak?, as well as a dates, horticulture produce and NTFPs (jujube, balanites etc.).

63. In terms of socio-professional organisations, two AGLCs were created in Tektak? in 2004 and one in Dafort in 2007 for NTFP processing. However, these AGLCs are not active anymore. Six women's cooperatives in Tektak? are grouped into a union for henna, horticulture, NTFP processing and handicrafts. A large union of cooperatives in Dafort includes 1,200 women active in horticulture. Following the ban on the sale of charcoal, one of the Tektake cooperatives started successfully to market butane gas.

Figure 5. Map of Tektake-Dafort watershed (wilaya of Guidimakha).



64. Table 2 below summarises the area and population of the target watersheds.

Table 2. Summary of target watersheds areas and populations.

Target watershed	Total population	Watershed area	Target forest & rangeland	Target arable land
Meisah (Assaba)	50,000	31,202	13,200	1,300
Dafort (Guidimakha)	27,000	7,664	25,300	2,200
Barbara (Hodh el Gharbi)	12,300	61,270	10,000	1,500
Tidjikja (Tagant)	20,000	16,190	16,000	2,000

Total	109,300	116,326	64,500	7,000

B) Threats, root causes, drivers and barriers

a) Reminder of main threats

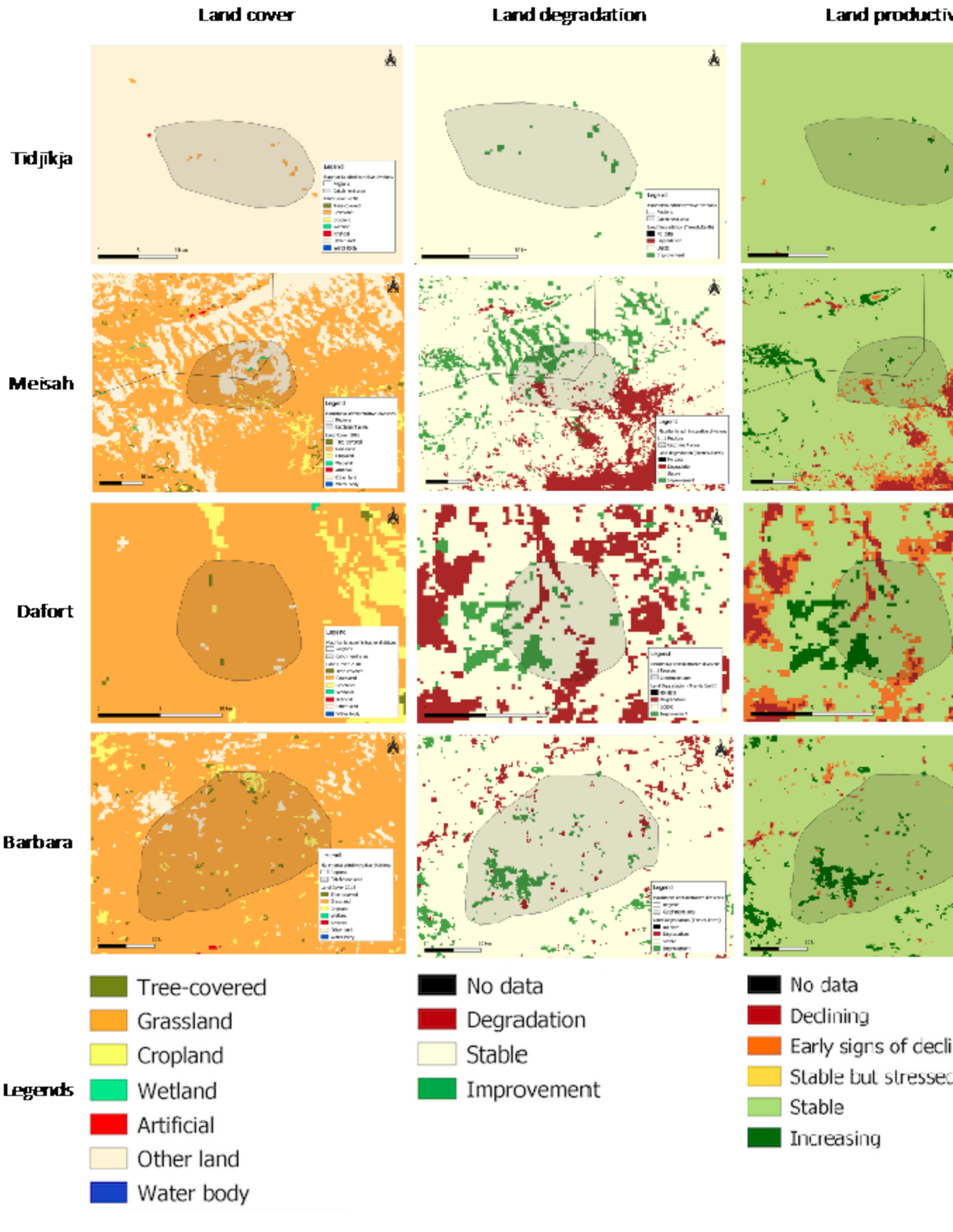
65. In the target watersheds, the Sahara Desert is slowly moving southwards, encroaching on productive landscapes and threatening rural livelihoods of already impoverished communities. This is a result of resource over-exploitation, including grazing and forest reductions, compounded by the impacts of climate change (cf. section below). Pasture and arable lands are rapidly degrading and losing productivity. In addition, the project area has experienced an increase in floods, later rains, shorter rainy seasons and periods of prolonged drought. Increased land degradation advances and vegetative cover loss has accelerated soil erosion and siltation.

66. Climate change combined with unsustainable resource management practices is forcing local communities to alter traditional production methods. Spatial and temporal nomadic movements are being reduced. Groundwater availability is declining and longer periods of fodder shortage are causing malnutrition. Rising temperatures and reduction in rainfall affects the nutritional value of the feed and the health of livestock, reducing herd fitness and vitality. In consequence, domestic demands for meat and dairy are no longer met.

67. The above-mentioned impacts are particularly evident in critical riparian areas where the use of natural resources is intensifying. Pastoralists and agriculturalists are concentrating their use of these areas as their needs for finding moist ground becomes more acute. Pastoralists tend to use wooded and humid areas along riparian zones for longer periods. They also harvest trees for fuelwood and fodder. Seasonal pressure is particularly severe during March and August. The resulting degradation of wooded uplands exacerbates water loss and erosion, as these areas are particularly valued for their water availability and the ability to shelter against heat waves and sandstorms. At the same time, the period of livestock remaining near permanent watering points is increasing. Agriculturalists and pastoralists are now concentrated in and near the last remaining humid areas with relatively reliable water resources.

68. Although these impacts can hardly be oberved from existing remote-sensing data on land productivity (Figure 6), ground-truthing land cover and land use datasets through field missions will allow to reconcile statistics with observational evidence and enable to use remote-sensing tools for improved monitoring of climate impacts (cf. Alternative scenario section).

Figure 6. Land cover (2018), land degradation and land productivity (Trends.Earth) in the target watersheds.


Land cover
Land degradation
Land productiv
Tidjikja
Meïsah
Dafort
Barbara
Legends
Tree-covered
Grassland
Cropland
Wetland
Artificial
Other land
Water body
No data
Degradation
Stable
Improvement
No data
Declining
Early signs of decli
Stable but stressed
Stable
Increasing

b) Root causes and drivers

? Climate factors

o Climate-induced impacts on livestock systems

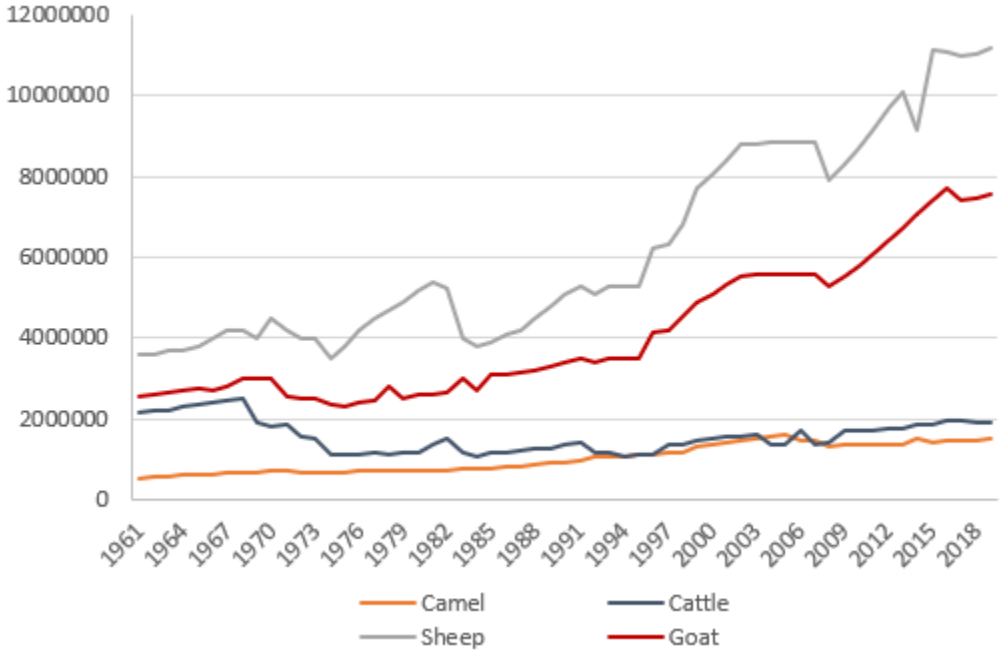
69. Livestock keeping is the main activity of the rural sector; it contributes significantly to the national economy, with 80% of agriculture?s contribution to the GDP (for a total of 14.8%) being generated by the livestock sector alone[23][23].

70. However, the livestock sector in the target areas is extremely vulnerable to drought and associated vegetation cover losses and reduced fodder availability. Historical trends and variations in livestock production in Mauritania are directly linked to precipitation variability as well as to the frequency of drought events. For example, while the number of cattle largely exceeded 2,500,000 animals during the 1960s, a sharp decrease was experienced after the severe drought events of the 1970s and 1980s, with the national stock count reduced to approximately 1,100,000 animals (Figure 1). Since then, the number of cattle has slowly recovered but has not yet reached pre-drought levels.

71. In terms of the threats posed by anticipated climate changes, although there is some uncertainty in future precipitation simulations (cf. Annex M), it is likely that southernmost parts of the target areas will experience a precipitation decrease during the wet season. As a result, the historical suitable agroclimatic areas for cattle, both from Senegal and Mauritania, are likely to be displaced towards the Senegal river basin, where most of the cropland is found, thereby adding more pressure on natural resources.

72. From Figure 1, it is evident that pastoralists? choices have adapted according to high-impact drought events occurring in 1970s and 1980s: pastoralists have shifted towards breeds and animals (camels and goats) that are more tolerant to drought and heat-stress conditions. This shift is seen as an adaptation strategy, as camels can survive to severe droughts and continue to contribute to household nutrition and economy during dry periods. Although zebu has a higher heat-tolerance than sheep, the latter requires less mobility to meet fodder and water requirements than cattle. During the 1970s and 1980s, changes in the number of camels, sheep and herd size were thus less dramatic than those observed for cattle. However, overgrazing in increasingly crowded areas and the cutting of trees and shrubs for firewood and fodder for sheep and goats are contributing to adverse side effects, including the acceleration of desertification which is posing threats to crop production.

Figure 7. Number of livestock heads (camel, cattle, sheep, and goat) in Mauritania from 1961 to 2019.[24][24]



- Climate-induced impacts on crop systems

73. The main crops grown in the target areas include sorghum, rice, millet, maize and niebe beans, grown under rainfed conditions. The yields of these crops would likely all be negatively affected by anticipated changing climate conditions.

74. For sorghum, several modelling studies, using the SARRA-H (Syst?me d?Analyse R?gionale des Risques Agro climatologiques Version H) and APSIM (Agricultural Production System Simulator) models, have been conducted to assess the impacts of changing climatic conditions on crop productivity. Although these studies show a lower sensitivity to climate variability among modern sorghum varieties (cv. caudat) when compared to ancestral varieties (cv. guinea), they anticipate a strong yield decline (14-29%) in the westernmost parts of West Africa by 2050.[25][25] Among the most resistant varieties, those having a short cycle are likely to withstand better increasing temperatures and rainfall variability[26][26].

75. For millet, it is likely that increasing temperatures and decreasing precipitation will affect cultivars taking longer to reach the flowering stage[27][27]. West African pearl millet shows an optimum temperature for growth of 33?C during the day and 28?C at night[28][28]. A rise in temperature above these thresholds would reduce the length of the growing period, giving lower yields. Similarly, high temperatures during the vegetative stage, stem elongation and reproductive stages would result in a yield decrease. The concurrent impact of increasing temperatures and decreasing precipitation will provoke an increase in evapotranspiration rates, particularly during the vegetative and maturity stage when crop coefficients are highest. Finally, millet has a C4 photosynthetic pathway and does not respond well to increasing CO_2 concentrations. As a result, high concentration of atmospheric CO_2 can be a limiting factor for crop production.

76. Maize is among the most vulnerable cereals (cultivated in the target areas) to changing climatic conditions. The low tolerance to heat-stress conditions during flowering (32-34?C) causes pollen desiccation and low pollen viability. Hence, once the critical temperature threshold is exceeded, yields start to decline. Additionally, maize has higher water requirements (>600mm) when compared to sorghum (400-550mm) and millet (<600mm) and, therefore, shows a lower adaptability to reduced water availability than the latter crops. More specifically, IFAD?s CARD (Climate Adaptation in Rural Development) tool anticipates a maize yield decline for Mauritania of 17% by 2050 under RCP 8.5.

77. Although rice production has experienced a considerable increase over the past decades, particularly along the arable areas located in the Senegal river basin, this cereal shows a high vulnerability to increasing temperatures and more erratic rains. The temperature threshold for successful flowering is 33?C, with water requirements varying between 450 and 700mm depending on the agroclimatic zones. In fact, these water requirements are not satisfied by current precipitation regimes and changes in hydrological patterns along the Senegal river basin will most likely exacerbate pressure on water resources. Finally, niebe (leguminous crop) is likely to show a higher susceptibility to drought stress conditions when compared to cereal crops, as the root system is shallower, and can withdraw less water from the soil than the latter crops.

? Non-climate factors

78. The above-mentioned climate factors are compounded by non-climate factors that exacerbate the threats to local livelihoods. These factors include: i) the decay of some of the existing water infrastructures that prevent them to fully play their role; ii) widespread poverty in the target areas, which hinders the capacity of local stakeholders to invest in resilience-building activities; iii) the limited uptake of climate-smart agro-sylvo-pastoral practices, which prevents to halt and reverse degradation processes and threatens rural livelihoods in the face of climate impacts; and iv) the under-development of some of the most promising income-generating activities. Some of these non-climate factors are further described in the baseline resilience assessment outlined below.

Synthetic resilience assessment

79. The combination of climate and non-climate factors described above threatens the overall resilience of local communities in the target areas, as further characterised below.

80. During the PPG phase, the SHARP+ tool[29][29] was implemented in the target watersheds[30][30] to gain a quantitative and qualitative understanding of the baseline situation with respect to 23 relevant categories spread across the agronomic, environmental, social and economic domains. The SHARP+ analysis culminates in a global climate resilience assessment, the results of which directly informed the project design, and are summarised below, while the complete SHARP+ report is presented in Annex N.

81. SHARP+ defines climate resilience as the ability of a system to recover, reorganise and evolve following external stresses and shocks. This ability will in turn depend on a variety of environmental, social, economic and governance aspects. Under these considerations, SHARP+ assesses resilience using a modular approach, in which each module describes an element of the farm system. Each module embeds two scoring components measuring resilience as follows:

? a technical resilience component looking into factual information on the agricultural production unit (farm) or agriculture-based household that can be easily measured or assessed by the respondent; and

? a self-assessed adequacy component of perceived satisfaction of a given aspect of the farm or household.

82. The combination of the two components provides a general score of resilience, called Compound Resilience Score ? ranging from 0 to 20 points ? in which the lowest scores highlight those aspects of lower resilience. Generally speaking, low scores can be interpreted either by the inadequacy of the resource/status in question, and/or because people consider the number of resources they possess or have access to not to be sufficient for the well-functioning of their farm systems.

83. The average compound resilience score across all modules assessed and households sampled in the four watersheds is 6.72 out of 20 points possible. The results suggest that, overall, households have very restricted capacity (knowledge, skills, resources) to address ongoing and past issues present in the farm systems (e.g. climate shocks, degradation of resources). Moreover, the low resilience scores depict that actions taken to cope, adapt and transform have been piecemeal, insufficient and/or inadequate to meet households? short and long-term requirements. The lowest compound resilience scores (average of 7 points or lower) are presented below.

Table 3. Summary of SHARP+ resilience assessment for categories with low (<7/20) compound score.

Category	Explanation
Agronomic domain	
Agricultural practices Score: 6.81	?The majority of farmers are only devoted to crop production. Low diversification of on-farm activities (e.g. mixing animals and trees) underscore their resilience. Likewise, subsistence agriculture is the predominant kind among the households assessed. ? Farmers also deemed the nature and the variety of activities as inadequate to meet their households and farm needs.
Crop production Score: 5.41	? Very simplified crop production systems are observed, with few crop species and a very limit presence of perennials. Farmers usually keep a single variety of the crops cultivated, which together with the low species diversity increases their exposure to pest, diseases and environmental shocks (e.g., droughts, heat). ? Producers present scant adoption of post-harvest practices to increase their value (depending on options selected, penalised for immediate consumption only option). ? Nonetheless, some factors such observed as the use of leguminous plants as well as the reliance of native varieties are positively contributing to resilience
Pest management Score: 4.43	? Although only 36% of households faced pest problems in their fields, only 12% used any practices to manage them. An among these, synthetic pesticides were the preferred method. ? Although the exposure to pests and diseases remains low at the moment (as declared by farmers), this could potentially become a major source of vulnerability with increased temperatures. Moreover, with the presence of low diversified production systems, farmers are particularly vulnerable in case these or any other types of shocks occur.
Livestock production Score: 4.18	? The very limited presence of animals in the farm systems assessed, as well as the low intra species diversity and the small-scale nature of production (subsistence) is reflected in a technical (objective) score of 0.61/10 points. Moreover, about 20% of farmers mentioned that their livestock was not completed adapted to local climate conditions.
Livestock health and nutrition Score: 6.35	? 25% of farmers have lost animals mostly due to climate stresses or diseases, nonetheless farmers did not take any action to deal with these. And the respondents seem to have restricted to veterinary services ? Food supplements are not usually given to animals and only as small share of livestock is kept grazing on pasture or agricultural lands at least during part of the year.

Trees (forests and agroforestry) Score: 6.77	? Although 55% of farmers have trees on their farm, these are only few and are not integrated in the production systems (i.e., agroforestry or agro-silvo-pastoral production). ? Tree products (from farm and forests) are used mostly as sources of timber for fuelwood (charcoal and firewood). Very few take advantage of these resources to supply food or as sources of income, particularly of non-timber forest products (e.g., beekeeping, medicinal products, fodder) ? Nonetheless, households have not observed severe degradation of natural forests, which positively contributes to resilience.
Environmental domain	
Land management Score: 4.93	? Despite the fact that farmers have observed soil degradation issues, only 2% of farmers have taken any action to improve the quality of it, resulting in a technical score of 0.12/10 points. Nonetheless, farmers using any technique deemed these as effective to dealing with their land degradation issues.
Energy sources Score: 6.52	? High reliance on biomass to supply energy for household duties, mainly coming from uncontrolled timber extraction, underscores farmers? resilience. ?However, the presence of solar energy, particularly for agricultural tasks, helps counterbalancing the score. The further introduction of sustainably energy sources and the use of energy saving technologies might help reduce the dependence on fuelwood.
Energy conservation practices Score: 6.98	? Although 43% of households use any energy conservation, they mostly rely on recycling practices. ? As mentioned above, the incorporation of energy efficient technologies (e.g., energy saving stoves, bulbs, drying and cooling facilities) might support resilience of smallholders.
Shocks Score: 4.55	?Over one-third of farmers have been affected by climate shocks, mostly droughts, extreme heat and windstorms. ?Despite shocks being of high intensity in most cases, with observed detrimental effects on agricultural productivity, 28% farmers took any coping strategy. ? Over half of producers mentioned that nobody would be able to support them in case of an extreme event were to occur in the next year, reflecting very high vulnerability levels.

Access and management of water Score: 5.71	?Households mostly rely on a single water source for their household and agricultural needs. Water availability has been declining as noted by almost 40% of farmers. However, only 10% used any practice to preserve the resource. ? Also, the majority of households do not use any treatment method to sanitise water, mostly to lack of know how or unaffordability.
Economic domain	
Income sources Score: 5.56	? Households rely on a single income source, mostly agriculture, with low or only occasional engagement in non-farm activities to generate income. ? Famers spend mostly on basic needs as food and education (which seems high-priced for many households) and little money is invested on the farm, limiting the profitability of the sector. ? In fact, over 90% of families mentioned that their agricultural activities have not been profitable in the past 3 years. Due to this, only 3% households were able to save some money
Agricultural inputs Score: 6.33	? Households face barriers to access their main farm inputs (e.g., seeds, fertilisers, labour), as 91% of farmers mentioned that it was difficult to access these most of the times. ? Households also rely on single suppliers for most inputs, which limits their availability and bargaining capacity.
Access to markets Score: 5.39	? Over half of households were not are able to sell agricultural products, the being main barrier the low production rates (crops or animals) ? Farmers tend to sell alone, as they are not organised to sell their products at local markets or through intermediaries (e.g. through a famer organisation) ? Only 19% of farmers are involved in any certifications schemes to increase the production value.
Social domain	
Access to information Score: 3.89	? Only 30% of farmers have access to information on weather forecasts (mostly on the start of the raining and extreme events), though the information received has not been entirely useful as pointed by respondents. Only 3% have access to adaptation practices information. ? Farmers did not consider the information as sufficient to allow households to predict and cope with weather events and climate patterns

Group membership Score: 3.69	? The little presence and participation to community-based groups (only 14% of households reporting these), particularly to those promoting the exchange of knowledge on agricultural practices (crops, animals, forestry, and fisheries) and traditional knowledge, has resulted in a very low technical score of 0.58/10 points.
Nutrition Score: 6.11	? Low resilience scores are attributed to the very low household dietary diversity score observed in 64% households (1 to 3 food items consumed in the last 24 hours), as well as the limited capacity of families to storage food throughout the year. ? The limited micronutrient content of the diets (e.g. iron-rich and energy-rich foods) also contributes to low resilience performance.
Policies and programmes on climate change and sustainable agriculture Score: 0.33	? The absence of policies and programmes tackling climate change and sustainable agricultural practices in the regions surveyed, accompanied by limited awareness from smallholders on available policies and programmes (if any) has resulted in an extremely low score in this module. ?The absence of such strategies at local and regional levels hampers farmers? capacity to cope, adapt and transform following shocks and forecasted changes.

84. The lowest compound resilience scores were noted among families in Tagant (5.99 points / 20), whereas families residing in Guidimakha display the highest scores (6.77 points/ 20). Nonetheless, all study areas are placed in the ?low resilience? threshold.

85. Farmers in **Tagant** present particularly low scores in aspects related to the use of sustainable land management practices and pest management practices and compared to the other regions that present a notably better performance in these aspects. Caution should be placed on the interpretation of low resilience levels of SLM practices. This, as the module on land quality shows a good performance ? mostly attributed to farmers? own satisfaction with the status of the resource ? which might justify the limited adoption of practices to address present land degradation issues or to improve land productivity (the same pattern is observed in the other wilayas). Other aspects in need of interventions are access to markets, access to information on climate and adaptation practices, and the setting up of community-based groups and organisations, particularly aiming for small-scale agricultural producers.

86. In **Hodh El Gharbi**, low resilience scores are noted in livestock practices, pest management, sustainable land management and group membership. Vulnerability to climate shocks and limited diversification of income sources are other barriers to resilience. Inversely, farmers did particularly well on land quality, diversification of productive assets, community cooperation and livestock production. These could be leveraged on as basis for resilience building in the communities assessed.

87. In **Assaba**, weaknesses are mainly observed in the modules on sustainable land management and pests and diseases management. Other aspects that display low scores are livestock breeding, diversification of income sources, access to information on weather forecasts and membership to community-based groups. Nonetheless, farmers present good performance in modules assessing the quality of farmland and community cooperation.

88. Finally, families in **Guidimakha** perform poorly in areas linked to exposure and adaptation to climate shocks, access to information services on climate forecast, adaptation practices and sustainable agriculture, access to markets and group membership. Conversely, land quality, the diversification of productive assets and gender dynamics considered in the decision-making processes at farm level are positively contributing to resilience.

c) Barriers

89. Under the current baseline scenario, ongoing degradation processes and population vulnerability in the target watersheds of southern Mauritania will continue to be addressed in isolation by different sectors and associated investments, despite a strong commitment from the GoM and development partners towards supporting resilience building and SLM. The risk of overlap and use of maladapted practices will remain, with limited opportunities for knowledge sharing, synergy and complementarity. Without a comprehensive approach that pushes an integrated vision of the resilience building at the watershed level that takes natural resource management and economic development into account, efforts to reduce climate vulnerability and halt land degradation will not succeed, food insecurity is likely to increase and rural livelihoods will be threatened.

90. Four main barriers stand in the way of realising the objective of the project, namely to strengthen the resilience of vulnerable rural populations by improving agriculture and livestock sector planning and the application of innovative practices at the watershed level.

91. BARRIER 1: Limited capacity to design and implement strategic land and resource use planning required to address climate induced challenges

92. In the baseline situation, there are no operational examples of land-use planning organised at the watershed level designed to successfully address climate change challenges. Resource competition involves a host of highly vulnerable private stakeholders with sometimes conflicting interests. The situation is dynamic and highly complex. Degradation and associated risks will increase without an informed process to assist vulnerable communities to strategically identify issues and solutions.

93. During the PPG phase, it was found that local communities and authorities have a sound understanding of the threats posed by the various causes described above to their livelihoods; however, there is a clear lack of structured planning that would form a basis for investments and interventions by local communities themselves, the GoM and development partners. As a result, existing development

efforts are not steered in a clear, collectively-agreed direction that would be approved at the relevant scale ? namely, at the watershed level.

94. While some grassroot organisations exist in all watersheds ? mostly socio-professional ones, such as cooperatives, but also AGLCs ? with relatively strong representativeness, none of these organisations is structured at the watershed level. This impedes the capacity to initiate a participatory planning exercise at the appropriate scale. Socio-political organisations in place ? Local Development Committees and Municipal Councils ? do not consider resilience building at the watershed level, but rather operate in a siloed manner. This does not allow to fully embrace issues that are by essence basin-level challenges.

95. Overall, unless resource use is strategically planned and effectively managed, continued environmental stress compounded by climate change will inevitably lead to more conflict as vulnerable stakeholders become more desperate to access dwindling resources.

96. BARRIER 2: Limited experience and knowledge regarding identification and implementation of innovative practices

97. Vulnerable communities are anxious to gain exposure to and knowledge of innovative practices that can be applied to address current climate change-related challenges. This includes access to and examples of innovative solutions to climate change problems as well as organising the delivery of capacity required to move innovations forward.

98. During the PPG phase, surveys conducted in the target watersheds (Annexes O & N) revealed that local communities have often well identified the climate origins of some of the degradation processes at play (e.g. erosion, decreasing yields because of erratic rainfall). However, they reported that they currently lack the technical knowledge to adapt to these detrimental impacts, and generally feel powerless in the face of threatened livelihoods and, more broadly, increased vulnerability. Past and ongoing initiatives have not always embraced a climate approach to development challenges, resulting in maladaptation or non-adapted investments. Communities and local authorities were adamant that adequate support should take more the form of mid-term, skill-sharing accompaniement and less of one-time investment without substantial follow-up. This is exaclty the rationale behind the Agro-Pastoral Field School strategy to be implemented under Outptut 2.1 of the proposed project.

99. BARRIER 3: Limited ability to capture, mainstream and upscale best practices

100. The challenges faced in the project?s target areas is emblematic of issues faced across much of the country. There is a need to set in place a program that can deliver valuable lessons that may be captured and upscaled across a wider geographic area. The multiple benefits of an integrated, participatory and knowledge-based approach to land use planning organised at the watershed level where competition is most severe are not well known at either the regional or national level. These

principles and practices are not integrated into national planning and policy. There is a need to show that this sort of approach buoyed by innovative improvements to production practices is capable of reducing climate-related risks to vulnerable communities and mainstream this across a broad geographic area.

101. BARRIER 4: Limited access to seed funding for the development of resilient Income-Generating Activities

102. As mentioned above and highlighted in PPG mission reports, target communities often have a thorough understanding of their needs in terms of the development of climate-resilient, income-generating activities (IGA). However, their often lack both technical skills (cf. Barrier 2) and financial means to invest in such IGAs. Venture capital is rare in the target areas, and community members seldom have the necessary collaterals to obtain loans.

103. This situation is not unsolvable however, as past and ongoing experiences with innovative financing mechanisms in rural areas ? namely CECA (Caisses d?Epargne et de Cr?dit Agricole) and MICO (Mutuelles d?Investissement et de Cr?dit Oasien)[31][31] ? have proven their ability to provide sustainable micro-financing to local communities, enabling them to invest in more resilient livelihoods. Financial mechanisms informed by past successes therefore need to be established in the target watersheds.

2) The baseline scenario and any associated baseline projects.

104. In addition to the baseline elements and scenario described above, the following projects have been identified that form part of the baseline situation in which the proposed project will be embedded. Some will contribute to the co-financing of the LDCF project, while others will provide evidence, lessons, tools and approaches.

Table 4. Baseline projects for the proposed LDCF investment.

Baseline project	Baseline project details	Complementarity as LDCF Baseline

Scaling up Resilience in Africa?s Great Green Wall (SURAGGWA)	**Financier:** Green Climate Fund (GCF) **Amount:** USD 154 million (GCF only) **Implementing agency:** FAO **Duration:** 2022-2032 **Co-financing:** USD 10m	The Mauritanian components of this regional project[32][32] aim to increase the climate resilience of most vulnerable livelihoods in Mauritania?s Sahel area through ecosystem-based adaptation of agro-silvo-pastoral systems. The project will cover four Wilayas (Trarza, Brakna, Guidimakha, and Gorgol). The proposed activities are capacity building of institutions and communities, the large-scale restoration of agro-silvo-pastoral systems for sustainable food and fodder production, market development and improve income generation activities for small holders and agro-silvo-pastoral producers through diversification of livelihood options (including sustainable exploitation and management of NTFPs for instance). Guidimakha is the common area of intervention of the two projects. This project, complementary in design, will contribute to Components 1, 2 and 3. Additionality of LDCF funds with regards to GCF investment is further outlined in the Additional cost reasoning section

Implementation of the Strategy and Action Plan of the Great Green Wall National Agency (ANGMV)	**Financier:** Recipient Government and multiple multi-lateral donors **Amount:** Over USD 10m during project life (USD 2m annually of Government contributions only) **Implementing agency:** National Government **Duration:** 2022-2026 **Co-financing:** USD 4,500,000	The ANGMV works to address desertification and the advancement of the Sahara Desert by improving productivity of natural resources, socio-economic conditions of rural populations, and SLM. The ANGMV currently operates in three wilayas out of the four from the proposed GEF project, with interventions in Assaba (Meisah), Hodh el Gharbi (Barbara) and Tagant (Tidjikja). The GEF LDCF project will provide a useful model for participatory and integrated decision making and management of natural resources fully considering actual and future climate change impacts. Additionality of LDCF funds with regards to ANGMV investment is further outlined in the Additional cost reasoning section.

Resilience of food insecurity and nutrition in the Sahel of Mauritania	**Financier:** African Development Bank **Amount:** USD 20.8m (USD 283m for regionally) **Implementing agency:** National Government **Duration:** 2015-2020 **Co-financing:** N/A	This project is designed to reduce poverty and hunger through improvements to the agro-sylvo-pastoral and fishery sectors. This includes rural infrastructure development and development of value chains and regional markets. The project is operational in full project area of proposed LDCF project. The demonstration activities and natural resource governance models will link with the LDCF effort, particularly its Component 2.

Value Chains Development Programme for Poverty Reduction	**Financier:** IFAD **Amount:** USD 17.8m **Implementing agency:** National Government **Duration:** 2010-2016 **Co-financing: N/A**	The project works to improve the value chains of vegetables, dates, milk, poultry, skins and hides, red meat and non-timber forest products. The programme provides important lessons on value chain development and market penetration particularly useful to inform the integrated, participatory and climate resilient approach provided by the GEF LDCF project.
Regional Sahel Pastoralism Support Project	**Financier:** World Bank **Amount:** USD 45m (USD 248m regionally) **Implementing agency:** Permanent Interstate Committee for Drought Control in the Sahel **Duration:** 2015-2021 **Co-financing: N/A**	The project is designed to support poverty reduction and to promote shared prosperity, including for women and the youth. The project helps improve productivity, sustainability, and resilience of pastoral livelihoods, as prioritised in the Nouakchott Declaration on Pastoralism. This Declaration aims to secure the lifestyle and means of production of pastoral populations in order to increase the incomes of pastoralists. The project is a multi-country program covering Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal. Collaborators include: the World Bank, FAO, World Organization for Animal Health, Africa Union, ECOWAS, CILSS and WAEMU. The project will contribute to the integrated decision making and management approach of the GEF LDCF project.

Boosting restoration, income, development, Generating Ecosystem Services (BRIDGES)	**Financier:** Turkey and EU-ACP **Amount:** USD 3.6m **Implementing agency:** National government **Duration:** 2018 -2021 **Co-financing:** N/A	The BRIDGES project aims to catalyse action, support sustainable management and restoration of dryland forests and agro-sylvo-pastoral systems in three Great Green Wall countries - Eritrea, Mauritania, Sudan - stimulating production, benefiting livelihoods and generating ecosystems goods and services. It also helps stimulate South-South cooperation between Turkey and Africa?s Great Green Wall and across dryland regions worldwide. This project is executed by FAO and will contribute to Component 2 of the LDCF project.
Mauritanian Alliance against Climate Change (Alliance mauritanienne contre le changement climatique - AMCC phase 2) -	**Financier:** European Union **Amount:** Euro 7.5m **Implementing agency:** National Government **Duration:** 2019-2023 **Co-financing:** N/A	This project is aimed to enhance food and nutrition security true adaptation to climate change. The project covers five regions in Mauritania (Trarza, Brakna, Assaba, Gorgol and Guidimakha). It mainly contributes to progressively meeting SDG Goal 13, but it also promotes progress towards achieving the SDGs 1 (poverty); 2 (hunger) and 15 (biodiversity). Its overall objective is to sustainably strengthen the resilience of natural systems and ecosystem services from which the most vulnerable can benefit. It has two specific objectives: i) reinforce the institutional set-up to monitor and coordinate climate change issues in the country; and ii) adopt good practices for CC adaptation and sustainable management of human and agro-sylvo-pastoral systems in the saharo-sahelian region. Therefore, it supports the achievement of Component 2 of the proposed project.

West Africa Coastal Areas Resilience Investment Project (WACA)	**Financier:** World Bank **Amount:** USD 20m **Implementing agency:** National government **Duration:** 2019-2023 **Co-financing: N/A**	This project aims to increase resilience to climate change and reduce coastal erosion and flooding thought infrastructure investment and natural resources.

3) The proposed alternative scenario with a brief description of expected outcomes and components of the project and the project?s Theory of Change.

105. Rural populations in south-eastern Mauritania are highly vulnerable to climate change. Climate change is causing weather patterns to shift, intensifying and disrupting weather phenomena. These changes and associated impacts are not compatible with traditional production methods. This is forcing vulnerable communities to compete for dwindling resources and concentrating production within already degraded watersheds. This situation is exacerbating resource degradation, compounding the negative impacts of climate change and increasing the vulnerability of already at-risk communities.

106. Vulnerable communities do not benefit from the capacity and experience required to implement sustainable management of natural resources. This is critical for communities dependent upon shared resources to sustain productive management. Communities require the skills and knowledge to identify climate change impacts, strategically identify appropriate responses, and generate production models designed to enhance resilience. In this context, the proposed LDCF project sets the objective to strengthen the resilience of vulnerable rural populations by improving watershed-level planning of natural resources and implementing innovative, climate-resilient livelihood options.

107. To achieve this objective, the intervention strategy is designed around three fully-integrated components. Under Component 1, the capacities required to engage in strategic land- and resource-use planning will be strengthened, with a focus on assisting private sector farmers and livestock herders to effectively identify and address climate change risks while alleviating climate-related conflicts. This

will result in collectively-elaborated Integrated Watershed Development Plans (IWDPs). These IWDPs, as well as other relevant land-use plans will form the basis of the interventions under Component 2, which will aim to implement landscape restoration measures with a view to enhance the supporting capacity of natural resources to sustain climate-resilient livelihoods. This will be achieved by disseminating climate-smart agricultural and land-management practices through Agro-Pastoral Field Schools, as well as through the direct implementation of such practices in degradation hotspots. In addition, under Component 2, the financial barriers to the strengthening of climate-resilient livelihoods will be lifted through innovative financial mechanisms. This will pave the way for private investment in a number of climate-resilient value chains. Finally, under Component 3, results from the project will be evaluated, documented and disseminated, with a focus on the scientific monitoring of ecological restoration processes. In addition, these results will be mainstreamed into national-level policies and regulatory frameworks to maximise sustainability and upscaling potential.

108. Project results will greatly increase the resilience of highly vulnerable private smallholders to climate change and variability and will directly contribute to improving their food security and nutritional status. Results will include more reliable water availability, reduced erosion and desertification and reduced risk of conflicts. The project will work to strengthen the ability of vulnerable communities to identify, strategically plan for and implement innovations designed to address emerging climate-related challenges. The project will set in place innovative tools to manage risks, including concrete tools at the production level and supportive policies and capacities within decision-making structures. Gender aspects are and will be well considered and integrated within all project efforts. The project will take an ecosystem-based approach, working to support smallholders, private enterprises and government service providers to assess resource issues holistically integrating soil, water, weather, forage, forestry, and other factors critical to maintaining the ecosystem services and resilience upon which rural communities depend.

109. A Theory of Change diagram for the proposed LDCF investment is presented below.

Figure 8. Theory of change for the proposed LDCF investment.

Problem statement

Rural populations in south-eastern Mauritania are highly vulnerable to climate change. Climate change is causing weather patterns to shift, intensifying and disrupting weather phenomena. These changes and associated impacts are not compatible with traditional production methods. This is forcing vulnerable communities to compete for dwindling resources and concentrating production within already degraded catchments. This situation is exacerbating resource degradation, compounding the negative impacts of climate change and increasing the vulnerability of already at-risk communities.

In this context, LDCF investment is sought to achieve the following objective:

Project objective

To strengthen the resilience of vulnerable rural populations by improving agriculture and livestock sector planning and the application of innovative practices at watershed level in Mauritania

However, to achieve this objective, a number of barriers must be overcome:

Barriers

Limited capacity to design and implement strategic land and resource use planning required to address climate induced challenges

Limited experience and knowledge regarding identification and implementation of innovative, climate-smart agricultural practices and climate-resilient IGAs

Limited access to seed funding for the development of resilient IGAs

Limited ability to capture, mainstream and upscale best practices

To overcome these barriers, the following key outputs will be delivered:

Key project outputs

1.1 Community-based governance structures established and operationalised to mainstream climate resilience into watershed governance, using an integrated watershed management approach
1.2 Climate-proof, integrated watershed management plans developed and implemented at watershed level to enhance resilience of vulnerable rural communities
1.3 Human and institutional capacity and local knowledge strenghtened to strategically address climate vulnerabilities and enhance resilience at watershed level using adaptive innovations, strategic planning and monitoring

2.1 Knowledge, adaptive practices and innovations mainstreamed through Agro-Pastoral Field Schools	2.2 Productive landscapes restored and ecosystems functionality supported at watershed level to enhance resilience: sand dune stabilised, small hydrological infrastructures rehabilitated & constructed, eroded banks restored, ASP productive landscapes restored	2.3 Investments in climate-resilient and income-generating activities in target watersheds catalysed through innovative financial mechanisms

3.1 Project results mainstreamed to enhance resilience and adaptive policies
3.2 Project lessons captured and knowledge managed & disseminated
3.3 Effective Monitoring, Evaluation and Learning (MEL) implemented

These outputs will deliver the following expected outcomes:

Outcomes

1. ASP producers are cooperatively and effectively managing shared resources using an integrated water-shed-management approach to address climate change impacts and build resilience at watershed level

2. ASP producers are using innovative solutions and climate coping practices to enhance climate resilience and resource sustainability at watershed level

3. Climate-resilient and adaptive practices are mainstreamed into decision-making processes and lessons learned are widely disseminated

In turn, these outcomes will lead to reach the project objective

Key assumptions:

Brief Description of Expected Outcomes and Components

COMPONENT 1: ADAPTATION AND RESILIENCE PRACTICES SECURED THROUGH COMMUNITY-CENTRED WATERSHED MANAGEMENT PLANNING AND PARTICIPATORY GOVERNANCE SCHEMES

Outcome 1: Agro-sylvo-pastoral producers are cooperatively and effectively managing shared resources using an integrated watershed management approach to address climate change impacts and build resilience at watershed level

110. To achieve Outcome 1, the proposed project will start at the grassroot level by profiling, identifying gaps and subsequently complementing existing community-based organisations in the target watersheds (Output 1.1). Together with relevant local authorities as well as representatives of decentralised ministerial divisions, these grassroot organisations will participate in the establishment of Watershed Development & Resilience Committees (WDRC; Output 1.2). The WDRCs, grassroot organisations and extension officers will benefit from training on adaptation planning (Outputs 1.1 & 1.2), which will facilitate the development of Integrated Watershed Management Plans that fully incorporate resilience-building priorities (Output 1.2) as well as mainstreaming of adaptation planning into local governance (Output 1.3).

Output 1.1: Gender-sensitive community-based governance structures are established and operationalised to mainstream climate resilience into watershed governance, using an integrated watershed management approach

111. The proposed project will support the establishment of governance bodies organised within each target watershed to support the completion of strategic land- and resource-use planning. The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)[33][33] will be the guiding principles to support decision-making and planning processes, build the capacities of government service providers and community members. The overall objective will be to generate cooperation regarding the governance of watershed areas and provide a framework for land- and resource-use plan creation and implementation.

112. To achieve this, a profiling exercise will be conducted in the target watersheds to gain a thorough understanding of the status of two types of organisations: i) water management groups; and ii) land-use management groups. These profiles will complement the findings of the SHARP+ survey presented in Annex N, as they will cover both the resident population and the mobile population that spends part of its annual cycle in the villages, and will lead to a detailed understanding of status by group, power structures, decision-making structures, age group differentiation and past and previous resource-based conflicts. A special focus will be placed on the interplay between the underlying gender

dynamics and the challenges faced by women, men and vulnerable social groups, as well as the opportunities offered to them.

113. Based on the profiling results on existing grassroot organisations, gaps will be identified and communities will be supported to create complementary groups. Awareness-raising activities on Integrated Watershed Management Planning to enhance resilience and strengthen livelihoods will be conducted under this output. This is in addition to training on best adaptation practices that will be conducted under Outcome 2.

114. One type of grassroot organisation to be supported by the proposed project is Dimitra community listeners clubs (CLCs). A particular kind of CLCs are the Dimitra clubs, established and supported by FAO across sub-Saharan Africa ? over 3,400 have been created as of yet[34][34]. Dimitra clubs are voluntary, informal groups for women, men and youth who discuss common problems and determine ways to address them by acting together and using local resources. Agriculture is a common theme but no exclusively; other topics may include climate change, education, health, infrastructure, nutrition, peace and women?s status. Although the FAO methodology entails an initial support to facilitate the setting up of the clubs and provides them with training and coaching, the clubs themselves are self-managed. Dimitra Clubs create a space to also discuss and take action in relation with community social norms and behaviours affecting women ? enabling women?s leadership and encouraging men?s engagement. Clubs own a solar-powered radio which allows them to maintain contacts with one another but also with technical partners. By fostering partnerships with local radio stations, Dimitra Clubs learn from one another, broadcast their initiatives and spark dialogue in the wider community and beyond.

115. Past experiences with Dimitra clubs in Mauritania since 2012 have successfully proven their capacity to enable women and youths in particular to contribute to all the public matters of community life[35][35],[36][36], and therefore to engage in decision-making. As required, Dimitra clubs will be established and supported in the target watersheds. In other cases, the Dimitra approach will be promoted among existing CLCs, with a view to avoid any duplication of community groups.

Table 5. Proposed activities under Output 1.1.

Activity	Description
1.1.1	Establish community-based water and land-use management groups in each targeted watershed through the use of Community Listening Clubs (CLCs) following the Dimitra Clubs approach

1.1.2	Conduct awareness-raising sessions benefiting at least 100 members of community-based water and land-use management groups (exact number of beneficiaries in each watershed to be determined proportionally to the population in the watershed, out of which at least 50% are women), on human-centric and climate-proof Integrated Watershed Management Planning to enhance resilience and strengthen livelihoods

Output 1.2: Climate-proof integrated watershed management plans are developed and implemented at watershed level to enhance resilience of vulnerable rural communities

116. Under this output, Watershed Development & Resilience Committees (WDRCs) will be established and operationalised in the four target watersheds as integrated governance platforms that serve as joint decision mechanisms for sustainable land use and conflict resolution in the watersheds.

117. Multi-level, watershed-level governance structures are required to enhance participation, ownership, and long-term involvement of the local communities in the responsible management of the activities and infrastructures developed with the project support ? but also beyond the project?s scope. The establishment and capacity building of watershed-level multi-stakeholder management committees will thus be facilitated to act as coordination, monitoring and decision-making bodies for the oversight of the Integrated Watershed Management Plans (IWMPs) to be developed under this output. WDRCs will also be key for project sustainability, and they will be central actors in the elaboration and implementation of the project exit strategy.

118. The WDRCs will include representatives of the wilaya prefectures, municipalities, Regional Directorates of Environment and Sustainable Development (Directions R?gionales de l?Environnement et du D?veloppement Durable, DREDD), of Agriculture, of Livestock and other relevant ministries, delegates from the local water and land-use management groups supported under Output 1.1, professional cooperatives, land-use and water management groups and other stakeholders, as required. Special attention will be given to ensure a numerically balanced composition of the WDRCs between government representatives, and representatives of local communities, end-users as well as other grassroot groups.

119. These committees will also act as key interlocutors for future development initiatives in the target watersheds. Typically, this will facilitate potential consultations for the construction / rehabilitation of large hydrological infrastructures (e.g. Baghdada dam in Tikjidja; dam downstream of Tamourt Aghwawit in Meisah) that is beyond the scope of the proposed project, but which would be relevant to build the resilience of communities in the target watersheds.

Table 6. Proposed activities under Output 1.2.

Activity	Description

1.2.1	Establish Watershed Development & Resilience Committees (WDRCs) in the four target watersheds, building on the community-based resource use management groups, to support a participatory an inclusive development of watershed management plans
1.2.2	Train the members of the WDRCs and undertake participatory assessments of climate vulnerabilities within each of the target watersheds and identify key innovative climate change adaptation practices to enhance resilience in each target watershed
1.2.3	Develop human-centric and climate-proof Integrated Watershed Management Plans in each of the target watersheds. Disseminate the IWMPs among development practitioners (governmental institutions, donor agencies etc.) so that these partners can become interested in supporting the implementation of the IWMPs by complementing LDCF interventions.

Output 1.3: Human and institutional capacity and local knowledge strengthened to strategically address climate vulnerabilities and enhance resilience at watershed-level using adaptive innovations, strategic planning and monitoring

120. Based on the IWMPs and resource-specific management plans, it will be necessary to update Communal Development Plans so that they reflect priorities highlighted at the watershed level and fully mainstream climate adaptation and resilience. The revision of CDPs will also be an opportunity to fully describe and institutionalise the role of WDRCs in development planning at the watershed level. This process will involve training of municipal councilors regarding community-based planning and the integration of climate change adaptation and resilience practices. This will include regional managers and staff from the MEDD. The project will link with Dimitra clubs in the selected communities. Local Development Committees and Municipal Councils will participate in planning to ensuring coherence and compatibility with Local/Communal Development Plans.

121. Using the established and capacitated governance bodies, the project will set in place and operationalise community-based land and resource planning designed to identify and prioritise innovations and strategically address vulnerability and resilience issues. The planning tools will address issues specific to each watershed and sub-watershed. Each land and resource use plan will be applied to comprehensively cover pastoral, agriculture, water and forest resources. This watershed-based approach to resource management will support Mauritania in its current efforts to shift towards a territorial approach that embraces multi-sectoral, bottom-up and site-specific interventions.

122. Based on regional and global best practices, the strategies will be designed as dynamic tool for snallholders, private sector producers and government agencies to coordinate their efforts to address emerging climate change challenges. Each community strategy will be evaluated and updated annually. This will include an evaluation of current resource management trends and emerging climate change impacts.

123. The planning tools, in themselves innovative (through the deployment of open source and free mobile applications such as Collect Mobile and the Hand-in-Hand's Geospatial data platform that allow easy, quick and burden-free data collection that is geo-referenced and related to environmental monitoring), will help select a suite of technical innovations to be applied at each target site to address climate impacts. This will include best international principles and practices related to Sustainable Land Management (SLM) and Sustainable Production Intensification (SPI) designed to increase resilience and promote strategic climate adaptation approaches. Additionally, the reforms promoted through the planning process will integrate tools generated through programs such as TerrAfrica and World Overview of Conservation Approaches and Technologies (WOCAT). These have generated/documented/assessed a suite of innovations that may easily be upscaled and adapted to local conditions[37][37] (see Outcome 2).

Table 7. Proposed activities under Output 1.3.

Activity	Description
1.3.1	Undertake capacity-building interventions targeting local decision makers from municipalities, extension services, local representatives of MEDD and other relevant ministries, and community leaders with regards to the best available knowledge and tools to improve the mainstreaming of climate change adaptation and vulnerability considerations into land use planning and related governance schemes to enhance resilience of vulnerable rural communities at watershed level including through the use of VGGT
1.3.2	Map out the current gaps in mainstreaming climate sensitivity into the existing local governance schemes and identify entry points to mainstream resilient and adaptive production practices into the CDPs
1.3.3	Prepare amendments to develop climate-proof CDPs for each of the communes encompassing the target watersheds. Amendments will also include innovative solutions related to funding and financing resilience and adaptive practices. The proposed amendments will be submitted for validation during the next cycle of updating the CDPs. Disseminate the revised CDPs among development practitioners (governmental institutions, donor agencies etc.) so that these partners can become interested in supporting the implementation of the CDPs by complementing LDCF interventions.

COMPONENT 2: CLIMATE SENSITIVE PRACTICES AND INNOVATIONS APPLIED TO SUPPORT THE UPTAKE OF RESILIENCE MEASURES BY VULNERABLE COMMUNITIES AND PROMOTE SUSTAINABLE USE OF RESOURCES IN WATERSHED ECOSYSTEMS

Outcome 2: Agro-sylvo-pastoral producers are using innovative solutions and climate coping practices to enhance climate resilience and resource sustainability at watershed-level

124. Under Component 2, the resilience of local communities will be strengthened though the implementation and dissemination of climate-smart agricultural practices as well as the restoration of productive landscapes at the watershed level that are currently being degraded ? through non-climate as well as climate impacts ?, thereby threatening the capacity of local livelihoods to adapt to the effects of climate change. IWMPs as well as other land-use plans will guide the design of these restoration interventions, which will include dune fixation, riverbanks stabilisation, construction and/or rehabilitation of small hydrological infrastructures and restoration/protection of rangelands and forested areas.

125. Through the proposed project, a two-step approach will be followed for the implementation of land management practices. Firstly, these practices will be disseminated through women-inclusive Agro-Pastoral Field School (APFS) sessions on demonstration plots / sites, for local farmers to reproduce them at their own pace (Output 2.1). Secondly, some of these measures will be directly implemented in the target watersheds, in coordination with local stakeholders, with a view to cover larger areas and target degradation hotspots that are in need of urgent intervention (Output 2.2).

126. Under this component, the climate resilience of local livelihoods will also be strengthened by diversifying income streams, including through the development of women-sensitive, income-generating activities with a strong climate resilience potential and environmental co-benefits (Output 2.3). To facilitate private investment in climate-resilient livelihoods, innovative financial mechanisms will be set up and adapted to the specific socio-economic conditions of each target watershed.

Output 2.1: Agro-pastoral Field Schools established and operational to support the adoption of climate resilient and adaptive production practices

127. Landscape management measures will be selected among those identified in the scientific literature for their adaptation and land restoration benefits[38][38], and will be adapted to the biophysical and socio-economic specificities of each target watershed. Their implementation will take place in the planning framwork set forth in the Watershed Development Plans and other land-use and development plans in effect. These measures will indicatively include rivebank restoration, dune stabilisation, anti-erosion actions and rangeland management.

128. In addition, climate-resilient agricultural practices will be considered, tested and enabled, such as: i) the use of climate-adapted crop varieties; ii) reduced tillage; iii) alternatives to chemical fertilisers (use of compost) and pesticides (biological control, intercropping); iv) fascines; v) za?; vi) the use of leguminous plants; vii) crop diversification (over time and space), better integration of livestock-crop-trees on land and practices to improve soil health crop rotation. These techniques will help reduce rural communities? vulnerability to the impacts of climate change, while improving and intensifying agricultural productivity and fighting land degradation.

129. The preferred approach to enable the uptake of these practices is through Agro-Pastoral Field Schools (APFS), which have been implemented in Mauritania since 2009. It consists in informal education approach for adults to enable the development and experimentation of improved farming practices through field observation and hands-on training. Participatory methods are used to create an environment conducive to learning, in which participants can exchange knowledge and experience in a risk-free setting. Practical field exercises using direct observation, discussion and decision making encourage learning by ?doing. Following the interests of local producers, technical topics that can be addressed through APFS include soil, crop and water management, seeds multiplication and varietal testing, agropastoralism, aquaculture, agroforestry and nutrition, but also social topics such conflict resolution, income generation, access to markets and marketing of products. The APFS process facilitates individual, household and community empowerment and cohesion. Indeed, APFS have proved to strengthen not only technical skills and decision-making capacities of farmers, but also to significantly influence the community as well as intra-household dynamics. APFS strengthen community relations and the capacity of listening to others? opinion, to formulate and express personal points of view and to find together a common solution through the process of communication and learning. It will thus be a useful stepping stone towards the reduction of conflicts over natural resources[39][39].

Lessons learned from APFS initiatives

A limited but growing body of literature examines past and ongoing APFS experiences to identify lessons learned useful for new initiatives. The APFS curricula and overall approach to be adopted in the proposed LDCF project will be informed by these lessons learned. A selection of such lessons learned are briefly described below.

? The training of field school facilitators is a crucial element, which cannot be reduced to conventional training. For example, facilitators must be trained to manage the governance of APFSs to maximise their sustainability. Handing over the leadership of the school plot after a few seasons of support can be an effective way to achieve this, as was experimented in an APFS project conducted in northern Togo (2014-2018). The support provided to the groups by the technicians was lighter and more punctual during the third cycle of the field schools in order to encourage their autonomy; while some decided to continue the trials for a fourth cycle, others developed the "field school" plot into a collective field (without comparative trials but managed collectively)[40][40].

? Several barriers to the successful implementation of APFS have been identified. They include, *inter alia*, the top-down delivery of training, the irrelevance of the curriculum[41][41] and an inadequate targeting strategy (equity to include the poorest vs. efficiency to include farmers with resources, agency, and education)[42][42].

? Studies and evaluations rarely provide sufficient information concerning the long-term impacts of APFS[43][43]. Despite the relative diversity of APFS assessment methods, most studies focus on inputs (knowledge and skills) and outputs (changes in practices, in agricultural or economic performance) for farmers. Studies of outcomes (e.g. savings, loans, production diversification, self-confidence) and impacts (e.g. poverty reduction, quality of life, empowerment, environment) are rare. In the context of the proposed project, some of these outcomes and impacts will be monitored towards the end of the project (Component 3).

130. Proposed activities under this output are outlined below.

Table 8. Proposed activities under Output 2.1.

Activity	Description
2.1.1	Draft model curricula for agro-sylvo-pastoral activities to be conducted with APFSs, adapted to the different production systems involved. The curricula will be tailored to different agricultural systems and integrate topics including climate change adaptive practices related to farming, animal health, nutrition, genetic improvement, pasture management, use of wild seeds to rehabilitate community pasture lands, water and soil management including applying crop residues, improvement of soil fertility by managing crop and livestock cycles, composting, agroforestry, early warning systems, community supervising systems, land rights, agroecology principles, horticulture, perennial crops, use of renewable energies, etc.
2.1.2	Train at least 8 APFS master trainers and 100 APFSs facilitators including members from extension services, agriculture and livestock associations, local NGOs, civil society, private veterinarians and producers
2.1.3	Provide training to at least 10,000 agro-sylvo-pastoralists in the target watersheds through 400 APFSs (25 individuals maximum per cohort with at least 50% women) using training curricula adapted to each watershed
2.1.4	Establish effective communication channels between APFSs cohorts through open days, exchange visits and national meetings, as well as through the use of participatory videos, in collaboration with e-agriculture platforms such as Digital Green.

Output 2.2: Productive landscapes restored and ecosystems functionality supported at watershed level to enhance resilience

? Dune stabilisation

131. Dune invasion and sanding are threats shared by the target watersheds of Tidjikja, Barbara and Dafort. In Tidjikja, this threat is particularly prominent upstream as well as along the wadi valley with a degradation in date palm cultivation areas. Significant sand deposits also obstruct the wadi?s minor bed in several places, creating flow derivations and unmanaged overflow. In addition, the El Khatt agricultural area[44][44], which is a depression that usually benefits from significant water inflow in the rainy season, is partially silted up. This diverts the water flow in the rainy season, making half of the surface area of the basin unusable.

132. The Barbara watershed is characterised by the degradation of the minor bed with a deepening of the gullies due to strong water erosion; a threat of silting up of the Radhi palm grove and of the

settlements under construction has also been noted. In Dafort, there is a strong threat of silting up of the Ndoumoully and Tektak? palm groves in the upstream part of the watershed.

133. Two types actions are envisaged to fight the sanding, dune invasion and siltation degradation processes: dune fixation (both mechanical and biological) and mechanical desilting. Mechanical fixation implies the use of inert materials (branches of local trees or synthetic material) to be established on the shifting dunes in the form of palisades (wattle and daub) to reduce the progression of the dunes. Biological fixation of dunes involves planting seedlings of local tree and shrub species previously raised in nurseries. Dune fixation has been experimented in Mauritania for decades, including through the support of GEF-funding initiatives (e.g. the SCCF-funded project Ecosystem-based Adaptation through South-South Cooperation ? EbA South). Best practices and challenges in terms of species selection (including geographical sourcing of seeds), irrigation, weeding, grazing pressure etc. have been well documented[45][45]. The proposed project will thus be able to capitalise on extensive experience and lessons learned, which will also include regular exchanges with the GEF-funded, UNEP-implemented project #10103 ?Climate change adaptation and livelihoods in three arid regions of Mauritania?.

134. On-the-ground operations will be conducted by hired local workers under the supervision of MEDD extension officers, themselves under the supervision of project staff and scientific partners. Where possible, local NGOs will be hired to assist. Not only will the recruitment of local workers provide temporary employment ? especially for youths ? in areas where the formal activity rate is lower than the national average[46][46], but it will also facilitate the dissemination of these best sustainable landscape management practices through a learning-by-doing approach. This will also be an opportunity to raise awareness among local communities on the need to protect the perimeters where biological fixation will have been implemented against grazing pressure. The social acceptability of such measures ? which may be seen as overly constraining or even punitive otherwise ? will thus be enhanced.

? Construction & rehabilitation of small hydrological infrastructures

135. Under this output, light hydrological infrastructures will be restored and/or established to allow for a climate-adapted management of water resources in the target watersheds ? in accordance with the IWMPs to be developed under Component 1. Tidjikja, Meisah and Dafort will particularly benefit from the activities to be implemented under this output, as this is where needs were participatorily identified during the PPG phase, as outlined below.

136. In Tidjikja, existing sills are often not dimensioned adequately, which leads to a water bypass effect (idem for the whole minor bed of the Tidjikja-Rachid sub-watershed). In addition, some of the infrastructures designed to slow down runoff water (slowing down sills, dykes, etc.) are currently in a state of disrepair, which prevents them from fulfilling their role. Combined with others, these factors

have contributed to provoke a drastic drop in the level of the water table (from 5 to 10 m deep a few years ago to more than 30 m deep today according to the local palm farmers).

137. In Meisah, a dyke had been installed upstream of the tamourts, which not only is currently degraded, but is also counterproductive for water conservation as demand for agricultural water is rather located around the tamourts, and not upstream. There is therefore a need to create a new dyke with a discharge mechanism downstream of the tamourts.

138. In Dafort, existing weirs do not function right as they are not dimensioned properly, leading to the water flow bypassing the infrastructures in the rainy season. This is in addition to the defectiveness of some of these infrastructures.

139. In Barbara, some earthen dykes exist and are still maintained but are not dimensioned to facilitate aquifer recharge. There is thus a need to enhance these infrastructures.

140. Under this output, the proposed project will conduct detailed, costed feasibility studies prior to investing in the re-dimensioning and rehabilitation of hydrological infrastructures. In addition, maintenance plans will be collectively elaborated with water management committees and training will be provided to ensure the sustainability of these infrastructures. Overall, this will contribute to enhancing water safety in watersheds threatened by the climate-induced rarefaction of usable water.

? Stabilisation and restoration of eroded banks

141. In three of the target watersheds ? namely Tidjikja, Barbara and Dafort, large sections of the wadi banks are eroded. This causes siltation issues in the wadi beds, leading to disruptions of the water flow and generally prevents local communities from managing water resources in accordance with their domestic and agroforestry needs, a situation that is likely to aggravate with the anticipated impacts of climate change on water availability.

142. In Tidjikja, including in the Rachid minor bed, wadi banks of the watershed are experiencing a relatively advanced degree of erosion. The same phenomenon is visible in Dafort and in Barbara; in the latter, this especially threatens to lead to the silting up of the Radhi palm grove in the oasis and the tourist inns under construction.

143. While the proposed project will intervene on small hydrological infrastructures, it is necessary to address the bank degradation issue for these infrastructures to deliver their full potential in terms of water management. Consequently, efforts will be undertaken to stabilise eroded banks, mostly through mechanical solutions combined with biological fixation.

? Restoration of degraded agro-sylvo-pastoral landscapes

144. Degradation processes in rangeland and forested areas are evident in all four target watersheds. These processes hamper the capacity of local communities to cope with the adverse impacts of climate changes, as degraded resources ? from grazing pressure, erosion and unsustainable tree felling ? cannot sustain vulnerable rural livelihoods that intrinsically depend on them. Typically, about 80% of local communities rely on woodfuel for cooking, which is generally not harvested sustainably[47][47]. In addition, these processes are further aggravated by some climate-induced phenomena, such as gully formation resulting from increasingly intense rainfall events in the wet season.

145. In Tidjikja, severe land degradation has been observed in the southern part of the watershed?s minor bed due to tree felling and overgrazing. Animal divagation in palm groves and rainfed farming areas is also an obstacle to the development of climate-resilient agricultural activities. In Meisah, the hillsides are marked by a strong gully formation towards the downstream part of the basin. These gullies widen after each rainy season and further degrade pastoral areas. This area is also a gravel extraction area exploited to meet the construction needs of the town of Kiffa; unsustainable quarrying further exacerbates gully formation and tends to aggravate water erosion.

146. In Barbara, animal roaming in the Radhi palm groves and rainfed agricultural areas can be observed, along with the degradation of most pastoral areas of the basin due to water erosion. Finally, in Dafort, a large forested area (approx. 150 ha between Dafort and Bourguiba) with strong gum tree potential is being threatened by unsustainable tree felling and water erosion.

147. To combat these degradation processes aggravated by climate impacts and that further hamper the climate resilience of local livelihoods, a number of interventions will be taken. All on-the-ground interventions that results in temporarily constrained access to natural resources (e.g. fencing to facilitate the regeneration of pastures and forest stands) will be accompanied by awareness raising among local communities, with a special focus on local administrative and customary authorities on: i) the risks for the communities themselves associated with letting degradation processes unfold; and ii) the expected benefits of the interventions to be implemented by the project with the support of the communities. Similarly to the design of project interventions (Component 1), their implementation will strongly rely on a participatory process that has proven to be a necessary condition for social acceptance. Some of the project interventions have been selected to generate immediate benefits for the communities (e.g. distribution of improved cookstoves, employment of local people by the project, implementation of irrigation); these will be highlighted with the communities themselves to compensate for the longer-term horizon of the main expected benefits.

Table 9. Proposed activities under Output 2.2.

Activity	Description
Stabilisation of sand dunes	
2.2.1	Undertake a study to develop intervention protocols adapted to each target watershed for the mechanical fixation of dunes. The study will be developed by national experts (e.g. Centre de Recherche pour la Valorisation de la Biodiversit? (CRVB) of the Ecole Normale Sup?rieure de Nouakchott; Biology Department of the Universit? des Sciences, de Technologie et de M?decine) with explicit references to documented best practices and lessons learned.
2.2.2	Stabilise and fence at least 200 hectares of dunes through mechanical and biological fixation[48][48] (Tidjikja: at the level of the palm groves of the sub-basins of Tidjikja on 25 ha along Oued Tidjikja on its northern part of the minor bed of the oued, Lahweytat on 25 ha next to the northern part of the minor bed of Oued Lahweytat and 50 ha in Rachid & desiliting of the El Khatt area; Barbara: upstream of the watershed area (50 ha) to halt the progression of sand dunes at the levels of the minor bed of the wadi in the Radhi palm grove zone; Dafort: at the level of the palm groves of the villages of NDoumoully (25 ha) and Tektak? (25 ha)).
2.2.3	Raise awareness and encourage the protection of plantation areas through physical fencing and human surveillance, and by strengthening livelihoods through income generating activities under Outcome 2.2 to reduce pressure from livestock grazing.
2.2.4	Undertake a hydrological assessment for the rehabilitation and construction of small hydrological infrastructures (dykes, weirs, sills) in target watersheds to facilitate the replenishment of aquifers, support irrigation of crops and water points for livestock
2.2.5	Build and rehabilitate small hydrological infrastructure, and support mechanical desilting of the cultivable basins (Tidjikja: 6 sills and 15 wells, 2 hills catchment ponds & 4 underground tanks; Meisah: 1 dyke, 1 well, 3 boreholes and 30 small-scale earth bunds, 1 hills catchment pond & 2 underground tanks; Dafort: 6 sills, 300 small-scale earth bunds, 2 hills catchment ponds & 4 underground tanks; Barbara: 300 small-scale earth bunds, 1 sill and 3 boreholes, 2 hills catchment ponds & 4 underground tanks)
2.2.6	Train members of the community-based water and land use management groups on basic maintenance operations of the small hydrological infrastructures, and solar-powered irrigation equipment
Stabilisation and restoration of eroded banks	
2.2.7	Conduct a mapping of erosion hotspots along the banks of selected target watersheds (Tidjikja, Dafort, Barbara) to identify priority intervention areas

2.2.8	Support the stabilisation and restoration of 7km of eroded banks in target watersheds (Tidjikja: 2 km of wadi banks of the Rachid minor bed; Dafort: 3 km of banks in the wadi minor bed; Barbara: 2 km of banks in the oasis along the Radhi palm grove)
Restoration of degraded agro-sylvo-pastoral landscapes	
2.2.9	Conduct a study to develop intervention protocols adapted to each target watershed for the restoration of degraded agro-sylvo-pastoral landscapes
2.2.10	Support the implementation of demonstrative interventions for land restoration and water conservation across degraded agro-sylvo-pastoral landscapes in target watersheds (the project will provide technical support and equipment to enhance resilience through adaptive practices including anti-erosion bunds or stone barriers, bunds or rocky cordons, half-moons, planting of tree species, direct broadcast sowing, assisted natural regeneration of local species such as Acacia senegal, restoration of 400 of degraded forests and 200 ha of acacia stands near villages and river beds). The plots selected will be used during APFSs for demonstrative interventions.
2.2.11	Conduct awareness-raising activities in coordination with local decision-makers and community-based water and land use management groups, with regards to climate vulnerabilities and the ways in which adaptive production practices can enhance resilience and strengthen livelihoods
2.2.12	Distribute 800 improved cookstoves to reduce the pressure on forests from fuelwood harvesting

Output 2.3: Innovative financial mechanisms are supported to catalyse investment in climate-resilient, income-generating activities in target watersheds

? Financing mechanisms

148. Two types of microfinance mechanisms have been experimented with success in Mauritania. These two mechanisms ? namely the Caisses d?Epargne et de Cr?dit Agricole[49][49] (CECA) and the Mutuelles d?Investissement et de Cr?dit Oasien[50][50] (MICO) ? are fit for different needs and socioeconomic settings.

Two types of microfinance mechanisms for different situations

1. Caisses d?Epargne et de Cr?dit Agricole (CECA)

Set up by FAO in areas of high agricultural production through several projects, CECAs use the warrantage system for agricultural producers and direct loans for other members of the credit union (livestock farmers, craftsmen, market gardeners, poultry farmers etc.).

a/ For farmers:

Warrantage is a short-term credit secured by agricultural production whose price increases during the guarantee period, allowing farmers to benefit from this increase. This credit is contracted with a local financial institution. At harvest time, farmers with a marketable surplus of production come to shop it in a warehouse of their cooperative or in an organisation with storage facilities. Farmers who have deposited their production obtain a two-part receipt, one of which remains with the farmer and the other is stapled to his stock. The financial institution that controls the stock is then called in. This shop is closed with two locks, one for the cooperative and one for the financial institution that takes possession of the farmers' receipts. The financing institution releases the credit to the cooperative for the current value of the stock, taking the precaution of leaving 10-20% of the weight, to cope with decreases in weight. The cooperative then distributes the amount among its members according to the stock of each. During the lean season, when grain prices rise, the stock is sold by the cooperative and the financial institution at a remunerative price. The CECA deducts the amount allocated to the cooperative, storage costs, interest rates etc. and gives the remainder to the cooperative which redistributes it to its members. The buyer of the stock collects the receipts from the financial institution and goes to the shop to pick up his goods[51][51].

b/ For non-farmers

For non-agricultural activities, the CECA provides credits according to the activity of each person and is reimbursed when the creditor's conditions are best (livestock farmers during the rainy season, market gardeners at harvest time, craftsmen after the sale of their materials etc.).

This system has revolutionised the living conditions of beneficiary populations, mainly in rainfed areas where crops depend exclusively on rainfall; however, CECAs are being extended to irrigated areas where traditional credit has significant difficulties meeting farmers' needs.

2. Mutuelles d?Investissement et de Cr?dit Oasien (MICO)

Credit in the oasis system financed by IFAD is slightly different from that financed by FAO in the rainfed zone. Cooperatives, associations, businesses, local management committees and individuals register to the MICO, which is responsible for granting credits. To access credit, one must be a member of MICO. The system is composed of a board of directors, a credit committee and a manager. To take out a loan, the beneficiary sends an application to the MICO manager, who presents the application to the chairman of the board of directors, who then transfers it to the credit committee. The latter studies the request, and if it is approved, the file is transmitted with a favourable opinion to the Association de Gestion Participative de l?Oasis[52][52] (AGPO) contracting manager, who comes to the beneficiary to execute the purchases. Credits are provided exclusively in kind with a small profit for the MICO to

149. Past experience has shown that microfinance structures have proved their worth by considerably improving the living conditions of the populations that have benefited from them. To this end, the proposed project will build on CECAs and MICOs. Three of the four target watersheds (namely Barbara, Meisah and Daffort) show favourable conditions for CECAs to develop the culture of traditional cereal crops (sorghum, millet, maize) by the project as well as other IGAs. These cereals constitute the basis of the populations' diet and investing in their production will considerably strengthen the resilience of local livelihoods. Unlike the other three, the Tidjikja watershed has a limited potential for cereal production, which does not create favourable conditions to establish a CECA. However, there are already three operational MICOs in the watershed, namely in Tidjikja, Lehweitat and Rachid, among which the proposed project will further support the ones in Tiidjikja and Rachid to finance resilience-building, income-generating activities. These MICOs already have the necessary infrastructure and equipment to carry out their activities; the proposed project will thus mostly provide seed funding and train beneficiaries.

150. To capitalise on past experience with CECAs and MICOs while retaining a flexible approach that will enable to tailor the microfinancing mechanisms to local conditions, a Caisse de R?silience approach will be followed. This consists in setting up Savings and Loan Associations that will provide seed funding for micro-business plans to be selected based on, *inter alia*, criteria on potential for resilience building (see below). These Savings and Loan Associations will host revolving funds that will create enabling conditions for sustainable access to funding beyond the project timeline.

151. Project support to microfinancing structures may be brought through UNMICO, which has the combined advantage of extensive experience with such interventions in Mauritania, including through multilateral, donor-funded project (e.g. IFAD and FAO), and of being recognised by the GoM as the entrusted institution to support and control CECAs and MICOs beyond projects? lifetimes. This is a sustainability guarantee for the project?s results, as established and supported institutions will not be left by themselves after the project implementation period but accompanied by UNMICO.

? Climate-resilient IGAs

152. Access to microfinance through the mechanisms to be set up will allow beneficiary communities to initiate agricultural investments initiated through APFSs, but also additional, diversified value chains. The rationale is that diversification of income sources will increase the resilience of rural livelihoods, as these will become less vulnerable to climate shocks that may affect some revenue streams. During the PPG phase, a number of value chains have been considered and three have been pre-selected based on their economic potential, adequacy with each target watershed and community demand. Other value chains may be supported by the project (cf. Annex O: balanites oil, sirup and soap; transformation of palm tree products such as date jam and palm breading; harvesting and marketing of medicinal NTFPs etc.), depending on community demand, as long the climate adaptation case for these value chains can be solidly established. The three pre-selected value chains are briefly described below.

153. The preparation of sorghum-based couscous is a value chain with a strong involvement of women, that has the potential to generate a substantial profit margin for local people. Sorghum-based couscous is a highly sought-after delicacy in Mauritania, with strong market demand. Finding an additional outlet for sorghum production will encourage farmers to increase their agricultural productivity. The production and marketing of sorghum-based couscous will be promoted in three of the four target watersheds[53][53] (namely Meisah, Barbara and Tektak?-Dafort) through CECA funding as well as specific production and business training. It should be noted that the Climate Risk Assessment conducted during the PPG phase has concluded that, among the most resistant sorghum varieties (e.g. short-cycle local varieties that resist well to water stress, such as *nienico, chouettra, hanini, sidi nieleba, mamouma, ndabiri* and longer-cycle local varieties that have a stronger resistance to flooding, usually cultivated along oued banks, such as *fella, taghalit, bougedra* and *gadiaba****[54]***[54]), those having a short cycle are likely to withstand better increasing temperatures and rainfall variability ? these varieties will thus be promoted through the proposed project (including through APFS sessions).

154. The preparation of dried meat (*tichtare* in the local Hassanya dialect) is a traditional activity of rural Mauritanians ? especially women. This meat comes mainly from dromedaries or cattle (Peulh and Maure zebus, the latter being more resistant to water stress) but not from small ruminants. The animal is slaughtered, cut up, then fillets of meat are dried in the sun and cut into smaller pieces. These can then be kept in jute bags for several months for consumption or sale. Tichtare is very popular with Mauritanians, including in urban areas where it is processed into powder, packed in plastic boxes and sold in modern grocery shops. While tichtare used to be ?resilience food? that rural communities prepared to preserve meat for consumption during lean periods, it is becoming a luxury product in the major urban centres where demand is steadily increasing. In order to satisfy this ever-increasing demand, rural populations need to organise themselves to sustainably increase production and enhance quality control processes.

155. Finally, the transformation of plastic products into household materials is also a promising value chain, although for the moment it can only be developed in the Tidjikja and Meisah watersheds, since the other target areas are not connected well enough to the major demand centers. Initiated by the GIZ in Tidjikja, this income-generating activity consists for women to collect cans, buckets and other solid rubber materials. This material is crushed into a fine powder, sorted to remove impurities, heated to a liquid state and then moulded into small objects (bowls, glasses, cups etc). In addition to the fact that it is a lucrative activity, since the costs are very low and the revenue is relatively high, it helps combat plastic pollution, a priority of the Mauritanian government. This activity is currently carried out exclusively by women, but can be extended to men with greater resources. Prior to supporting this value chain, a specific health risk assessment will be conducted to ensure that the transformation process does not create health hazards. In addition, opportunities to create other end-products will be investigated, as innovative examples (e.g. producing plastic bricks as construction material) have been identified in the country[55][55].

156. As required, other climate-resilient value chains may be supported by the project in coordination with the financial mechanisms set up under Output 3.1. These may include the transformation of palm tree products (date, palms etc.), the production of balanites oil, the production of jujube-based products and the transformation of water lily-based products[56][56]. Proposed activities are outlined below.

Table 10. Proposed activities under Output 2.3.

Activity	Description
2.3.1	Provide technical and managerial training to local CSOs and CBOs in target watersheds to support the creation of 4 Savings and Loan Associations using FAO?s Caisse de R?silience approach (in mutual supportiveness with APFS related interventions under Output 2.1 and Dimitra club activities under Output 1.1)
2.3.2	Conduct an analysis along priority agro-sylvo-pastoral value chains (including sorghum-based couscous, tichtare, transformation of plastic products, etc.) to identify key opportunities and challenges to establish inclusive, gender responsive, and climate resilient value chains across the target watersheds with a potential for upscaling nationally in synergy with relevant baseline initiatives
2.3.3	Provide training and coaching to at least 40 potential project holders (out of which at least 20 are women-led) in target watersheds to support them to develop human-centric and climate-proof micro-business plans along priority agro-sylvo-pastoral value chains
2.3.4	Select at least 20 micro-business plans out of a pool of 40 developed by project holders (out of which at least 10 are women-led) from target watersheds based on a transparent set of criteria mutually determined in consultation with the WDRSs established under Output 1.2 to enhance resilience and strengthen livelihoods in line with the adopted IWMPs (as per the established criteria, selected entrepreneurs will allocate 10% of their net annual income to special revolving funds over a period of 3 years)
2.3.5	Provide training and procure equipments and inputs required by the project holders whose microbusiness plans are selected, in cooperation with other funding sources such as UNMICO
2.3.6	Facilitate market-access and the procurment of inputs especially for women-led cooperatives, including through the establishment of bulk contracts with local suppliers for the provision of inputs (biopesticides and biological control agents, animal feed, veterinary products, seeds, biofertilisers and bio-stimulants, packaging etc.).
2.3.7	Establish 4 revolving funds managed by the local savings and loan associations (one in each target watershed) to collect and manage the allocations made by the project holders to micro-finance adaptive income generating practices aligned with resilience and livelihoods priorities in each watershed.

COMPONENT 3: LESSONS LEARNED ARE CAPTURED, MAINSTREAMED AND UPSCALED USING ADAPTED M&E AND KM APPROACHES

Outcome 3: Climate resilient and adaptive practices are mainstreamed into decision-making processes and lessons learned are widely disseminated

Output 3.1: Project results mainstreamed to enhance resilience and adaptive policies

157. To increase the sustainability and facilitate the upscaling of project results, activities to be conducted under Output 4.1 will aim to mainstream these results into relevant national policies and regulatory frameworks. These ? to be further identified during project implementation ? may include sectoral and cross-sectoral strategies, including on gender, integrated watershed management and microfinancing for resilient development.

158. After a scoping exercise is conducted, mainstreaming opportunities will be identified collectively with core ministries (esp. MEDD, MADR and ME) to maximise country ownership and ensure the coordination with the NAP process, steered by the MEDD. Crucially, climate-sensitive budgeting will be promoted to facilitate the identification, tracking, and, ultimately, promotion of climate-resilient investment by public institutions. Best international practices[57][57] will be followed in this respect. Proposed activities are outlined below.

Table 11. Proposed activities under Output 3.1.

Activity	Description
3.1.1	Conduct consultation workshops to decision makers from MEDD and relevant stakeholders at national and local levels (including members of the PSC) to identify gaps based on project-delivered climate vulnerability assessments and entry points for enhancing resilience and adaptive practices by improving the policy, regulatory and institutional frameworks

3.1.2	Develop and submit amendments to mainstream climate adaptation and resilience into relevant policies and regulatory frameworks for validation by policy makers. These include primarily the CDPs at communal level which will likely be updated during project implementation, as well as national/sectorial/local strategies and policies related to land and water tenure, pastoralism, agriculture, food security, social security, nutrition and climate change. This will be achieved in cooperation with the ongoing NAP process in Mauritania to mainstream and enable integrated adaptation strategies.
3.1.3	Provide training on climate-sensitive budgeting to key institutions to ensure long-term investments in adaptation planning and enable tracking of climate-related expenditures.

Output 3.2: Project lessons captured and knowledge managed and disseminated

159. Applying an innovative communications strategy, best practices and lessons learned from project implementation will be translated into knowledge products and communication outputs. Several national initiatives exist which may be able to support replication and sustainability of the project?s impact. At the inception stage of the implementation phase, a project communication strategy will be developed. This strategy will aim at capturing best practices generated throughout the project. The effort will focus upon target communities as well as making certain lessons learned are captured for upscale across a larger geographic region incorporating a wider group of private producers.

160. Stakeholders will be presented with a series of communication methodologies scaled to local producers, extension workers, government decision-makers and other key stakeholders. The aim will be to make certain lessons gleaned from project activities are fully-unscalable by a larger audience across larger geographic areas. Communication approaches will include development of awareness-building materials, generation of electronic and print media publications, and awareness-building workshops. In particular, knowledge products will include four model climate-proof integrated watershed management plans, eleven thematic case studies, including at least one that is gender-focused, documenting key activities conducted by the project lessons learned and recommendation. Topics to be covered by knowledge products will include, but not be limited to: i) lessons learned from the implementation of innovative financing mechanisms; ii) lessons learned from the operationalisation of watershed-level governance of natural resources (water, rangelands, forests); and iii) ecological restoration processes of rangelands, riverbanks and forests.

161. For this last theme, partnerships with national (e.g. Centre de Recherche pour la Valorisation de la Biodiversit? of the Ecole Normale Sup?rieure de Nouakchott ; Biology Department of the Universit? des Sciences, de Technologie et de M?decine) and, as relevant, international scientific institutions will be established in the first year of project implementation to ensure that a sound scientific monitoring of the restoration process can be undertaken. Indeed, although such restoration processes are increasingly being documented ? especially through ecosystem-based adaptation initiatives ?, there is a still a lack of scientific evidence (including cost assessments) to support the widespread implementation of such solutions in drylands. The scientific monitoring to be set up under the proposed project shall result in both publications in the grey literature and in peer-reviewed, scientific journals.

Table 12. Proposed activities under Output 3.2.

Activity	Description
3.2.1	Prepare and publish annual briefs and case studies, including at least one that is gender-focused on the project?s accomplishments, experiences and lessons learned (themes may include: lessons learned from the implementation of innovative financing mechanisms, APFSs, Community-based governance schemes of water and land use management at watershed level, and women led cooperatives in priority value chains). As relevant, the case studies may encompass examples from relevant initiatives other than the LDCF project in the target wilayas.
3.2.2	Organise information and knowledge exchange on APFS, including with the Central Africa Field School Network, African Forum For Agricultural Advisory Services, Global FFS Platform, etc.
3.2.3	Produce at least four grey literature publications and three scientific papers for publication in peer-reviewed, scientific journals (including a scientific protocol for the monitoring of ecological restoration processes (e.g. dune fixation, riverbank stabilisation, restoration of rangelands), the Hand-in-Hand Geospatial Platform for ecological monitoring, etc.)
3.2.4	From Year 2, organise annual fora for information-sharing among development and climate adaptation practitioners at the wilaya and national level. On these occasions, collect information on relevant projects and upload it (incl. GIS) on the Hand-in-Hand Geospatial Platform and the WOCAT[58][58] database (incl. actual intervention costs).
3.2.5	Organize two South-South knowledge-exchange visits (one in Mauritania and one in Sudan) for government, scientific and civil society partners to capitalise on experiences with the GEF/FAO project 10159 ?Resilience of Pastoral and Farming Communities to Climate Change in North Darfur?.

Output 3.3: Effective Monitoring, Evaluation and Learning (MEL) implemented

162. Project activity will be comprehensively monitored and evaluated to help guide adaptive management and promote the uptake of knowledge, good practices and successful approaches, including gender mainstreaming. This will be achieved in part through the project?s Monitoring, Evaluation and Learning (MEL) efforts.

163. The proposed project will ensure that decisions made, and interventions proposed for implementation, consider the potential impacts and outcomes for different groups within society, with particular focus on the roles played by men, women and youth. In line with the principles of integrated natural resource management, the proposed project will promote a participatory approach to monitoring, evaluation and learning, involving all relevant stakeholders, including local communities.

The focus will include project level monitoring, to feed into FAO?s global monitoring of its GEF and LDCF portfolio, and to contribute to GEF/LDCF?s global monitoring system.

Table 13. Proposed activities under Output 3.3.

Activity	Description
3.3.1	Conduct a GIS ground-truthing mission in the target watersheds to confirm and/or revise available land-cover layers, with a view to inform the MEL plan.
3.3.2	Co-develop and implement a MEL plan, identifying indicators, tools and the monitoring strategy for the project?s activities, including roles and responsibilities as well as a timeline and budget (including through the use of the Hand-in-Hand Geospatial Platform for project monitoring).
3.3.3	Conduct an independent mid-term review and translate the report in French.
3.3.4	Conduct an independent terminal evaluation and translate the report in French.

4) Alignment with GEF focal area

164. The proposed project adopts an integrated watershed approach to tackle climate change adaptation and vulnerability issues, with a focus on improved agricultural practices and the strengthening of selected nature-based value chains. It is fully aligned with the LDCF programming strategy , as described in the table below.

Table 14. Alignment of the project?s outputs with LDCF outputs.

LDCF objectives	LDCF outputs	Proposed LDCF project outputs contributing to LDCF output
1. Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	1.1.2: Livelihoods and sources of income of vulnerable populations diversified and strengthened	2.1, 2.3

	1.1.4: Vulnerable ecosystems andnatural resource assets strengthened in response to climate change impacts	2.2
	1.2.1: Innovation incubators and/or accelerators introduced	2.3
2. Mainstream climate change adaptation and resilience for systemic impact	2.1.1: Development/sector policies and plans integrate adaptation consideration	1.2, 1.3
	2.2.2: Adaptation and resilience relevant financing coordinated for synergistic programming including with the private sector	2.3, 3.1
3. Foster enabling conditions for effective and integrated climate change adaptation	3.1.1: Systems and frameworks established for the continuous monitoring, reporting and review of adaptation	3.3
	3.2.1 Capacities strengthened to identify, implement and/or monitor adaptation measures	1.1, 1.2, 1.3, 2.1, 2.2, 3.1, 3.2
	3.2.2: Increased awareness of climate change impacts, vulnerability and adaptation	1.1, 1.2, 1.3, 2.1

165. The proposed project also has strong linkages with GEF-7 priorities, in particular in terms of land degradation and climate change focal areas. The project interventions intend to generate Global Environment Benefits through improved landscape planning and management at the watershed level, promotion of adaptation technologies in nature-based value chains and enhanced knowledge generation on resilience.

5) Additional cost reasoning

166. There are a several efforts underway in Mauritania designed to address issues related to poverty, conflict and degradation. The project will build upon these efforts. However, under the existing scenario, none of these programs work cohesively to address the root causes by integrating resource use planning, practice innovation, and improved policy approaches to alleviate climate change risks and reduce related resource-based conflicts.

167. The LDCF investment will promote innovative approaches fundamentally aligned with LDCF?s programming and strategic operational policies. The project will set in place innovative tools

to manage climate risks, implement an ecosystem-based approach and strengthen the resilience of local communities. Project improvements will be integrated with policies and strategies to generate outsized-impacts. The project will support and build incentives to encourage private sector engagement based upon immediate national priorities. Technology transfer financed through LDCF additionality will be key to this effort. FAO has a strong track record in this regard, particularly with building capacity of small-scale pastoralists and agrarians to identify and adopt production approaches designed to enhance livelihoods while reducing exposure to climate change risks. As noted, this project will link with a parallel project proposed for the North Darfur, further reflecting an approach designed to enhance additionality.

168. LDCF funds at roughly USD 4.5 million are less than 23% of the entire budget estimated at over USD 19.4 million. LDCF investment will build upon and complement the baseline by providing the additional costs required to ensure that climate variability and climate change resilience is mainstreamed or systemic impact into development processes.

169. Component 1 of the LDCF project will be additional to baseline cofinancing from the National Agency Great Green Wall (ANGMV; USD 1.5m). The ANGMV intervenes to support the management of natural resources in the target wilayas; however, these interventions do not systematically include the mainstreaming of climate change. The LDCF investment will allow to ?climate-proof? the management of natural resources at the watershed level by raising awareness, enhancing the capacity of local stakeholders to plan for the climate-resilient management of natural resources and supporting the development of watershed-level, climate-resilient management plans. This will capacitate local communities to steer watershed development ? including when it is financed by the ANGMV ? towards greater climate resilience.

170. Component 2 of the LDCF project will be additional to baseline cofinancing from both ANGMV and FAO (through the upcoming GCF project Scaling-Up Resilience in Africa?s Great Green Wall, SURAGGWA; USD 10m). Both ANGMV and SURAGGWA interventions in the target wilayas will help achieve the LDCF project objective of enhancing the resilience of target communities. Both will contribute to restore productive landscapes and support nature-based value chains, thereby helping achieve expected Outcome 2 of the LDCF project. Combined efforts of ANGMV, GCF and LDCF will allow to upscale restoration results, leading to both enhanced EbA outcomes and additional potential for small businesses based on natural resources.

171. Component 3 of the LDCF project will be additional to baseline cofinancing from ANGMV (USD 2m): lessons learned from ANGMV interventions will be capitalised upon in a knowledge-sharing perspective. Scientific research to be conducted on the LDCF-funded EbA interventions will also benefit from additional evidence from the study of ANGMV sites, with a view to form a more complete sample of restoration outcomes (with different degrees of maturity). In addition, documenting lessons learned from LDCF investment will allow to inform ANGMV initiatives, thereby contributing to upscale the impact of LDCF investment. More generally, mainstreaming climate change into national policies and budgets (Output 3.1) is expected to leverage additional climate benefits after the project termination.

172. Finally, baseline cofinancing (USD 571,430) will be contributed towards project management from both ANGMV and FAO in the form of staff time, expertise, vehicles, office space to ensure the necessary technical and logistical backstopping.

6) Adaptation benefits (LDCF/SCCF)

173. Direct and immediate beneficiaries of this project will include several thousand households in dozens of villages. These households or approximately 100,000 direct beneficiaries ? male and female ? are currently some of the most vulnerable in Mauritania. As noted, they rely upon agriculture and livestock production for all aspects of their well-being. The project will upscale benefits to improve management of four of Mauritania?s wilayas and some of the nation?s most vulnerable populations.

174. Currently, these persons reside in an area where resources are becoming increasingly scarce and competition for these resources is becoming increasingly fierce. The vulnerable communities in the intervention areas face a series of challenges, including climate change that has considerably compounded natural resource degradation and has raised uncertainty and risk. The complex situation demands cross-cutting and innovative approaches.

175. With the additionality provided by LDCF investment, vulnerabilities will be alleviated through more structured resource management integrated at the watershed level and increased capacity to identify and invest in production methods that are better aligned to deliver climate change adaptation benefits. The investment has been and will continue to be defined by a participatory and integrated watershed development approach. This will develop climate change adaptation measures and coping strategies that are both innovative and capitalise on previous experiences and impacts. Communities will increase their awareness of climate change and strengthen their skills to effectively identify and adopt coping strategies. The results will include socio-economic developments associated with improved pasture land, better agricultural and livestock productivity, and diversified, resilient livelihoods.

176. The proposed project will have outsized impacts in that these target communities are representative of only a small percentage of the total population facing similar challenges. If this project is successfully implemented, lessons-learned and models established will be easily replicable across a much larger geographic area in order to benefit a much larger segment of at-risk or vulnerable society. This will be achieved and enhanced through the project?s consolidated efforts to make certain lesson-learned are systematically captured for upscale and capacities are strongly built within relevant government and community institutions to carry forward best practices.

7) Innovativeness, sustainability, potential for scaling up and capacity development. ?

177. Innovation: Although the project will build upon well-proven models such as agro-pastoral fields schools, it will also be on the vanguard in terms of identifying appropriate interventions best

suited to assist vulnerable communities to address climate change related issues within the livestock and farming sectors at a watershed level. The project will deploy innovative technologies and approaches in order to support climate resilient agro-silvo-pastoral production and livelihoods options (see lists above). In addition, innovations will be introduced in the land use planning, management and monitoring, not only when it comes to tools and technologies, but also with respect to scale (watershed versus plot), and approach (multi-actor and participatory).

178. Even though EbA is not in itself a new approach to resilience-building in Mauritania, it has never been implemented in the target watersheds. This provides an opportunity to deploy a suite of EbA interventions based on a holistic approach to watershed management. These will be complemented by, *inter alia*, climate-smart agriculture interventions that will further strengthen the climate adaptedness of local communities.

179. Likewise, the micro-finance mechanisms that will be implemented at not a new concept; however, the fact that the selection of business plans to be funded through these mechanisms will be based on criteria collectively agreed upon by local authorities and specifically taking their potential in terms of climate resilience into account is innovative.

180. Sustainability, upscaling & capacity development: the project will ensure sustainability through capacity building and mainstreaming of best practices within government and community institutions. The sustainability plan to be developed during project implementation will identify roles, responsibilities, timeframes and funding opportunities to carry forward project-emplaced results. The sustainability plan will also make certain that government and institutional policies and plans fully integrate project results. This will include budgeting and recommendations for regular awareness building and stakeholder engagement workshops and seminars to ensure government actors and decision-makers are consistently made aware of project challenges and advances. The sustainability and upscaling potential of project outcomes will be rooted in Output 3.1, which will support the identification of key lessons learned from the project and ensure that these are mainstreamed within relevant national policies and strategies. This will be strengthened by the training to be provided on climate-sensitive budgeting for selected sectoral ministries.

181. A key factor of sustainability will be the strong ownership of project activities by beneficiaries, especially at the local level. The genuinely participatory approach to project design that has been prevalent during the PPG phase will continue during project implementation. Most activities under Component 1 are participatory in nature, as the objective is to empower local communities and authorities for them to elaborate their own climate-resilient development and land-use planning at the watershed level. Rather than bringing outside expertise to push a pre-drafted agenda, the project will train and support local stakeholders to develop their own climate-sensitive planning. Likewise, the APFS curricula to be developed under Component 2 will be based on self-declared needs from the beneficiaries themselves.

182. Finally, the income-generating activities to be supported by the project will be based on climate-resilient business plans that will be selected based on, inter alia, their commercial viability. This will ensure that no business plans are funded that would not actually be self-sustaining after the project termination. In addition, the creation of revolving funds under Component 2 has been

specifically included in the project design to ensure that micro-financing mechanisms can be sustained after the project termination, once seed funding provided by the LDCF has been invested in a first generation of profitable IGAs.

8) Summary of changes in alignment with the project design with the original PIF

183. While the overall project strategy has not changed from the PIF, consultations and studies undertaken during the PPG phase have allowed to adjust some elements from the PIF:

? the project title has been amended to better reflect the project?s scope;

? the importance of the watershed approach has been reasserted across the project intervention strategy;

? the importance of EbA as a key investment to strengthen the resilience of local populations at the watershed level has been explicitly described;

? the original focus on climate-induced conflicts over natural resources has been reduced (even though the implementation of Dimitra clubs under Component 1 will facilitate conflict resolution), as the results of the SHARP+ survey as well as interviews with local authorities concurred that such conflicts are not a prevalent phenomenon in the target watersheds;

? the risks were reviewed and enhanced; this includes additional emphasis upon environmental risks such as climate change;

? the cofinancing plan has been revised to adapt to the actual development context at the time of project submission (reintegration of the CNOEZA within the MEDD, change in the fous of the GCF project, termination of former cofinancing projects);

? Output 1.3 has been introduced to convey the importance of capacity development in the mainstreaming of climate adaptation into watershed management planning;

? Outputs 2.1 has been reworded to better reflect the focus on APFSs, which will be main instrument for the dissemination of climate-smart agricultural practices;

? Output 2.2 has been split into two outputs, 2.2 and 2.3, that each focus on different but complementary interventions to strengthen the resilience of local communities, namely EbA interventions and support to climate-resilient IGAs.

? Outputs 3.1, 3.2 and 3.3 have been reworded to better reflect their respective scopes. In particular, the content of Output 3.1 has been specified;

? the target for Core Indicator 3 was reduced as no national plan is anticipated to be revised through project interventions: plans to be revised will be at the local level (CDPs and creation of IWMPs);

? with regards to the target for Core Indicators 1 and 4: at PPG stage, it was deemed clearer to distinguish between people who will directly benefit from training (i.e. 10,000

trainees through APFS + other trainees on the management of natural resources etc.) and who should be counted towards the target for Core Indicator 4, and people who be trained indirectly through APFSs (being exposed to best practices through open days, exchange visits, communication efforts etc.) and who should be counted towards the target for Core Indicator 1; and

? a number of other indicators have been revised, as described in the table below.

Table 12. Changes in project indicators from the PIF.

PIF Results Framework	Project Results Framework	Justification
Objective-level indicators		
Number of direct beneficiaries (50,000 male, 50,000 female)	i) Number of vulnerable agro-sylvo-pastoralists from rural communities in target watersheds showing an enhanced resilience and adopting adaptive practices Final target: 100,000 (50% women) vulnerable agro-sylvo-pastoralists from rural communities in target watersheds showing an enhanced resilience and adopting adaptive practices	The objective-level indicator has been further specified to better reflect the ambition of the project.
Outcome 1		

(i) Land use planning and management plans covering four tributary drainage basins formally adopted (ii) Hectares of degraded agricultural and grazing lands managed under a climate resilient land use management plan. (iii) At least twelve Municipal Councilors and technical staff trained and using VGGT	(ii) Number of multi-stakeholder Watershed Development & Resilience Committees (WDRCs) established and supported to mainstream climate adaptation and resilience practices for sustainable resource management at watershed level Final target: 4 WDRCs established and supported, with at least 40 % of women in meetings supported by the project (iii) Number of climate-proof Integrated Watershed Management Plans (IWMPs), collectively developed and/or revised to better integrate climate change adaptation and vulnerability considerations to enhance the resilience of vulnerable rural communities Final target: At least 4 Integrated Watershed Management Plans (IWMPs), collectively developed and/or revised, and 9 CDPs[59][59] reviewed, to better integrate climate change adaptation and vulnerability considerations to enhance resilience of vulnerable rural communities (iv) Number of local decision makers from municipalities, extension services and community leaders trained on innovative climate change adaptation practices and using VGGT Final target: 80 (50% women) local decision makers from municipalities[60][60], extension services and community leaders trained on innovative climate change adaptation practices and using VGGT in target watersheds -	Indicator (ii) has been introduced to reflect the institutional support to be brought by the project at the local level, and which will be a factor of ownership and sustainability. Indicator (iii) is a reworded version of original indicator (i) focused on the watershed level and less on hectarage (which will be rather covered by the first indicator of Outcome 2 to reflect actual on-the-ground interventions). The target for indicator (iv) has been revised to reflect the actual scope of the project.
Outcome 2		

(i) Number of livestock and agricultural producers engaging in APFS programming that report improved livelihoods, including levels of economic, environmental, and social well-being. (ii) Number of livestock and agricultural producers supported to adopt project identified climate resilient production methods. (iii) Hectares of agricultural lands (grassland, forest, and cultivated areas) evincing higher levels of resilience at the catchment level.	(v) Hectares of target landscapes at watershed level including agricultural and pastoral lands, dunes and forests restored and demonstrating an enhanced resilience to climate change Final target: 71,500 ha of target landscapes at watershed level including agricultural and pastoral lands, dunes and forests restored and demonstrating an enhance resilience to climate change including: 200 ha of dunes stabilised through biological and mechanical fixation to halt desertification; 64,500 ha of rangeland and forested areas; 7,000 ha of arable land; and 15 hydrological infrastructures (dykes, weirs, sills) rehabilitated for water harvesting (vi) Number of agro-sylvo-pastoralists trained in APFS cohorts that report improved livelihoods and household nutrition levels as a result of adopting resilient and adaptive practices Final target: 10,000 (50% women) agro-sylvo-pastoralists reporting improved livelihoods and household nutrition levels as a result of as a result of adopting resilient and adaptive practices (vii) Number of savings and loan associations in target watersheds established and/or supported through FAO?s Caisses de R?silience (CdR) approach Final target: At least 4 savings and loan associations in target watersheds established and/or supported through FAO?s CdR approach, and functioning as revolving funds with demonstrated funding of second generation of loans (viii) Number of micro-business plans developed in priority agro-sylvo-pastoral value chains to support resilience and livelihoods Final target: 40 micro-business plans developed in priority agro-sylvo-pastoral value chains to support resilience and livelihoods (ix) Number of project holders from rural communities in target watersheds supported through climate-proof income generating activities Final target: 20 project holders from rural communities in target watersheds supported through climate-proof income generating activities	Indicator (v) is a reworded version of original indicator (iii), that better captures the scope of the EbA interventions to be implemented. Indicator (vi) is a reworded version of original indicator (i). Indicators (vi), (vii) and (viii) unpack original indicator (ii) to better reflect the actual interventions that will be supported under Output 2.3.
Outcome 3		

(i) Number of national policies and plans integrating adaptation considerations and best practices resulting from project implementation; (ii) Number of Government extension officers and other service providers utilizing project developed practices outside the immediate project target area; (iii) Number of stakeholders actively engaged and utilizing project communication and visibility products	(x) Number of government entities allocating technical and financial resources to sustain resilient production practices in target watersheds post-project Final target: At least 3 government entities (Ministry of Environment and Sustainable Development, Ministry of Agriculture and Rural Development, Ministry of Livestock) allocating technical and financial resources to sustain resilient production practices in target watersheds post-project (xi) Number of knowledge products prepared and disseminated to share lessons learned on resilient and adaptive production practices (including model integrated watershed management plans) Final target: 15 knowledge-products prepared and disseminated to share lessons learned on resilient and adaptive production practices (xii) Hectares of target landscapes at watershed level monitored using a KM portal as part of the MEDD website to track results and showcase resilient and adaptive management practices Final target: 71,500 ha of target landscapes at watershed level monitored using a KM portal as part of the MEDD website to track results and showcase resilient and adaptive management practices	Indicators (x), (xi) and (xii) have been introduced instead of the original indicators to better reflect the scope of Outcome 3. In particular, indicator (x) will allow to track the upscaling of the watershed-based approach to resilience building.

[1] As of 2020. Source: World Bank

[2] Source: World Bank.

[3] Source: IFAD

[4] These climatic features (convective storms) are generally not well captured by climate models, as the processes for extreme precipitation often depend on the local environment. The latter, together with lack of long-term tropical observations over West Africa result in a high uncertainty of precipitation projections overtime.

[5] Yacoub E, Tayfur G. 2020. Spatial and temporal of variation of meteorological drought and precipitation trend analysis over whole Mauritania. Journal of African Earth Sciences, 163, 103761.

[6] Bichet A, Diedhiou A. 2018. West African Sahel has become wetter during the last 30 years, but dry spells are shorter and more frequent. Climate Research, 75(2), 155-162.

[7] Source: adapted from The International Disaster Database (Emdat).

[8] Namely Senegal, Mali, Niger, Burkina Faso, Nigeria, Chad, Sudan, Ethiopia, Erytrea and Djibouti.

[9] Cf. Alternative scenario section (Component 2) for additional information on CECAs and MICOs.

[10] And one federal district.

[11] J. Bonnal. 2012. *In* The Online Sourcebook on Decentralization and Local Development. Center for International Earth Science Information Network, Columbia University.

[12] Order 680 from 17 April 2011.

[13] GoM. 2012. Guide du Comit? de Concertation Communale.

[14] Groupe de Recherche et de realisations pour le Developpement Rural (GRDR). 2009. La concertation communale. Se concerter pour d?cider et agir durablement sur le territoire.

[15] GIZ. 2012. Gestion d?centralis?e des ressources naturelles en Mauritanie. Exp?riences et enseignements 2001-2011 du Programme de Gestion des Ressources Naturelles.

[16] SOFRECO. 2012. Appui ? l?Elaboration de la Strat?gie de D?veloppement du Secteur Rural. Rapport Final.

[17] Article 12

[18] J. Habas. 2014. Quality Support Facilities in the field of decentralization, Local Governance & Local Development. Fiche Pays: Mauritanie.

[19] Source: FAO. 2014. Evaluation des Ressources Foresti?res Mondiales 2015. Rapport national Mauritanie.

[20] Source: FAO. 2020. Evaluation des Ressources Foresti?res Mondiales 2020. Rapport national Mauritanie

[21] Namely Tingnightar, Oudey Amar, Oudey Dhlim, Ouranat, Ouad El Barka, El Ghaba, El Beyedh, Ercha El Mowj, N'Daghaw and Ouad Arzac.

[22] According to the population.

[23] Source : GoM. 2017. Plan National de D?veloppement de l?Elevage 2018 -2025.

[24] Source: FAOSTAT. 2020. Data: production ? live animals. Available here.

[25] Sultan B, Guan K, Kouressy M et al. 2014. Robust features of future climate change impacts on sorghum yields in West Africa. Environmental Research Letters, 9(10), 104006.

[26] Some studies suggest that increasing CO_2 concentration (which acts as fertiliser) can compensate to some extent the adverse effects of increasing temperatures and rainfall variability. Due to the lack of modelling studies on CO_2 fertilisation in sorghum however, the magnitude of this potential effect remains uncertain.

[27] Rhon? B, Defrance D, Berthouly-Salazar C et al. 2020. Pearl millet genomic vulnerability to climate change in West Africa highlights the need for regional collaboration. Nature communications, 11(1), 1-9.

[28] Ullah A, Ahmad I, Ahmad A et al. 2019. Assessing climate change impacts on pearl millet under arid and semi-arid environments using CSM-CERES-Millet model. Environmental Science and Pollution Research, 26(7), 6745-6757.

[29] Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists

[30] 269 households were surveyed across the four target watersheds.

[31] A description of these mechanisms is provided in the Alternative Scenario section.

[32] Burkina Faso, Chad, Djibouti, Mali, Mauritania, Niger, Nigeria, Senegal

[33] FAO. 2012. Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security: ?The guidelines are the first comprehensive, global instrument on tenure and its administration to be prepared through intergovernmental negotiations. The guidelines set out principles and internationally accepted standards of responsible practices for the use and control of land, fisheries and forests. They provide guidance for improving the policy, legal and organizational frameworks that regulate tenure rights; for enhancing the transparency and administration of tenure systems; and for strengthening the capacities and operations of public bodies, private sector enterprises, civil society organizations and people concerned with tenure and its governance. The guidelines place the governance of tenure within the context of national food security, and are intended to contribute to the progressive realization of the right to adequate food, poverty eradication, environmental protection and sustainable social and economic development.?

[34] Additional information can be found here.

[35] FAO. 2013. Dimitra Newsletter 24. Accessible here.

[36] FAO. 2013. Dimitra Newsletter 25. Accessible here.

[37] In particular, the WOCAT database of best resilience practices will be useful. Accessible here in French.

[38] Sanz M.J. et al. 2017. Sustainable Land Management contribution to successful land-based climate change adaptation and mitigation. A Report of the Science-Policy Interface. UNCCD, cf. in particular Chapter 3.

[39] APFSs together with the community-based water and land management groups will be mutually supportive to each other; however, they will not serve the same purposes. While APFSs are learning groups guided by facilitators and dedicated to the dissemination of best agro-sylvo-pastoral practices with a focus on learning-by-doing, land and water management groups will be tasked with decision-making and implementation with respect to community resources. The decisions taken by these groups will likely entail the implementation of some of the best practices taught through APFSs and some APFS trainees will likely be part of the land and water management groups ? hence the complementarity and linkages between the two.

[40] Agronomes et V?t?rinaires Sans Fronti?res (AVSF). 2019. Les champs-e?coles d?AVSF au Nord Togo : une de?marche d?accompagnement pour la co-construction d?innovations paysannes et le conseil agricole.

[41] Waddington H., White H. 2014. Farmer Field Schools: From Agricultural Extension to Adult Extension, 3ie Systematic Review Summary 1. London: International Initiative for Impact Evaluation.

[42] Phillips D., Waddington H., White H. 2014. Better Targeting of Farmers as a Channel for Poverty Reduction: A Systematic Review of Farmer Field Schools Targeting. in *Development Studies Research* 1 (1): 113?136

[43] Bakker T., Blundo Canto G., Dugue? P., de Tourdonnet S. 2020. To what extent is the diversity of farmer field Schools reflected in their assessment? A literature review. In *The Journal of Agricultural Education and Extension*

[44] This 1,200 ha basin is exploited by over than 3,000 farmers coming from about ten peripheral communes during the rainy season.

[45] The EbA South website offers useful knowledge resources. Lessons learned from dune fixation initiatives include the ones collated in: Mills A J, B?gat P et al. 2020. Ecosystem?based adaptation to climate change: Lessons learned from a pioneering project spanning Mauritania, Nepal, the Seychelles, and China. People, Plants and Planet (available here) and in: Soul? A, Vadel Salihi MM, Abidine MY, Lafdal MY, B?gat P and Mills A. 2019. Evaluation of the restoration process of a plantation: case of Benichab (Mauritania). International Journal of Advanced Research.

[46] Source: Mauritania General Census, 2013 (latest data available).

[47] Assaba: 56% ; Guidimakha : 83%; Hodh el Gharbi: 52%; Tagant: 59%. In Assaba and Hodh el Gharbi, the second most popular source of energy is charcoal (21% and 31% of total energy sources, respectively), which is also not produced sustainably. Source: Mauritania General Census, 2013 (latest data available).

[48] Species that can provide branches for mechanical dune fixation include *Euphorbia balsamifera*, *Balanites aegyptiaca*, *Acacia raddiana*, *Leptadenia pyrotechnica* as well as date palm (leaves).

[49] Agricultural Saving and Credit Unions

[50] Oasis Investment and Credit Mutuals

[51] By intervening in two stages, warrantage provides the farmer with money at harvest time (price of his surplus production at the market price), and during the lean season (after the sale of the stock at a high price). Through these actions, the farmer avoids indebtedness to the trader and is able to balance his accounts, and then to make savings. Finally, the money recovered after the sale of the surplus production by the farmer can be reinvested in income-generating activities.

[52] Oasis Participatory Management Association

[53] Potential for this value chain in the Tidjikja watershed was deemed insufficient during PPG assessments.

[54] Source: Sow M, Le Coq Y. 2011. ?Enjeux de la pr?servation des ? semences paysannes ? de sorgho en Mauritanie? *in* Les semences : intrant strat?gique pour les agriculteurs. Grain de Sel. 52-53. Inter-R?seaux D?veloppement Rural

[55] See Agence Ecofin. 2020. ? Ces jeunes mauritaniens transforment les d?chets plastiques en mat?riau de construction ?. Accessible here.

[56] The seeds and bulbs of water lilies are traditionally consumed as a delicacy and as medicine against diabetes.

[57] See for example OECD. OECD DAC Rio Markers for Climate Handbook. Accessible here.

[58] The World Overview of Conservation Approaches and Technologies (WOCAT) is a global network that was established in 1992. The vision of WOCAT is to improve land resources and ecosystems (including soils, water, flora, and fauna) and people?s livelihoods by sharing, enhancing, and using knowledge on sustainable land management (SLM). WOCAT was recognised as a ?Primary recommended database? by UNCCD in 2014; in particular, it maintains a useful database that documents real-life, costed SLM interventions.

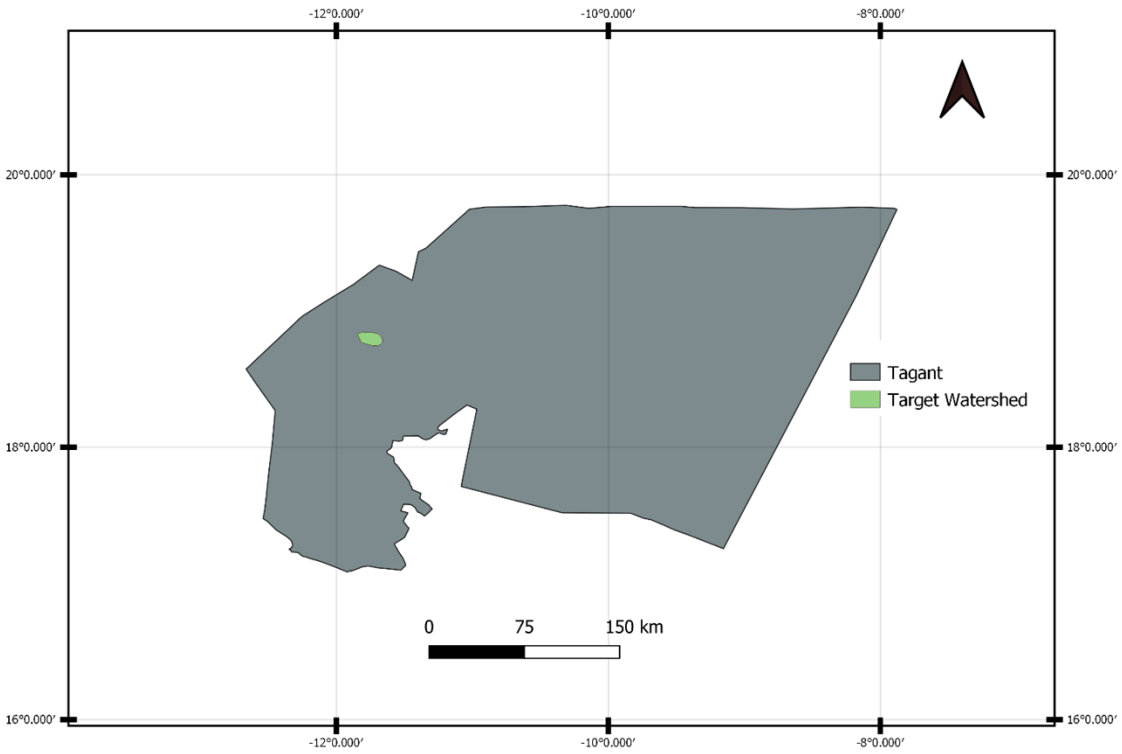
[59] Namely for the communes of Tidjikja and Rachid (Tidjikja watershed), Radhi and Tamchekett (Barbara watershed), Kiffa and Nouamleyne (Meisah watershed), Tektak?, Aweinatt and Dafort (Dafort watershed).

[60] 20 decision-makers from each target watershed

1b. Project Map and Coordinates

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

Figure 9. Wilaya of Tagant and its target watershed.



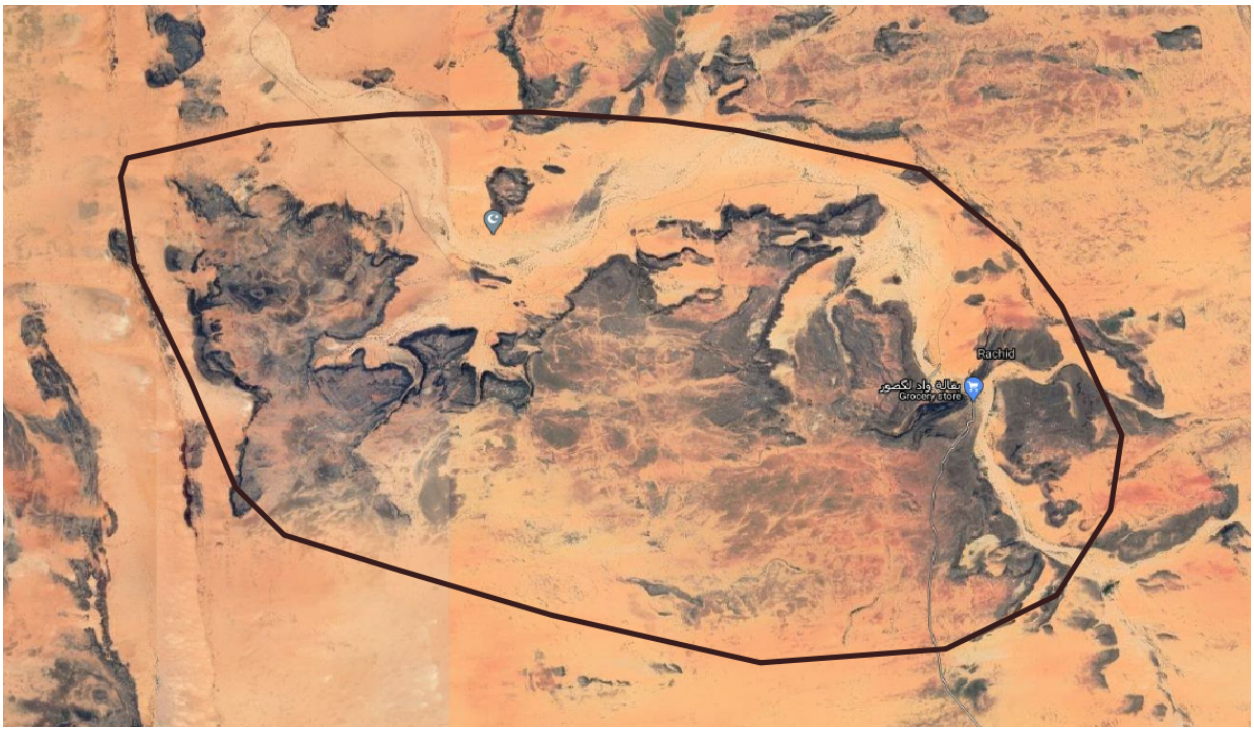
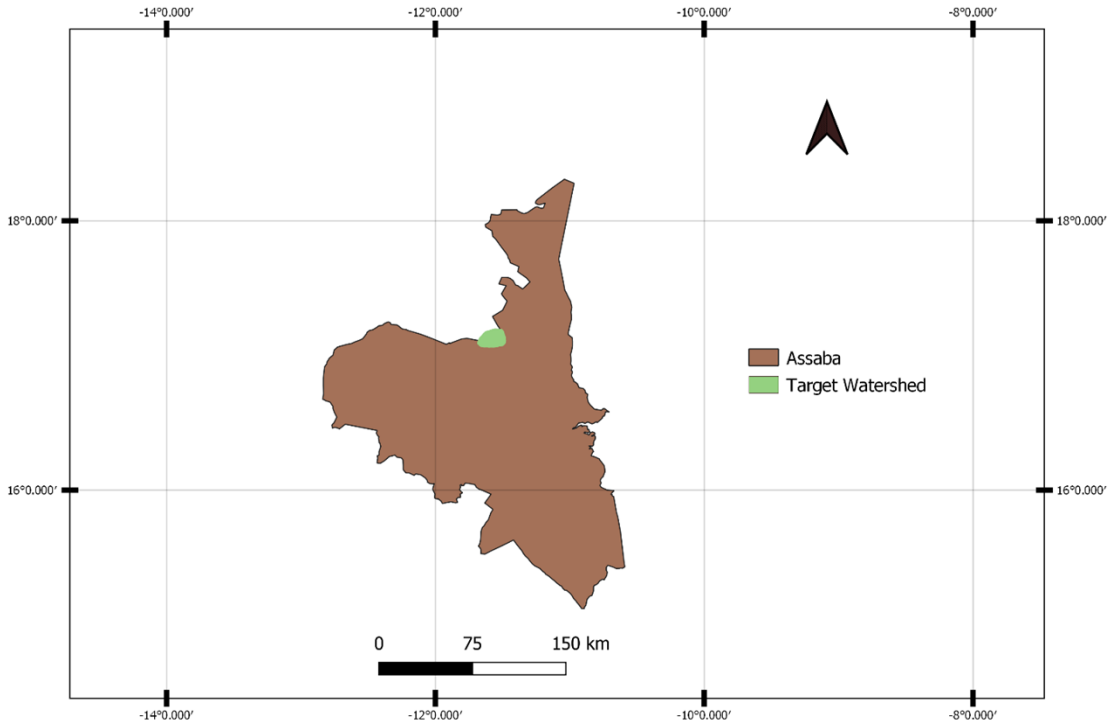


Figure 10. Wilaya of Assaba and its target watershed.


-14°0.000′
-12°0.000′
-10°0.000′
-8°0.000′
18°0.000′
16°0.000′
Assaba
Target Watershed
0
75
150 km

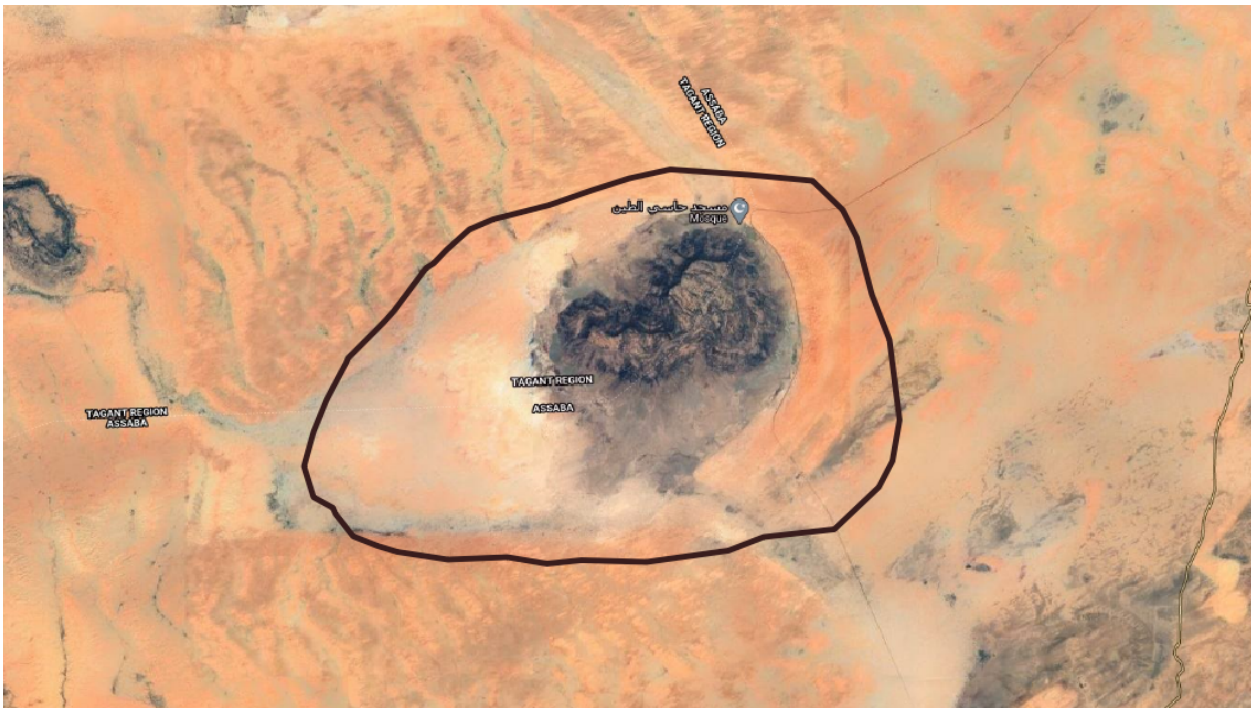
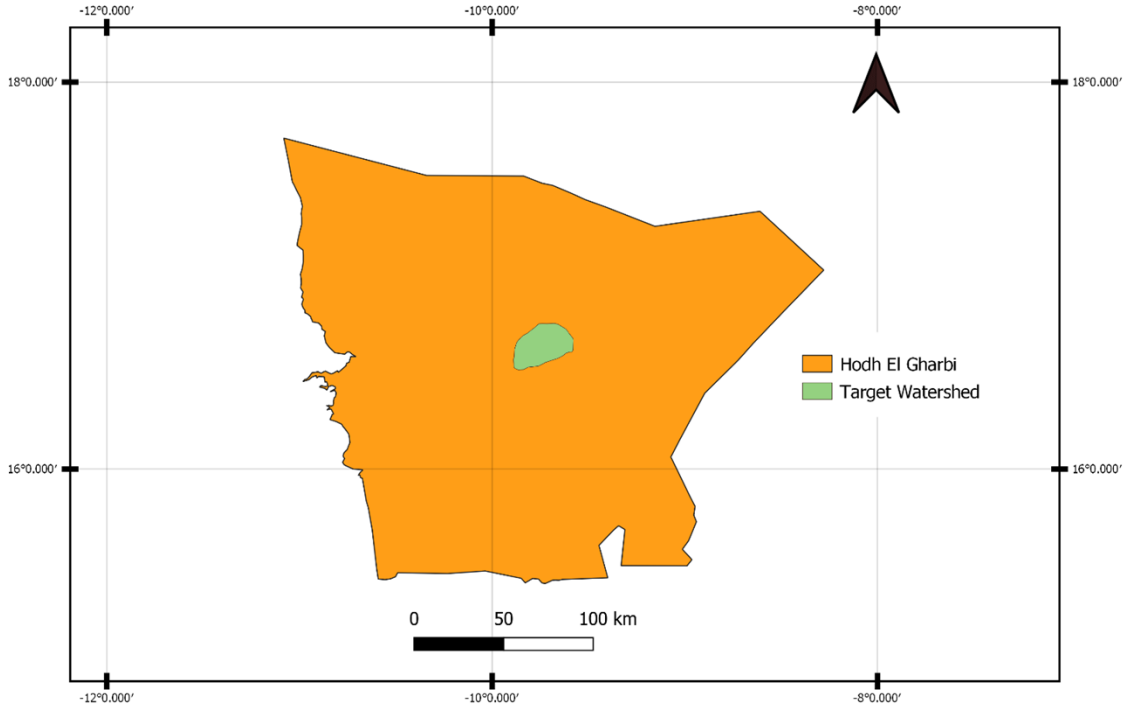

ASSABA
TAGANT REGION
مسجد حاسي الطين
Mosque
TAGANT REGION
ASSABA
TAGANT REGION
ASSABA

Figure 11. Wilaya of Hodh El Gharbi and its target watershed.



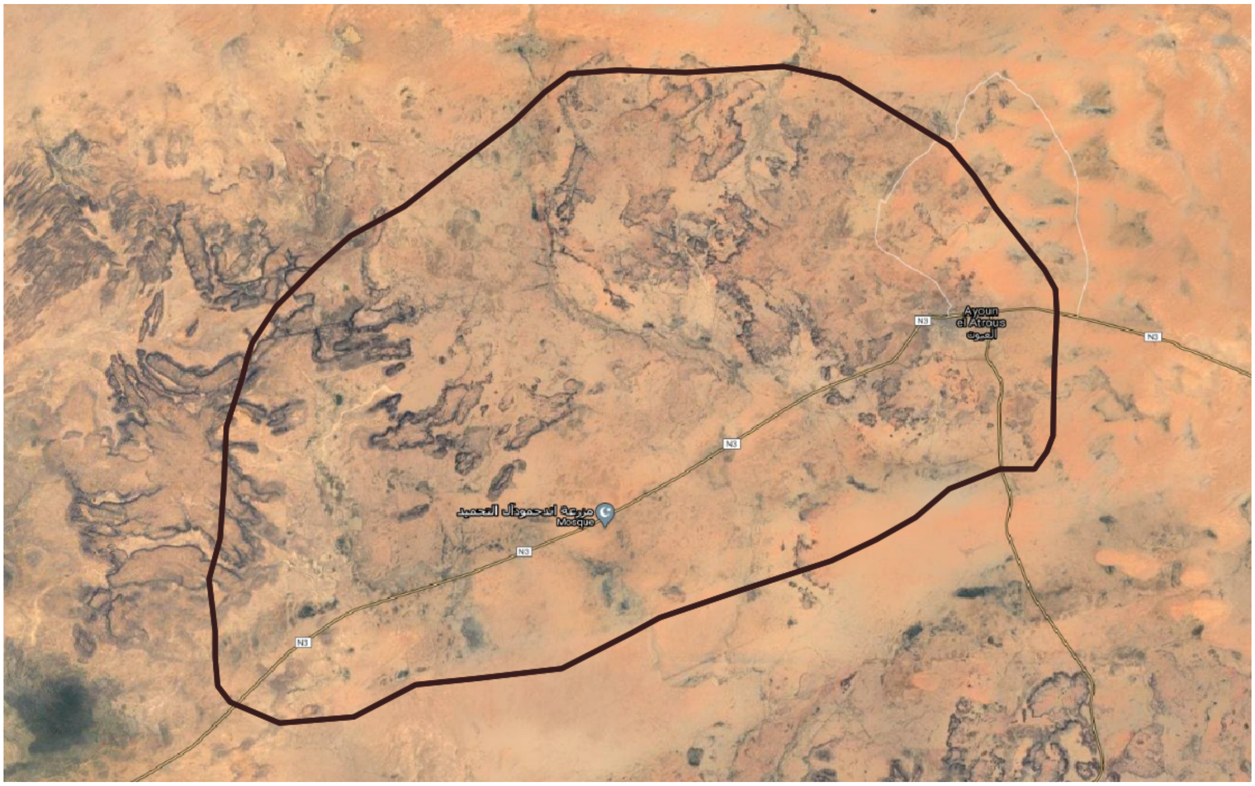
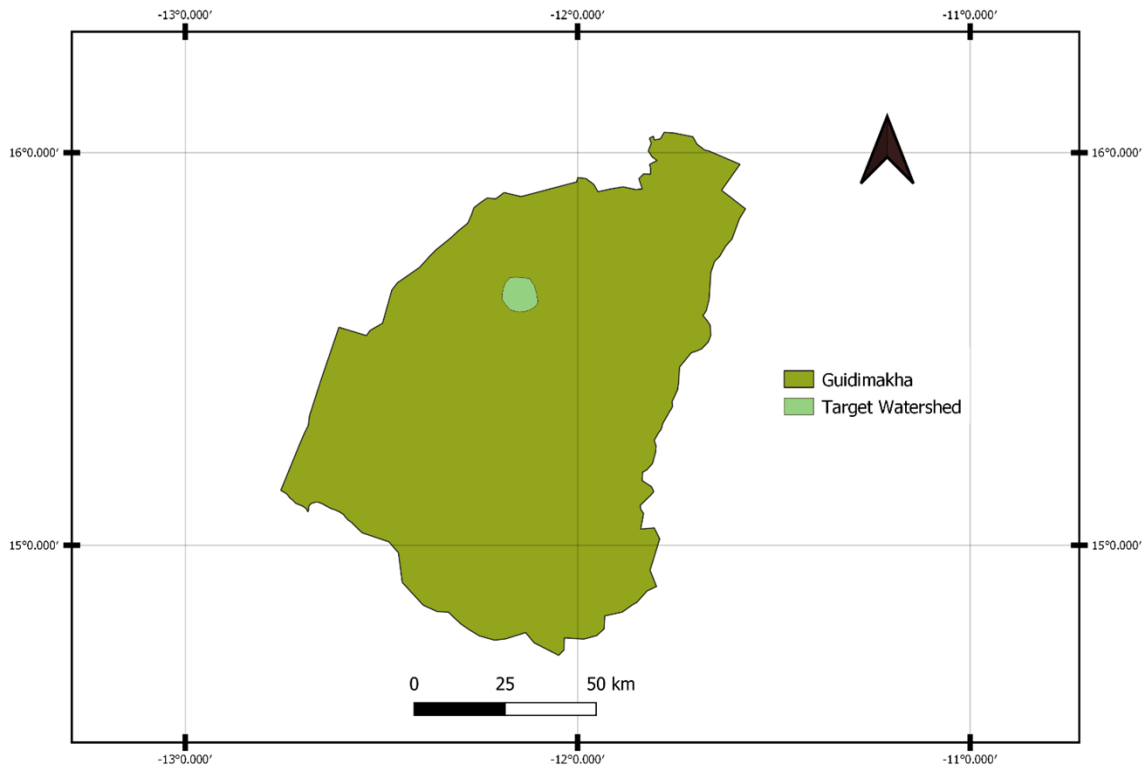
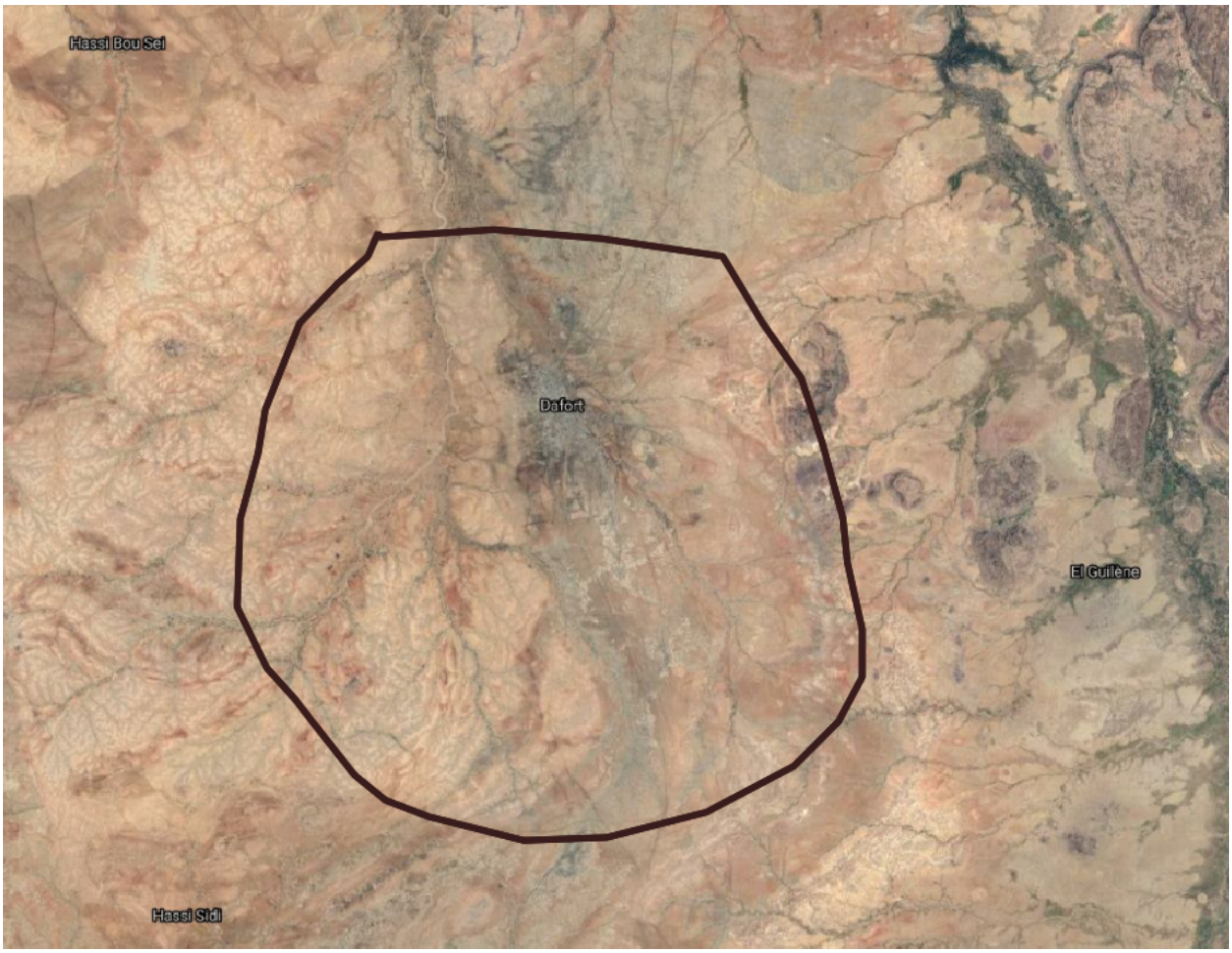

Ayoun
el Atrous
العيون
N3
N3
مزرعة اندجمودال التحميد
Mosque
N3
N3
N3

Figure 12. Wilaya of Guidimakha and its target watershed




Hassi Bou Sei
Dafort
El Guiène
Hassi Sidi

1c. Child Project?

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

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 Yes

If none of the above, please explain why:

Stakeholder engagement during the PPG phase

1. During the PPG phase, the project engaged the stakeholders indicated in the stakeholder table in different ways. Stakeholder consultations were carried out through field surveys, workshops, individual interviews and focus group discussions to capture their inputs to inform project design and ensure their continuous involvement during the implementation phase.

2. A coordination workshop was held on March 23rd, 2021 in Nouakchott. Despite Covid-19-related restrictions, remote participants were able to connect virutally and provide their input.

3. Household surveys were conducted in each of the target watersheds, between April-May 2021, using the Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP+) tool. A total of 269 households were interviewed, 68% of which were female respondents.

4. The SHARP+ assessment covered a comprehensive overview of the livelihoods of rural-based households at watershed level in the 4 targeted wilayas in Mauritania (Assaba, Guidimakha, Hodh El Gharbi and Tagant). It examined the prevailing socio-economic characteristics, status, and conditions of the resources farmers and pastoralists have access to, climate hazards and impacts, agronomic practices in place, among others.

5. A validation workshop was held on 23 November 2021. The suggestions and concerns echoed by various stakeholders were taken into consideration and reflected throughout the interventions featured in the advanced Project Document presented for validation by national and local stakeholders.

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
National and local government					
Ministry of Environment and Sustainable Development (MEDD)	Key	Responsible for the development, implementation, and monitoring and evaluation of policies, strategies, initiatives and sustainable management of natural resources. The MEDD helps to oversee issues related to climate change, desertification and biodiversity conservation. MEDD is responsible for monitoring and implementation of the UNFCCC, the UNCCD and the CBD in the country.	Regular meetings during PPG phase, including PPG coordination and validation workshops respectively on March 23rd and November 23rd, 2021	Project Executing Entity. Will lead cross sectoral coordination among all relevant Government entities at national and Wilaya levels. Will be involved in all aspects of project implementation and support, including through field services	NA
Ministry of Agriculture		Has the general mission to design, execute, monitor and evaluate policies of the Government for the development of Agriculture.	Meetings with key national and local governement representatives during field missions conducted in Mauritania?s	Support to project interventions related to agriculture and land use planning processes foreseen by the project	NA

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
Ministry of Livestock	Key	In charge of support to livestock producers, promotion of pastoralism and support for animal health. It also upholds the Pastoral Code and oversees all activities related to livestock raising, management, pasture development, sales, slaughtering, and sales, including meat inspection and sanitary conditions.	Southern region between April and May 2021, as well as during coordination and validation workshops respectively on March 23rd and November 23rd, 2021	Support to project interventions related to the pastoral code and the land use planning processes foreseen by the project	NA
Ministry of Water Resources and Sanitation	Key	Its principal role is to ensure potable water supply across the landscapes covered by the project. It oversees all investments related to the mobilisation of potable water, irrigation water, and sanitation.		Technical advice and logistical support for water related interventions	NA

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
Pan-African Agency of the Great Green Wall (ANGMV)	Primary	Responsible to take effective and urgent measures in the drylands of Africa, halt/reverse the land degradation, support conservation of biological diversity, build ecosystem resilience, contribute to human well-being and support poverty eradication.		Will be engaged to support relevant SLM and improve productive practices	NA
Ministry of the Interior and Decentralisation (MID)	Primary	Responsible for territorial administration and municipalities.		The Walis and the Hakems will provide support to the creation or the revitalization of community based governance structures. The municipalities will contribute to the dissemination of the project?s results while strenghtneing ownership.	NA

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
Ministry of Hydraulics and Sanitation (MHA)	Primary	Manages water policy and water resources. The National Water Resources Center (CNRE) is responsible for the knowledge and monitoring of water resources. The Department of Hydrology and Dams is in charge of drinking water.		Cooperation to implement projectinterventions related to water supply and related infrastructure development at watershed level	NA
Ministry of Social Affairs, Children and Family (MASEF)	Primary	Ensures inclusion of gender into sectorial policies and works directly with communities		Cooperation to facilitate gender mainstreaming in line with the GAP and the upscaling of gender inclusive practices across the target watersheds	NA
Ministry of Habitat, Urbanism and Land Use Planning (MHUAT)	Primary	Responsible for issues related to land tenure.		Will support the project?s components related to land use planning and land tenure	NA

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
Tadamoun	Primary	Works to address the impacts of poverty through the implementation of the Strategic Framework for the Fight against Poverty.		Will cooperate with the project through the local committees and co-financing, including by providing advice on consultations with Haratins and local communities, as regards the development of income generating opportunities.	NA
National Agency for the Development of Renewable Energies (ANADER)	Primary	Supervises major projects in the field of renewable energy. This includes access to functional energy systems in rural areas.		Will provide expertise and lessons learned for the development of renewable and improved energy sources to alleviate pressure on natural resources.	NA
State, Locality and Community Level government bodies					
Willaya of Guidimakha Willaya of Assaba Willaye of Hodh El Gharbi Wilaya of Tagant	Primary	Responsible for local level policy and implementation.	Meetings with key State, Locality and Community Level government bodies representatives during field missions conducted in Mauritania?s Southern region between April and May 2021	Each of these local government bodies will provide implementation support, including engaging with both technical and policy innovations.	NA

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
CSO?s and Academia					
National Center for Agronomic Research and Agricultural Development (CNRADA)	Primary	Conducts scienctific and technological reserach and provides agricultural production expertise.	Meetings with key CSO?s and Academia representatives during field missions conducted in Mauritania?s Southern region between April and May 2021	Will strengthen project outputs by engaging in various trainings and providing expertise.	NA
National Group of Pastoral Associations (GNAP)	Primary	Engage with local producers		Will strengthen producers? adaptive capacities and stakeholder engagement.	NA
Federation of Farmers and Livestock producers of Mauritania (FAEM)	Primary	Engage with local producers		Will strengthen producers? adaptive capacities and stakeholder engagement.	NA
Women cooperatives	Primary	Enable local women to build productive capacities and improve their income		Will strengthen producers? adaptive capacities and stakeholder engagement.	NA
Donors and Development Agencies					

Stakeholder	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
FAO	Key	FAO helps by supporting policies and political commitments that promote food security and good nutrition and by making sure that up-to-date information about hunger and malnutrition challenges and solutions is available and accessible.	GEF Implementing Agency	GEF Implementing Agency. Will support implementation and technical back-stopping, will also ensure that innovations reflect best international principles and practices and are upscaled at regional and global levels	NA
Private Sector					
Livestock producers and agriculturalists	Primary	Micro private enterprises responsible for agriculture and livestock production.	Meetings with key Private Sector representatives during field missions conducted in Mauritania?s Southern region between April and May 2021	As direct beneficiaries of project activities, they will be involved in all project interventions	NA
Commercial Enterprises	Primary	Small and medium level enterprises responsible for selling and provisioning materials required to support private sector agriculture and livestock enterprises		Will be engaged throughout the project with their inputs secured to help make certain project activities are fundamentally supportive of long-term, stable economic development.	NA

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

1. During the implementation phase, the project will be organizing several consultations with a wide array of stakeholders across the 4 target Wilayas, including through the use of focus groups, participatory planning meetings, as well as women and youth empowerment workshops. The engagement methods that will be used will be adapted to the local context specific to each of the stakeholder groups identified, by using a variety of tools such as interviews with resource persons and key informants; surveys and questionnaires; community meetings and focus groups with specific groups in addition to other customary and traditional mechanisms for consultation and decision making.

2. Traditional knowledge will be capitalised upon through the APFS curricula, which will incorporate traditional agro-sylvo-pastoral practices that can help achieve climate adaptation objectives. In addition, restoration protocols will also build on traditional knowledge, especially on the use of local species best fit for different contexts. The project partners in charge of the development of these protocols (academic institutions) will collate the latest scientific evidence and traditional knowledge to produce these protocols; this will not only ensure that the protocols incorporate the best available evidence and practices, but it will also enhance social acceptance of the project interventions.

3. In order to establish inclusive engagement channels with a broad range of stakeholders, the project will build on the existing mediums of communication such as newspapers, posters, radio and television; visual display through brochures, leaflets, posters, non-technical summary documents and reports. The project will also explore digital engagement channels through the use of ICTs to secure feedback and interact with stakeholders outside of the formal consultation circles.

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; Yes

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

General gender context

1. According to the World Bank, approximately 49.7% of the Mauritanian population of 4.6 million people are women (as of 2020). The General Census provides a number of gender-disaggregated statistics that give an overview of gender inequalities in Mauritania. In terms of literacy for example, 41.0% of women are iliterate against 31.3% for men. Likewise, the activity rate of men (69.6%) is much higher than that of women (20.5%).

2. Along with the predominance of youth and a strong sedentarisation dynamic, gender disparities and inequalities are one of the main characteristics of the Mauritanian population. Women and girls represent a high proportion of the population affected by multidimensional poverty[1]. Poverty affects female-headed households more than male-headed households (poverty incidences of 46.3% and 40.7%, respectively), but with comparable shares of extreme poverty. The incidence of poverty is also higher in rural (73%) than in urban areas (9.5%).

3. The main sociocultural, institutional, and political obstacles faced by women in Mauritania include:

? At the socio-cultural level: i) poor access to information on gender equality, social prejudices, illiteracy, ignorance of the rights conferred by the law; and ii) submission to strong social traditions and cultural pressure, especially in rural areas;

? At the institutional level: i) insufficient gender mainstreaming in sectoral policies, strategies and programmes; and ii) insufficient qualified human resources, coordination and dialogue on gender issues at the national level; and

? At the political level: i) limited promotion of gender equality; ii) existence of structural constraints such as the non-respect of quotas in elective positions; and iii) strong resistance from political parties to the nomination of women.

4. Despite their strong presence in the informal economy, women have little access to the factors of production (credit, land, capacity building, etc.). Women hold only 27% of the labour income, making it difficult to reduce gender inequality by economic uplifting. The gender distribution of the employed population shows a very strong disparity between men (70.59%) and women (22.41%).

National responses to gender inequality in Mauritania

? Normative framework

5. Various commitments and instruments guide Mauritania's determination to fight against gender inequalities. The last decades have been marked by the adoption of numerous texts on gender equality and the empowerment of women, including: i) the Convention on the Elimination of All Forms of Discrimination against Women (1979); ii) the Dakar Platform for Action (1994); iii) the Platform for Action of the Fourth United Nations World Conference on Women (1995); iv) the UN Security Council Resolution on Women, Peace and Security 1325 (2000); v) the Convention on the Rights of Women (1953, ratified by Mauritania in 1976); and vi) the International Labour Organisation Convention No. 3 on Maternity Protection (1919, ratified in 1963). In addition, Mauritania ratified (2005) the International Covenant on Civil and Political Rights (1966), which states (Article 3) that "the States Parties to the present Covenant undertake to ensure the equal right of men and women to the enjoyment of all civil and political rights political rights set forth in the present Covenant.?

6. In line with these commitments, Mauritania has taken a number of legislative dispositions to combat discrimination against women, in particular with the Constitution of 20 July 1991, amended in 2012, which guarantees the same rights to citizens of both sexes without discrimination in its 1st article: "the Republic ensures equality before the law to all citizens without distinction origin, race, sex or social condition". At the political level, the Constitution allows women to be electors (Art.3); it guarantees the right to property and to inheritance for all (Art. 15.1 and 15.2) and prohibits any moral or physical violence (Art. 13.4).

7. Furthermore, the GoM has undertaken to combat discrimination against women and girls by adopting the National Strategy for Gender Mainstreaming (Strat?gie Nationale d?Institutionnalisation du Genre, SNIG) in March 2015. The SNIG, to which the Ministry of Social Affairs, Children and Family (Minist?re des Affaires Sociales, de l?Enfance et de la Famille, MASEF) is the main custodian, is based on the three bodies: i) the Inter-ministerial Committee for Gender Institutionalisation chaired

by the Prime Minister; ii) the Gender Monitoring Group chaired by an advisor to the Prime Minister; and iii) gender sectoral cells formed at the level of each relevant ministerial department.

? Achievements

8. At the national level, efforts to combat gender inequality have materialised through a number of plans aiming to mainstream gender considerations. This includes the National Strategy for the Advancement of Women (1992); the National Policy for the Development of Nutrition (2006), the Systemic Approach for Better Results in Education (2016) and the National Action Plan for Rural Women (2008), among others.

9. The Ministry of Livestock has developed a sectoral gender strategy for livestock and pastoralism and a roadmap for gender mainstreaming 2019-2021. Several other mechanisms have been created, generally under the responsibility of MASEF: i) a National Committee for the fight against violence (2008); ii) regional and departmental committees to combat gender-based violence; iii) the establishment of the multisectoral commission against child marriage, etc.

10. In terms of concrete results, some improvements have been witnessed. With regard to the economic empowerment of women, a clear enhancement is perceptible. For example, women now represent almost 35% of employees, compared to 25% in 1993.[2] This is a result of the strengthening of access to means of production and microfinance for women, increase scholarship quotas for girls[3], the development of vocational training, particularly in disadvantaged areas, and the opening of new branches of the Centre de Formation pour la Promotion F?minine. The school enrolment rate of girls is now similar to that of boys[4], reflecting the government's efforts to improve equal access to education.

11. At the political level, the adoption of the 2006 organic law establishing a 20% quota for women on all electoral lists was seen as a milestone. The new organic law n? 2012-034 of 11 April 2012 on the promotion of women's access to electoral mandates and elective functions further emphasised the need to increase women quotas for elective provisions. In consequence, Mauritanian women have seen their representation in parliament increase from 3% to 20% between 2000 and 2018.

12. At the socio-cultural level, the GoM instituted the commemoration of the International Day for the Elimination of Violence against Women and launched national campaigns to combat violence against women. The GoM also initiates actions to fight against early marriage and penalised the perpetrators of

genital mutilation. Encouraging results, although still not sufficient, have been recorded. For example, the teenage fertility rate fell from 82 to 70 births per 1,000 women aged 15-19 between 2010 and 2018.[5]

? Remaining challenges

13. Despite the progress outlined above, the empowerment of women in Mauritania still faces considerable obstacles, including: i) dual systems of traditional and modern (customary and state) norms; ii) the non-gratuity of legal proceedings, which often leads the poorest women to renounce any legal proceedings; and iii) the lack of financial and material support.

14. In addition, and despite the declared will to improve the mainstreaming of gender aspects in public policies, some gaps in the legislation still hamper Mauritania?s capacity to close the gender gap in many domains. Furthermore, the limited institutional capacity to implement the numerous gender policies that have officially been endorsed by the GoM, as well as the lack of awareness on existing rights and legal procedures weakens the framework for the reduction of gender inequalities. Besides the social progress that is thereby being impeded, economic growth also suffers from the limited integration of women in the formal economy: a recent report found out that Mauritania could increase its wealth by 19% if women had more opportunities to participate fully in economic activity[6].

In the target watersheds

15. The Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP+) tool implemented in the four target watersheds during the PPG phase (Annex N) provides an overview of the specific challenges faced by women with regards to the different aspects of resilience[7].

16. Women are often involved in crop production (while livestock production and rearing is generally carried out by men), in addition to the household tasks that they usually take care of. These agricultural activities are often non-commercial: subsistence agriculture is mostly observed among dual and women-headed households (51% and 44% respectively). Furthermore, households were women are the main decision-makers present lower diversified crop systems than men and dual-led households (1.81 crop species vs 2.14 and 2.81 respectively). Limited livelihood diversification in terms of agricultural production activities reflects potentially high vulnerability to the impacts of climate change and other

non-climatic hazards. The scant production diversification and associated vulnerability is particularly prominent among women-headed households. Overall, better access to improved production practices, know-how, technologies and inputs are thus recommended to increase productivity and release some of the economic burden on small-scale producers, particularly women who often combine agricultural activities with household tasks.

17. The comparatively lower familiarity of women with best production practices (e.g. crop diversification) can also be seen in terms of post-production practices. For example, in the last three years, women-led households have experienced higher post-harvest losses than the rest of the households. During the last season, about 53% of women-headed households lost a significant amount of their production (over half of it), followed by 47% in men-headed households and 21% in dual-led dwellings. Access to funding to acquire appropriate inputs (e.g. seeds) also reveals a disadvantage on the side of women, with only 31% of them stating being able to usually afford seeds (compared to 43% of men). Improved access to funding and good-quality inputs would therefore particularly benefit women in the target watersheds.

18. The disaggregation of land access by sex of the decision-maker shows that men notably enjoy better access to private land than women, as 93% of men-led households compared to 52% of women-led households acknowledged their access. Around 75% of households with both decision-makers own private land. Households led by women more often resort to communal forest land (48%), contrasting with 7% of men-led families. These elements highlight the fact that intervening to improve the management ? and productivity ? of communal natural resources (e.g. gum tree stands) would particularly benefit women.

19. The SHARP+ results also highlight strong gender differences in terms of decision making. Men tend to have more decision-making power than women in the target watersheds, as at least 20% of men make most the decisions in all of the aspects studied regarding agricultural production and management. This is particularly observed on livestock production activities, including the selection of type of livestock to raise/breed where 67% of women and 50% of men reported that men make most or all the decisions. Although they do not constitute an exhaustive sociological study of decision-making structures among the target communities, these preliminary results depict the very low decision-making power of women in terms of agricultural production practices. This is confirmed by the fact that the vast majority of women do not feel they could participate in the decision-making process even if they wanted to.

20. In terms of access to financing, women do not report having more difficulties than men to find a loan in case of need. However, a difference appears when identifying the reasons why community

members who did not access loans effectively did not: while about 40% of dual-headed households reported bad credit history and about 25% of men-led households were constrained by the distance to reach the lenders or by the inaccessibility to lender groups, the majority of women did not even ask for a loan (80% of respondents), which suggests little awareness and financial literacy. This can be linked to differences in access to education which, although it is generally restricted for all members and across all age ranges, is even lower for women across all four surveyed watersheds.

21. From the elements above, it appears that women implication in the project is crucial to achieve the expected transformational shift towards increased climate resilience. The proposed project will address gender gaps through increasing women access and control over natural resources and income-generating resources, and investing in their technical and leadership skills towards equitable participation in decision-making. In addition, by taking gender consideration into account in its design, the proposed project will ensure that the direct and indirect benefits of sustainable landscape management are equitably shared. Specific angles to achieve this result through the project activities are described in the Gender Action Plan below.

GENDER ACTION PLAN

Project tasks (outputs and activities when relevant)	**Gender- sensitive indicators and targets**	**Entry points for gender mainstreaming**
Creation of the Project Management Unit (PMU)	1 Gender Specialist contracted and engaged in work of the project. She/he will assist project activities throughout project implementation and ensure that gender aspects are duly taken into account.	
Output 1.1: Community-based governance structures are established and operationalised to mainstream climate resilience into watershed governance, using an integrated watershed management approach		

Conduct a profiling exercise of grassroot organisations involved in the management of natural resources ? water, rangelands ? as well as Community Listening Clubs (CLCs) in the target watersheds.	Existence of gender-sensitive profiling results	Gender dimensions will be embedded in the profiling methodology, with a view to gain a better understanding of women?s involvement ? or lack thereof ? in the management of natural resources through grassroot organisations.
Based on the profiling exercise, identify gaps and needs in the three types of grassroot organisations.	Existence of gender-sensitive reporting on gaps and needs	As above.
Depending on identified gaps, support the establishment of new water and land-use management groups in each target watershed.	? Share of women in newly-established water and rangeland management groups ? Number of additional women joining existing water and rangeland management groups as a result of awareness-raising efforts from the project	Although the exact composition of groups will be beyond the project control, all efforts will be made to establish and promote gender-balanced water and rangeland management groups.
Conduct awareness-raising sessions on Integrated Watershed Management Planning.	Integration of gender aspects into tailored training programmes	The project will ensure that gender aspects are fully included in the tailored training programmes, which will provide a basis for the mainstreaming of gender aspects into the agenda of the groups.
In the four target watersheds, conduct a participatory diagnostic of existing CLCs and identify potential capacity gaps.	? Number of Dimitra clubs established or community listening groups consolidated	The promotion of Dimitra?s Clubs is part of the gender-transformative strategy of the project. Dimitra clubs are informal groups mainly composed of women, who discuss common problems and determine ways to address them by acting together and using local resources. Dimitra Clubs create also a space to also take action in relation with community social norms and behaviours affecting women, thereby strengthening women?s leadership. As women play an important role for social
As per the results of the activity above, promote the Dimitra approach within existing CLCs or, where absent, establish Dimitra clubs.	?At least 70% of participants of Community listening groups or Dimitra	

In the four target watersheds, promote linkages and partnerships between listening groups and income-generating activities (including those supported by the project under Outcome 3) so that funding options for actions that may be endorsed by listening groups can be envisaged at the community level.	Club are women	cohesion, opportunities to strengthen this role in conflict-resolution mechanisms will be identified within Dimitra Clubs or CLCs. This opportunity to operationalise this peace building - protection of natural resources - women?s empowerment nexus (part of the humanitarian?development?peace nexus) will be assessed by the Gender expert[1].
Output 1.2: Climate-proof integrated watershed management plans are developed and implemented at watershed level to enhance resilience of vulnerable rural communities		
Draft Terms of Reference for the WDRCs in the four target watersheds.	Mainstreaming of gender aspects into ToRs	? Ensure gender aspects are fully included in the ToRs of the WDRCs, which will provide a basis for gender mainstreaming into the agenda of the Committees. ? Provide women with an enabling space to express their viewpoints without fears of being confronted.
Raise awareness among local communities (incl. farmers and livestock herders living within and bordering the target watersheds), including by mobilising an inclusive cohort of relevant stakeholders, ensuring their effective participation into WDRCs, and empowering women to play effective technical and leadership roles within each WDRC.	Share of women benefiting from training: 50%	Awareness-raising will particularly target women, with a view to promoting their participation into WDRCs and providing them with a space to voice their needs.

Support quarterly plenary meetings of the WDRCs in each watershed.	At least 40 % of women in WDRC meetings supported by the project	Equal participation of men and women to these committee meetings will be sought. Throughout the project, concrete actions will be taken to achieve participation targets in meetings and trainings, including: ? scheduling the meetings of the decision-making structures at times suitable for women participation ? providing women with an enabling space to express their viewpoints without fears of being confronted ? monitoring participation of women and taking immediate corrective measures if gender indicators and gender targets are not met ? as women play an important role for social cohesion, opportunities to strengthen this role in conflict-resolution mechanisms will be identified ? ensuring the participation of grassroots women living in remote agropastoral communities, including through the use of ICTs to overcome any budget or security-related challenges facing the participation of women in decision making.
Conduct a needs assessment to identify key capacity and awareness gaps related to climate change vulnerability and adaptation planning at the watershed level.	Quantitative and qualitative analysis will be disaggregated by gender	Gender will be taken into consideration when analysing gaps.
In coordination with universities and vocational training centers, develop specific training curricula for each WDRC to bridge the capacity and awareness gaps	Mainstreaming of gender into curricula	Training curricula will include specific angles to bridge gaps with gender aspects.
Produce training material and conduct training sessions planned	? Mainstreaming of gender into training material ? At least 40 % of women in training sessions supported by the project	

In the four target watersheds, support the participatory development of Watershed Management Plans (complete with a monitoring plan, stakeholder engagement plan assigning roles and responsibilities and a costed action plan) that fully incorporate climate resilience.	1.	The participation of women to elaboration of IWMPs will be strongly supported. However, the percentage of women involved in these activities will depend on the percentage of women reached under Outputs 1.1 and 1.2 activities.
Conduct an annual review of the IWMPs and, as necessary, prepare amendments to be validated during one of the annual WDRC sessions.	2. As above.	As above.
Output 1.3: Human and institutional capacity and local knowledge strengthened to strategically address climate vulnerabilities and enhance resilience at watershed-level using adaptive innovations, strategic planning and monitoring		
Undertake capacity-building interventions targeting local decision makers from municipalities, extension services, local representatives of MEDD and other relevant ministries, and community leaders with regards to the best available knowledge and tools to improve the mainstreaming of climate change adaptation and vulnerability considerations into land use planning and related governance schemes to enhance resilience of vulnerable rural communities at watershed level including through the use of VGGT	At least 50 % of women trained NB : this is an ambitious goal that might be not fully achieved throughout project implementation because women?s participation in local institutions is currently well below 50%.	Other gender transformative actions are planned within this activity: ? encouraging local governments to recruit female workers to join public institutions ? reviewing the training curricula to make sure that gender aspects are fully taken into consideration at all levels.
Support Municipal Councils to update the Communal Development Plans in the communes covering the target watersheds that reflect watershed-level, resilience-building priorities.	Level of mainstreaming of gender aspects into revised CDPs	A review of the CDPs will be carried out with a gender lens, to ensure that gender aspects have been duly considered. If necessary, a complementary assessment of gender aspects may be conducted by the Gender expert and recommendations to strengthen management plans in this regard will be formulated.
Output 2.1: Agro-pastoral Field Schools established and operational to support the adoption of climate resilient and adaptive production practices		

Draft model curricula for agro-sylvo-pastoral activities to be conducted with APFSs, adapted to the different production systems involved.	Integration of 1 gender awareness module into the training curriculum.	The mainstreaming of gender aspects has sometimes been analysed as a weakness of APFS curricula developed in other countries. To remedy this, a special module will be developed ? building on similar modules that are developed elsewhere, including through GEF-financed projects[2] ? and taught to master trainers (cf. below).
Provide refresher training to 8 experienced master trainers.	Integration of 1 awareness raising on gender aspects module into the recycling training.	A first assessment of this module will be led and the module will be strengthened if necessary.
Train 100 APFS facilitators (including members from extension services, livestock associations, local NGOs, civil society, private veterinarians and producers) through Memorandum of Understandings and retraining of existing trainers.	Number of women trained Target: at least 30%	Whenever possible, the project will target women for training sessions but because of the lower share of women in extension services, it is difficult to train as many women as men as trainers.
Conduct a participatory identification of interested beneficiaries, topics of interest for APFS and target zones for implementing the APFSs within the target watersheds. Identify existing promising innovations in local territories that can contribute to a basket of options from which APFS participants can choose[3].	At least 50% of women identified as beneficiaries of APFS activities	Equal participation of men and women to APFS is targeted. This activity of identification of beneficiaries is therefore crucial. To make sure women engaged themselves into APFS activities, concrete actions will be taken: ? explaining to potential beneficiaries that women are especially welcomed to APFS trainings. Details concrete measures undertaken by the project to welcome them (see below the actions? list) ? monitoring registration of women to APFS and taking immediate corrective measures if gender indicators and gender targets are not met. ? analysing APFS enrolment modalities and adapt them if necessary.

Implement 400 APFSs in the target watersheds and train 10,000 agro-pastoralists in the APFS approach according to locally adapted versions of the training curricula	At least 50% women among participants	To build gender-sensitive APFS approach, the project will make sure to: ? select attractive learning module for women, such as nutrition and commercialisation modules. ? schedule all relevant activities (trainings, graduation, surveys, APFS preparation sessions) at times suitable for women participation. ? when possible, hire cooks to prepare local foods to serve during the sessions and to care for children. ? give priority to women regarding group leadership roles assignment (treasurer, chairwoman, secretary, advisor). ? provide women with an enabling space to express their viewpoints without fears of being confronted ? use the ?special session? of the APFS training to mainstream gender issues. ? when possible, hire women to conduct the ?special sessions? of APFS trainings. ? when possible, mobilise women extension agents in order to give more role models for women.
Organise sessions to retrain APFS facilitators in Year 2 and Year 3 on the basis of potential capacity gaps reported during Y1 and Y2. Organise annual stocktaking workshops for facilitators in Y 2, 3 and 4.	Integration of one module on awareness raising on gender aspects into the recycling training.	
Output 2.2: Productive landscapes restored and ecosystems functionality supported at watershed level to enhance resilience		
The stabilisation of dunes will benefit at least 50% of women.		

Develop a detailed, costed study (including precise site selection and hydrological assessment taking future climate conditions into account) for the rehabilitation and construction of small hydrological infrastructures (dykes, weirs, sills).	Integration of gender aspects in the study (selection of sites to be targeted, based on the benefits brought to women).	The rehabilitation of existing small hydrological infrastructures and / or construction of new ones will particularly benefit women, as women are often tasked with water collection for household use and/or for irrigation. Improving water availability (through improved aquifer recharge) will thus reduce the burden of collecting water.
The restoration of eroded banks will particularly benefit women, as women are often tasked with water collection for household use and/or for irrigation. By restoring degraded banks, siltation will likely decrease, thereby enhancing water quality.		
Women will benefit from the improved management of rangeland and forests, in particular as they are the main beneficiaries from Non-Timber Forest Products in the target watersheds. In addition, the dissemination of improved cookstoves ? a measure that will help relieve the pressure on forest resources ? will mostly benefit women, as they are usually in charge of both collecting wood and cooking.		
In Meisah and Dafort, fence at least 100 ha and 150 ha, respectively, of acacia stands with strong gum production potential in areas adjacent to the Tamourt (South and South-West). Plant *Acacia senegal* seedlings. Support women in this area to create a market garden (digging of a well equipped with solar drainage), with a view to increase the interest of local populations in the regeneration of the gum tree stands ? especially in the five years prior to the production maturity of acacia trees.	Number of women benefiting from project support to engage in market gardening: to be determined.	Gum tree harvesting can be a high-income generating activity for women. However, given that acacias take five years before maturity, complementary sources of income need to be available. In this perspective, the proposed project will support women to create market gardens that will provide income while acacia stands are regenerating. This will also have the benefit of diversifying income sources, thereby increasing women?s economic resilience to climate impacts that may affect one specific income source.
Output 2.3 : Innovative financial mechanisms are supported to catalyse investment in climate-resilient, income-generating activities in target watersheds		

Provide technical and managerial training to local CSOs and CBOs in target watersheds to support the creation of 4 Savings and Loan Associations using FAO?s Caisse de R?silience approach (in mutual supportiveness with APFS related interventions under Output 2.1 and Dimitra club activities under Output 1.1)	At least 50% women among beneficiaries (training & members of Savings and Loan Associations)	Micro-?nance initiatives are often identi?ed as an effective tool for women to participate in income generation activities and women?s empowerment. Ensure gender aspects are fully included in the ToRs of microfinance implementation, which will provide a basis for the systematic mainstreaming of gender aspects into microfinance activities and will guarantee that women are the first beneficiaries of these activities.

Conduct an analysis along priority agro-sylvo-pastoral value chains (including sorghum-based couscous, tichtare, transformation of plastic products, etc.) to identify key opportunities and challenges to establish inclusive, gender responsive, and climate resilient value chains across the target watersheds with a potential for upscaling nationally in synergy with relevant baseline initiatives	Presence of gender aspects in the ToRs of the value chain analysis	During the PPG phase, three income-generating activities (IGA) have been identified that can particularly strengthen the resilience of local communities in the target regions. These IGAs have also been selected according to their women?s participation or to their inclusiveness potential for women. Additional gender-inclusive IGAs may be supported through the financial mechanisms put in place under Output 3.1. ?Sorghum-based couscous The preparation of sorghum-based couscous is almost entirely done by women. The benefits of developing this value chain would thus mostly go to women. The value chain analysis will place a specific focus on the expected gender-based sharing of current profits derived from the preparation of sorghum-based couscous, and make projections on the expected additional benefits that women would derive from project support to the development of this value chain. ?Tichtare Traditionally, tichtare is mostly produced by men. However, opportunities for women to be involved in certain stages of the value chain (e.g. marketing) will be analysed in the value chain analysis. ?Transformation of plastic-based products In existing experiences, the transformation of plastic products has been a women-only activity. It is thus expected that project support to this value chain will also mostly benefit women. The health hazard assessment will take into account any specific risk posed to women. This may include children exposure to pollutants.

Provide training and coaching to at least 40 potential project holders (out of which at least 20 are women-led) in target watersheds to support them to develop human-centric and climate-proof micro-business plans along priority agro-sylvo-pastoral value chains	At least 50% women among trainees	
Select at least 20 micro-business plans out of a pool of 40 developed by project holders (out of which at least 10 are women-led) from target watersheds based on a transparent set of criteria mutually determined in consultation with the WDRSs established under Output 1.2 to enhance resilience and strengthen livelihoods in line with the adopted IWMPs (as per the established criteria, selected entrepreneurs will allocate 10% of their net annual income to special revolving funds over a period of 3 years)		As relevant depending on the opportunities identified in the value chain analysis, the business plans developed will meet the practical needs and strategic priorities of women i.e. will take account of women?s specific barriers, building on gender analyses and consultations for the project.
Conduct a health hazard assessment to identify any significant risk posed by the transformation processes of plastic products. The assessment will be conducted in real-life situations, based on the ongoing activities supported by the GIZ in Tidjikja and/or in Rachid. Based on the results of the assessment, produce health safety guidelines for the relevant steps of the transformation processes.	Existence of gender-sensitive health hazard assessment	The health hazard assessment will take into account any specific risk posed to women. This may include children exposure to pollutants.

Facilitate market-access and the procurment of inputs especially for women-led cooperatives, including through the establishment of bulk contracts with local suppliers for the provision of inputs (biopesticides and biological control agents, animal feed, veterinary products, seeds, biofertilisers and bio-stimulants, packaging etc.).		
Establish 4 revolving funds managed by the local savings and loan associations (one in each target watershed) to collect and manage the allocations made by the project holders to micro-finance adaptive income-generating practices aligned with resilience and livelihoods priorities in each watershed.	Presence of gender aspects in the ToRs of the revolving funds	
Output 3.1: Project results mainstreamed to enhance resilience and adaptive policies		
Conduct consultation workshops to decision makers from MEDD and relevant stakeholders at national and local levels (including members of the PSC) to identify gaps based on project-delivered climate vulnerability assessments and entry points for enhancing resilience and adaptive practices by improving the policy, regulatory and institutional frameworks	Presence of gender aspects in the ToRs of the consultations	

Develop and submit amendments to mainstream climate adaptation and resilience into relevant policies and regulatory frameworks for validation by policy makers. These include primarily the CDPs at communal level which will likely be updated during project implementation, as well as national/sectorial/local strategies and policies related to land and water tenure, pastoralism, agriculture, food security, social security, nutrition and climate change. This will be achieved in cooperation with the ongoing NAP process in Mauritania to mainstream and enable integrated adaptation strategies.	Number of gender-sensitive amendments	
Provide training on climate-sensitive budgeting to key institutions to ensure long-term investments in adaptation planning and enable tracking of climate-related expenditures.	Number of gender-sensitive budget lines identified with climate markers	
Output 3.2: Project lessons captured and knowledge managed and disseminated		
Develop a project communication strategy.	Gender aspects are integrated into the communication strategy	The communication strategy will include key findings, benefits, opportunities, or remaining constraints regarding gender mainstreaming into the project.
Publish annual briefs on the project?s accomplishments, experiences and lessons learned. Share these briefs with national and regional public institutions, national and international development organisations and NGOs.	Number of briefs incorporating gender aspects & lessons learned: one per year	Gender aspects will be systematically highlighted in the knowledge shared from the project.

Prepare and publish at least three thematic case studies, documenting key activities conducted by the project with challenges, difficulties, lessons learned and recommendations.	At least one of the case studies is focused on gender.	
Organise information and knowledge exchange on APFS, including with the Central Africa Field School Network, African Forum For Agricultural Advisory Services, Global FFS Platform etc.		Gender aspects will be systematically highlighted in the knowledge shared from the project. This is one of the focal area of most targeted knowledge-exchange platforms and networks.
Design and implement a scientific protocol for the monitoring of ecological restoration processes (e.g. dune fixation, riverbank stabilisation, restoration of rangelands etc.) to be undertaken under Component 2. This protocol may include the training of local organisations for the daily monitoring of simple parameters.	? Share of women trained and participating in the scientific monitoring of sites: to be determined 3. ? Number of women co-authors of scientific papers: to be determined	Grassroot monitoring of simple restoration parameters (e.g. plant growth) can be an avenue to interest women in ecological restoration, and, for younger women, to entice them into studying ecology. Likewise, the proposed project will try to mobilise female ecology students and researchers to participate in the elaboration and implementation of monitoring protocols.
Output 3.3: Effective Monitoring, Evaluation and Learning (MEL) implemented		
Co-develop and implement the MEL plan, identifying indicators, tools and the monitoring strategy for the project?s activities, including roles and responsibilities as well as a timeline and budget.	Gender aspects integrated to the monitoring and the evaluation of the project	All the project?s gender aspects will be monitored and evaluated including through the indicators of this Gender Action Plan and as foreseen in the M&E plan.
Organise a workshop to review the project?s MEL system at project inception.		The MASEF will be invited to the workshop and given the possibility to suggest improvement to the mainstreaming of gender into the MEL system, in accordance with national priorities.
Conduct an independent mid-term review.	The gender sensitivity and gender	The project has developed a set of gender-responsive indicators in order to facilitate the

Conduct an independent terminal evaluation.	responsiveness of the project will be evaluated in the both evaluations.	deployment of gender-sensitive activities. These gender-responsive indicators also allow proper monitoring and evaluation of gender mainstreaming and gender benefits of the projects. The assessment of project?s gender dimension will therefore be an important element of both the mid-term review and the independent terminal evaluation.

[1] See also specific work conducted by FAO on this nexus in Yemen (here and here).

[2] E.g. GEF-funded project 10362 in Mali.

[3] For a description of this "traque ? l?innovation" approach, see Salembier C., Elverdin J, Meynard JM. 2016. Tracking on-farm innovations to unearth alternatives to the dominant soybean-based system in the Argentinean Pampa. Agronomy for Sustainable Development. 36.

---

[1] Office National de la Statistique. 2016. Analyse de la pauvret? mon?taire

[2] Source: World Bank. 2021. Rapport sur la Situation ?conomique en Mauritanie

[3] Generally, and although illiteracy remains a core issue for women empowerment, the illiteracy rate has dropped since the early 2000s.

[4] Source: World Bank. 2021. Rapport sur la Situation ?conomique en Mauritanie

[5] Ibid

[6] Ibid

[7] 35% of surveyed households identified men as the main decision-makers, whereas women were considered as the main decision-makers in only 18% of the cases. The latter is particularly noted in the cases were men are not present in the household permanently. Households jointly led by adult women and men (i.e., dual decision-makers) represent 47% of the surveyed households.

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

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.

1. The main beneficiaries and project stakeholders are private sector producers (i.e. agro-pastoralists, pastoralists and farmers). These private sector actors will be actively engaged in project activities. Assisting private producers to identify and implement improved practices is the primary project objective. These private producers will be supported from the production to the transformation and marketing stages of the value chains they are involved in, as long as these value chains are recognised as having positive adaptation benefits.

2. Beyond the support to economic activities, successful engagement with the private sector is critical to the project achieving desired SLM, SFM impacts. This is why private stakeholders will be engaged with under all project components:

? Under Component 1, private actors will be involved in the participatory mechanisms to establish a renewed watershed-level governance of natural resources. Private actors will be represented through cooperatives and other professional organisations.

? Under Component 2, private producers will benefit from training on SLM, SFM and climate-smart agricultural practices through APFS sessions. As mentioned, private actors will also be supported to engage in climate-resilient income-generating activities. This will be achieved by, inter alia, promoting the role of local stkaeholders as ?micro-investors? by facilitating access to funding mainly through locally-sourced cohorts of micro-entrepreneurs along target value chains and the establishement of loan and savings associations.

3. Under Component 3, some of the knowledge products will be aimed at private stakeholders.

4. Throughout the project, engagement with the private sector will be facilitated through existing coordination bodies, including organisations representing agriculture and livestock producers, as detailed in the stakeholder analysis.

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):

Section A: Risks to the project

1. The risks identified in relation to the effective execution and sustainability of project activities, including potential social and environmental threats, are related to complexities of implementing landscape approaches, project management and exogenous risks. The main risks identified during the PPG phase are summarised in the table below.

Table 17. Main identified risks to the project.

Description of risk	Impact [1]	Probability of occurence	Mitigation actions	Responsible party

Adaptation measures are inefficient at the community level, demotivating the beneficiaries faced with the impacts of climate change.	**H**	**M**	The choice of adaptation measures will be made in a participative way with the beneficiaries themselves who will be trained before and along with local authorities and extension services, thereby creating awareness on the risks and timeframes associated with each type of interventions. In addition, although it is possible that climate impacts could affect the effectiveness of some of the project interventions in the short term (e.g. yields affected by particularly dry conditions in a given project year), the wide range of project interventions will limit the risk that all adaptation measures are deemed ineffective by the population. In this perspective, the menu of interventions includes activities that will have rapid benefits (e.g. improved access to finance through and loan and savings associations; development of horticulture in gum tree stands, etc), which will complement those activities the benefit of which will intrinsically take longer to materialise (e.g. biological dune fixation ; valorisation of local products along value chains).	PMU, MEDD, APFS master trainers and facilitators
The beneficiaries have work/time conflicts and do not have the time to implement the activities decided on with project?s support, in particular women who are responsible for several household activities.	**H**	**M**	The management structures of the communities and the beneficiaries will be identified, made aware and totally involved in the expected benefits and advantages. During the PPG phase, participatory consultations have highlighted the demand for the activities to be supported by the project by communities (including women) themselves. All efforts will be made to accommodate specific constraints faced by women so that they can benefit from all project activities (e.g. organising collective childcare during project training sessions, arranging for meals, etc.).	PMU, MEDD

Local authorities are not interested in the project, disagree with the recommended adaptation measures and hold beneficiary communities back from taking part in project activities.	**H**	**H**	A participatory approach has been followed throughout the PPG phase, to ensure that proposed interventions effectively respond to local demand and are in line with grassroot concerns in terms of climate resilience. This approach will continue to be put in practice during project implementation, as the intervention strategy is centered around the development of a participatory governance of natural resource and development at the watershed level. All relevant authorities will be involved in planning activities, thereby providing opportunities to voice preferences and any concerns. Throughout project implementation, local authorities and representative grassroot organisations will be placed in the ?driver?s seat?, with the PMU guiding planning processes.	PMU, MEDD
Interference from the hierarchy and/or from politicians in the selection of the sites and the activities supported by the project might compromise the results.	**H**	**L**	Objective vulnerability criteria have been used to select the target watersheds. Grassroot demand for the project activities have guided the design of the project interventions, which have not been decided on a political basis. At the watershed level, the choice of sites for the implementation of landscape management activities under Component 2 in particular might be influenced by local politics; during the planning phase of these activities, the PMU will make sure that all decisions are substantiated by vulnerability analyses backed by solid evidence (hence the plan to have Integrated Watershed Management Plans informed by scientific evidence under Component 2).	PMU, MEDD, Scientific partners

Climate change impacts sustainability and effectiveness of project efforts	**H**	**M**	The mitigation of secondary impacts of climate threats are a cornerstone of the project intervention logic. These current and anticipated impacts are detailed in Annex M. A number of practices are foreseen (crop diversification, extension of resilient crops, soil and water conservation, integrated pest management, etc.) at the plot level, while answers to mitigate impacts are also sought at the landscape level (flood management micro-infrastructure, groundwater rehabilitation infrastructure, etc.). Climate projections and risk asessments will be taken into account in the technical design of project interventions so that these can withstand climate impacts. For example, the specifications of small hydrological infrastructures will be based not only on current hydrological conditions, but also on anticipated changes in these conditions based on future climate projections.	PMU
Limited national and local capacity for the project effective implementation and limited chances to involve international consultants due to Covid-19- related restrictions.	**M**	**M**	The risk is only partly under the project control. However, under all components, the proposed project will invest considerable resources in capacity building of regional and local authorities as well as communities to plan, implement and monitor sustainable landscape management. The project implementation will involve a wide range of partners that have significant capacity to ensure achievement and sustainability of the project outcomes. Project implementation was designed to rely as little as possible on international expertise, one of the reasons being that this limits exposure to thr risk of disrupted international travel.	PMU, MEDD, FAO

Local, regional and/or global measures to contain impacts from pandemics (such as Covid-19) and their repercussions hampers the availability of technical expertise, engagement of stakeholders, and mobilisation of financing	**M**	**M**	The project intervention logic considers resilience in a comprehensive way, and therefore addresses food security, rural poverty and livelihood opportunities. It also makes use of approaches, such as the farmer field school approach, that have proven successful over the past few years in several countries, providing extension services despite containment restrictions, and promptly addressing health related concerns so they do not become social, economic and environmental crises. To overcome concerns in mobilising the technical expertise to support project implementation, the project will work with the technical expertise available nationally, and prioritise work with locally rooted (CSOs, NGOs, government institutes, extension services, ?) organisations in order to minimise the impacts of limitations on mobility at the national and international level. Technological alternatives to face-to-face consultations will be deployed, securing proper participation and engagement of all relevant stakeholder groups, including women and youth including through the use of ICTs. Government priorities have been defined, and agriculture and livestock are key sectors. It is therefore unlikely that re-orientation of financing is going to materialise in the coming biennium. Still, should it become difficult to secure co-financing, the project will deliver evidence and increase its sensitisation, awareness-raising and capacity development efforts under Component 3 in order to advocate for continued support to green and resilient recovery.	PMU, MEDD, FAO

2. Note on Covid-19 : The impact of Covid-19 in Mauritania has been relatively limited in terms of casualties, with 23,755 cases confirmed and 535 deaths since the beginning of the pandemic[2]. The vaccination campaign was launched in June 2021 and approx. 178,000 people have been vaccinated[3] as of July 2021. In early September, Mauritania became the first country in West Africa and the 12th on the continent to reach the World Health Organization target of vaccinating at least 10% of the population against Covid-19 by the end of September[4].

3. Despite this efficient vaccination campaign, the pandemic has disrupted key activities of in Mauritania: cattle markets were shut down, schools were closed, international cooperation was affected by disruptions in international travel and GDP decreased by 2% in 2020. In reaction, a National Multisectoral Response Plan for Covid-19 was launched on 8 May 2020. With an estimated cost of approx. USD 633 million, a large part of which is to be financed from the State's own resources, it is structured around five complementary pillars: i) health; ii) planning, coordination and monitoring of the economic surveillance plan; iii) measures to mitigate the socio-economic impact of the pandemic; iv) resilience, economic recovery and access to basic services; and v) security aspects and prevention of the pandemic. A Social Solidarity Fund was also created.

4. In this context, the proposed project will contribute to the objectives of the National Multisectoral Response Plan for Covid-19 by strengthening the overall resilience of local communities, not only to climate impacts but generally to external shocks that may affect their livelihoods. The income-generating activities to be supported under Output 2.3 will allow to diversify rural livelihoods and generate additional income that will help beneficiaries face external shocks. The proposed LDCF investment will thus be aligned with the ?Build Back Better? approach[5]. In addition, the project? EbA approach is fully consistent with GEF?s recommendations contained in the White Paper on a GEF Covid-19 Response Strategy that ?private sector actors should have in place environmentally supportive policies on sustainable supply chains, harmful subsidy reform, natural infrastructure, biodiversity offsets, nature-based solutions and carbon markets, green investment, and investment risk management?, as well the objective of preserving intact natural ecosystems.

---

[1] H: High; M: Moderate; L: Low.

[2] Source : Ministry of Health, latest data available from July 2021. Accessible here.

[3] Ibid.

[4] Source: World Health Organization. Accessible here.

[5] Urama KC. 2021. African Development Bank Group. Builing Back Better. Policies for Building Resilient Economies in Post-Covid-19 Africa. Accessible here.

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.

1. The MEDD[1] will have the overall executing and technical responsibility for the project, with FAO providing oversight as GEF Agency as described below. The MEDD will act as the lead executing agency and will be responsible for the day-to-day management of project results entrusted to it in full compliance with all terms and conditions of the Operational Partnership Agreement signed with FAO. As OP of the project, the MEDD is responsible and accountable to FAO for the timely implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with FAO and GEF policy requirements.

2. National Project Director: the government will designate a National Project Director (NPD). Located in the MEDD offices in Nouakchott, the NPD will be be responsible for coordinating the activities with all the national bodies related to the different project components, as well as with the project partners. S/He will also be responsible for supervising and guiding the Project Coordinator (see below) on the government policies and priorities.

3. Project Steering Committee: The NPD will chair the Project Steering Committee which will be the main governing body of the project. The PSC will approve Annual Work Plans and Budgets on an yearly basis and will provide strategic guidance to the Project Management Team and to all executing partners. The members of the PSC will each assure the role of a Focal Point for the project in their respective agencies. Hence, the project will have a Focal Point in each concerned institution. As Focal Points in their agency, the concerned PSC members will: (i) technically oversee activities in their sector; ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project; iii) facilitate coordination and links between the project activities and the work plan of their agency; and iv) facilitate the provision of co-financing to the project.

4. The National Project Coordinator (see below) will be the Secretary to the PSC. The PSC will meet at least twice per year to ensure: i) oversight and assurance of technical quality of outputs; ii) close linkages between the project and other ongoing projects and programmes relevant to the project; iii) timely availability and effectiveness of co-financing support; iv) sustainability of key project outcomes, including up-scaling and replication; v) effective coordination of government partner work under this project; vi) approval of the six-monthly Project Progress and Financial Reports, the Annual Work Plan and Budget; vii) making management decisions when guidance is required by the National Project Coordinator of the PMU.

Table 18. PSC composition.

Proposed PSC membership

Organisation	Position within organisation
MEDD	Secretary General
MEDD	National Project Director
Ministry of Agriculture	Representative of the Secretary General
Ministry of Livestock	Representative of the Secretary General
Ministry of Water Resources and Sanitation	Representative of the Secretary General
Ministry of Housing, Town Planning and Regional Planning (MHUAT	Representative of the Secretary General
Ministry of Social Affairs, Children and Families (MASEF)	Representative of the Secretary General
National Center for Agronomic Research and Agricultural Development (CNRADA)	Representative of the Director
Regional councils	Representatives of the Presidents of the Regional Councils
Wilaya of Tagant	Representative of the Wali (Governor)
Wilaya of HE Gharbi	Representative of the Wali (Governor)
Wilaya of Assaba	Representative of the Wali (Governor)
Wilaya of Guidimakha	Representative of the Wali (Governor)
NGOs, CSOs, CBOs, VIOs, research institutions and Academia	Representatives of the Watershed Development & Resilience Committees; representatives of the Universit? des Sciences, de Technologie et de M?decine ; representative of the National Center for Agronomic Research and Agricultural Development (CNRADA)
Private sector	Representatives of local producers? cooperatives (incl. women?s cooperatives)
FAOMR	Assistant FAOR

5. A Project Management Unit (PMU) will be co-funded by the GEF and established within the MEDD?s central and decentralised offices. The main functions of the PMU, following the guidance of the Project Steering Committee, are to ensure overall efficient management, coordination, implementation and

monitoring of the project through the effective implementation of the annual work plans and budgets (AWP/Bs). The PMU will be composed of a National Project Coordinator (NPC) who will work full-time for the project lifetime.

Project PMU		
Position	**Qualifications & experience**	**Responsibilities**
National Project Coordinator	Minimum of 10 years of technical and managerial experience dealing with agro-pastoralism and CCA issues in Mauritania Minimum of MSc in Environmental or Biological Sciences (Natural Resources Management, community-based management of natural resources, agro-pastoralism, CCA)	Daily implementation, management, administration and technical supervision of the project, on behalf of the MEDD and within the framework delineated by the PSC
Admin. & Finance Specialist	Minimum of 10 years in Administrative & Financial Management in Mauritania. Minimum of Degree in Finance & Accounting or any other related field.	Responsible for the budget planning, and supports the project management unit by offering insights and financial advice that will allow them to avoid over expenditure.
M&E Specialist	Minimum of 5 years work experience in project monitoring and evaluation. Minimum of Masters-Degree in Project Management, results-based management, development evaluation, or other relevant disciplines.	Design monitoring and reporting tools, support implementation of project?s M&E system and ensuring that project are monitored and reported. Will support Knowledge Management, Stakeholder Engagement, and system-wide capacity development.

Gender Specialist	Minimum of 5 years work experience in gender mainstreaming, women empowerment, and other related areas. Minimum of Masters-Degree in gender studies, social sciences, and other relevant disciplines	In charge of mainstreaming gender considerations as stated in the Gender Action Plan into project interventions, and report on progress achieved to the M&E Specialist Will support Knowledge Management, Stakeholder Engagement, and system-wide capacity development.

6. The National Project Coordinator (NPC) will be in charge of daily implementation, management, administration and technical supervision of the project, on behalf of the Operational partner and within the framework delineated by the PSC. S/he will be responsible, among others, for:

i) coordination with relevant initiatives;

ii) ensuring a high level of collaboration among participating institutions and organizations at the national and local levels;

iii) ensuring compliance with all OPA provisions during the implementation, including on timely reporting and financial management;

iv) coordination and close monitoring of the implementation of project activities;

v) tracking the project?s progress and ensuring timely delivery of inputs and outputs;

vi) providing technical support and assessing the outputs of the project national consultantshired with GEF funds, as well as the products generated in the implementation of the project,;

vii) approving and managing requests for provision of financial resources using provided format in OPA annexes;

viii) monitoring financial resources and accounting to ensure accuracy and reliability of financial reports;

ix) ensuring timely preparation and submission of requests for funds, financial and progress reports to FAO as per OPA reporting requirements;

x) maintaining documentation and evidence that describes the proper and prudent use of project resources as per OPA provisions, including making available this supporting documentation to FAO and designated auditors when requested;

xi) implementing and managing the project?s monitoring and communications plans;

xii) organising project workshops and meetings to monitor progress and preparing the Annual Budget and Work Plan;

xiii) submitting the six-monthly Project Progress Reports (PPRs) with the AWP/B to the PSC and FAO;

xiv) preparing the first draft of the Project Implementation Review (PIR);

xv) supporting the organization of the mid-term and final evaluations in close coordination with the FAO Budget Holder and the FAO Independent Office of Evaluation (OED);

xvi) submitting the OP six-monthly technical and financial reports to FAO and facilitating the information exchange between the OP and FAO, if needed; and

xvii) informing the PSC and FAO of any delays and difficulties as they arise during the implementation to ensure timely corrective measure and support.

7. Implementing Agency: The Food and Agriculture Organization (FAO) will be the GEF Implementing Agency (IA) for the Project, providing project cycle management and support services as established in the GEF Policy. As the GEF IA, FAO holds overall accountability and responsibility to the GEF for delivery of the results. In the IA role, FAO will utilise the GEF fees to deploy three different actors within the organization to support the project (see Annex J for details):

Position	Description	Contact Information
Budget Holder	Usually the most decentralised FAO office, will provide oversight of day-to-day project execution.	FAO Representative in Mauritania Mr. Huynh, Alexandre
Lead Technical Officer	Drawn from across FAO will provide oversight/support to the projects technical work in coordination with government representatives participating in the Project Steering Committee.	Mr Amrani, Mohamed (FAOSNE)
Funding Liaison Officer(s)	Within FAO will monitor and support the project cycle to ensure that the project is being carried out and reporting done in accordance with agreed standards and requirements.	Mr Bergigui, Mohamed (OCBD) Mr Dirkmaat, Chris (OCB)

8. As GEF agency, FAO?s responsibilities will include:

? administrating funds from GEF in accordance with the rules and procedures of FAO;

? overseeing project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s)and other rules and procedures of FAO;

? providing technical guidance to ensure that appropriate technical quality is applied to all activities concerned;

? conducting at least one supervision mission per year; and

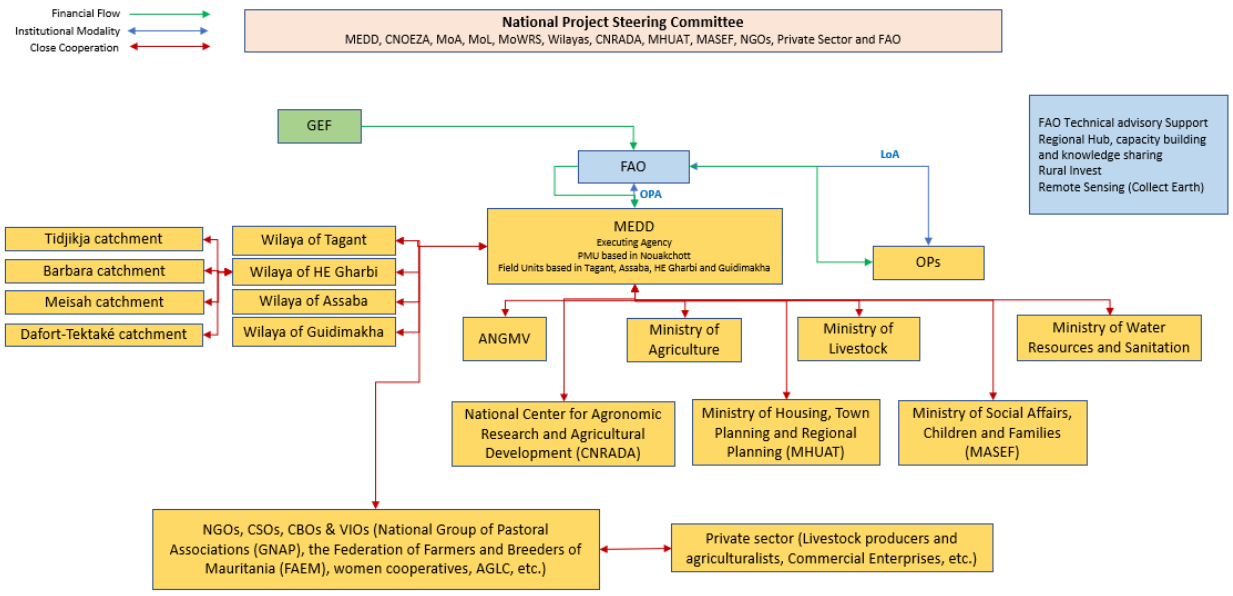
? reporting to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, the Mid Term Review, the Terminal Evaluation and the Project Closure Report on project progress; and

? financial reporting to the GEF Trustee.

---

[1] It should be noted that the identified Operational Partner(s) or OP, results to be implemented by the OP and budgets to be transferred to the OP are non-binding and may change due to FAO internal partnership and agreement procedures which have not yet been concluded at the time of submission of this funding proposal.

Figure 13. Proposed institutional arrangements.



[1] It should be noted that the identified Operational Partner(s) or OP, results to be implemented by the OP and budgets to be transferred to the OP are non-binding and may change due to FAO internal partnership and agreement procedures which have not yet been concluded at the time of submission of this funding proposal.

7. Consistency with National Priorities

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

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

1. A party to the United Nations Framework Convention on Climate Change (UNFCCC), Mauritania submitted its Initial National Communication (2001), Second National Communication (2008), Third National Communication (2014) and Fourth National Communication (FNC, 2019), as well as its Intended Nationally Determined Contribution (INDC, 2015). The National Adaptation Programme of Action (NAPA, 2004) highlights that the most obvious effects of climate change on land ecosystem in Mauritania are desertification and its consequences. The proposed project follows the NAPA?s preferred strategy to prioritise actions to reverse land degradation and erosion of natural resources, particularly due to wood and charcoal production, overgrazing and inappropriate agricultural production methods. The NAPA also recommends to implement adequate organisational structures ? including at the community level ? to facilitate the sustainable management of different types of land ecosystems (wetlands, agricultural ecosystems, forests, pastures). The FNC stresses the vulnerability of the livestock sector, and identifies several avenues to improve its climate resilience. The proposed project addresses some of these priorities, namely:

-improvement of resilience of pastoral livestock in the face of drought and climate change;

-rational and sustainable management of pastoral resources in relation to development and community empowerment linked to the protection of livelihoods;

-programming and facilitation of public and private investments with a view to linking the securing, transformation and modernisation of livestock systems and commodity chains;

-taking into account the specificities of livestock farming in terms of financing, investments and credit and savings mechanisms;

-strengthening the human and organisational capacities of associations and socio-professional organisations; and

-promoting and strengthening of the role of women in the livestock sector, with emphasis on professionalisation, access to resources (credit, inputs, etc.) and involvment in decision-making forums.

2. In 2017, Mauritania presented its Technology Needs Assessment[1] (TNA) for adaptation. One of the key technologies mentioned in the TNA that will be promoted by the project is fodder production. The barrier analysis from the TNA will also inform intervention strategies related to fodder production.

3. The primary goal set out in Mauritania?s latest National Biodiversity Strategy and Action Plan (NBSAP, 2011-2020) is to maintain the functions of ecosystems over the long term, including their capacity to adapt and evolve in relation to environmental changes, particularly climate change and desertification processes. The NBSAP is based on six strategic orientations: i) awareness raising on biodiversity issues; ii) the preservation of life and its ability to evolve; iii) investment in biodiversity conservation; iv) assuring the sustainable and equitable use of biodiversity; v) assuring policy coherence and the effectiveness of actions; and vi) the development, sharing and use of knowledge. Among the prioritised actions under the 14 national targets that were set, the proposed project will contribute to the following:

? encouraging community mobilisation (Objective 1, Activity 4);

? value and contribute to the public recognition of actions undertaken to conserve biodiversity (Objective 2, Activity 1);

? preserve main habitats and species (Objective 3, Activity 2);

? disseminate best practices and tools for the sustainable management of ecosystems (Objective 4, Activity 4);

? mainstream the financing of biodiversity conservation into development projects and programmes (Objective 6, Activity 2);

? implement systems for the sustainable management of pastures (Objective 7, Activity 2);

? facilitate participatory approaches and ensure that the decisions are actually implemented (Objective 7, Activity 4); and

? promote the sustainable use of natural resources (Objective 8, Activity 1).

4. Mauritania is a party to the United Nations Convention to Combat Desertification.?? As such, the country is part of the Land Degradation Neutrality (LDN) target-setting programme that aims to halt the ongoing loss of healthy land through degradation. Delivering LDN by 2030 ? which is Mauritania?s overarching goal ? requires action on the following fronts: i) scaling up of finance; ii) strengthening the institutional environment for sustained investment in sustainable land management; iii) developing national capacities for sustainable land management and restoration; iv) building synergy between related

restoration initiatives and targets for more efficient use of resources; and v) establishing monitoring systems to track progress and identify opportunities and bottle-necks. The proposed project is aligned with Mauritania?s LDN targets, in particular through Actions i, iii, iv and v.

[1] GoM. 2017. Evaluation des Besoins en Technologies climatiques d?adaptation

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.

1. Internally, the knowledge management approach will focus on information sharing, regular dialogue at all levels and the dissemination of documents. Externally, it will focus on the dissemination of information to partners (government, civil society, etc.) and to beneficiaries. Appropriate channels of communication (technical guidelines, radio, posters, brochures etc.) will be used to target specific stakeholders. This will include international platforms such as the upcoming FAO Regional Technical Platform for Africa and the Global Farmer Field School Platform.

2. Supervision and monitoring missions will be organised during project implementation. A framework for gender-sensitive Monitoring & Evaluation (M&E) will be developed before implementation starts to identify relevant indicators and procedure for feedback and reporting. Special emphasis will be laid on targeting the most relevant parameters that can be examined and collected internally. The information collected in the context of M&E will feed into activities for knowledge management, identify and share good practices, identify problems and constraints, and promote the continuous improvement of the project and its contribution to the implementation of national and regional objectives on food security and environmental protection.

3. Throughout the PPG phase, special attention has been given to incorporate lessons learned from past relevant initiatives into this project?s design. In particular, the table below identifies how key lessons learned and recommendations from terminal evaluations have been taken into account.

Table 21. Capitalisation on key lessons learned and recommendations from the terminal evaluations of relevant projects.

Key lessons learned & recommendations	Capitalisation in proposed project

Project ?Renforcer la re?silience communautaire et la se?curite? humaine des communaute?s vulne?rables en milieu urbain gra?ce a? la mise en ?uvre du Cadre de Sendai pour la re?duction des risques de catastrophe 2015-2030? (UNDP/ United Nations Trust Fund for Human Security)[1]	
?When the design of a project and its implementation is conceived and organised in a participatory manner, as is the case with this project, the achievement of its objectives is based on solid foundations: the project is more effective and useful for the direct beneficiaries, and the national and local appropriation of the gains made is easier.?	The whole project is participatory in nature. In-depth community consultations have been conducted during the PPG phase, and communities? priority concerns in terms of resilience building have been incorporated into the projet design. During the implementation phase, most activities will be rely on continued community consultations, so that project support can best fit local needs. This is the case of APFS, development of IGA business plans, development of IWMPs, Listening Clubs etc.
?Because there can be no effective and sustainable strengthening of resilience and human security (?) without taking into account all the priority needs and expectations of the various actors, priority should be given to strengthening their capacity to intervene through technical, financial or material support, and to supporting the livelihoods of vulnerable (?) households.?	This is the purpose of the several capacity-building activities planned under the project (cf. Knowledge-Management Plan, Section 8).
Project ?Alliance Mondiale contre le Changement Climatique? in Mauritania (European Union)***[2]***	
?The functioning of the project and some shortcomings created by the lack of regularity in the organisation of the last meetings showed the relevance of having two annual meetings of the PSC, to ensure the participation of all the structures concerned by climate change and its role in terms of strategic orientations.?	PSC meetings will be held biannually.
?Relevance of the involvement of the Regional Delegates for the Environment and Sustainable Development (DREDD) in the coordination of stakeholders and the animation of a module related to environmental issues and more particularly the manifestations of climate change in their region.?	DREDD delegates will be fully integrated both in project coordination and as beneficiaries of project trainings.

?The actions that have had the best success rate are those that have involved all stakeholders from the design and implementation of the actions (village committees, beneficiary communities, administrative and technical authorities), such as the market gardening perimeter in Zreg Ainou, Leweissi, Djellewar, the Djellewar poultry units, or social cohesion in rival villages such as Noueimiss and Namouss. This approach ensures ownership and sustainability of the project, and group cohesion as an essential factor in the success of the project by avoiding discrimination.?	The whole project is participatory in nature. In-depth community consultations have been conducted during the PPG phase, and communities? priority concerns in terms of resilience building have been incorporated into the projet design. During the implementation phase, most activities will be rely on continued community consultations, so that project support can best fit local needs. This is the case of APFS, development of IGA business plans, development of IWMPs, Listening Clubs etc.
?Importance of women's involvement as a success factor: the actions have enabled them to be empowered, to provide for their primary needs (education, health, nutrition) and to be resilient from a food security perspective in the absence of the head of household.?	Gender-disagregated indicators have been included (cf. Annex A1) and a Gender Action Plan was developed. The gender analyses conducted during the PPG phase (through interviews, SHARP+ survey and desk review) have directly informed the project design.
?Importance of transferring technical knowledge and works to beneficiaries and identifying financial sustainability are conditions for success and sustainability?	The APFS approach will allow to transfer technological knowledge for improved resilience. Financial sustainability will be addressed through Ouptut 2.3, by providing financial training, supporting financially-viable IGAs and establishing revolving funds.
?The integral natural resource management approach, as used in a watershed approach, must be better integrated into local territorial planning?	Integrated watershed planning will be promoted through Component 1, and mainstreamed into local (Communal Development Plans) and national (through Output 3.1) plans.
Recommendation to ?implement measures to strengthen water management and secure the supply of water resources for drinking water and for agro-sylvo-pastoral purposes?	Output 2.2 directly addresses this issue.
Project ?Promoting Sustainable Mini-grids in Mauritanian Provinces Through Hybrid Technologies? (GEF/UNDP)[3]	
?The absence of a steering committee bringing together the key actors identified in the project document has hampered the integration of the project, prevented mutual learning between the strategic and operational components, and led to a lack of capacity to influence the project.?	A PSC will be established for the project.

?Shortcomings in the project document led the project to cut itself off from a capacity to influence gender. While the project's potential in this respect is real, neither the strategic objective, nor the specific results, nor the outputs, nor the indicators at these different levels are gender sensitive, leaving the project without the means to act in this sense.?	Gender-disagregated indicators have been included (cf. Annex A1) and a Gender Action Plan was developed. The gender analyses conducted during the PPG phase (through interviews, SHARP+ survey and desk review) have directly informed the project design.
?Adaptive management and monitoring of the Maghreb?s oases systems? (GEF, FAO)[4]	
?The evaluation highlighted the lack of differentiated analysis on the role of women and men in the management of oasis ecosystems. The project's gender- related indicators could have been improved if this differentiated analysis had been carried out. Indeed, it would have allowed the definition of more relevant actions, allowing for greater involvement of women and youth. (?). In view of the important role women play in the management of oasis ecosystems, and the issues of young people and men?s exodus to cities from oases, specific advocacy actions on these important and widespread issues could have taken place during project implementation.?	Gender-disagregated indicators have been included (cf. Annex A1) and a Gender Action Plan was developed.

4. Significant budget (cf. Annex A2) has been assigned to knowledge-management activities, as summarised in the table below.

Table 22. Knowledge management plan.

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.1.1 Establish community-based water and land-use management groups in each targeted watershed through the use of Community Listening Clubs (CLCs) following the Dimitra Clubs approach	Training reports, solar radios	35,240		x														

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.1.2 Conduct awareness-raising sessions benefiting at least 100 members of community-based water and land-use management groups (25 from each watershed), on human-centric and climate-proof Integrated Watershed Management Planning to enhance resilience and strengthen livelihoods	Awareness-raising session reports	17,240			x													

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.2.1 Establish Watershed Development & Resilience Committees (WDRCs) in the four target watersheds, building on the community-based resource use management groups, to support a participatory an inclusive development of watershed management plans	WDRC terms of reference & quarterly meeting minutes	50,040			x													

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.2.2 Train the members of the WDRCs and undertake participatory assessments of climate vulnerabilities within each of the target watersheds and identify key innovative climate change adaptation practices to enhance resilience in each target watershed	Training reports	26,480			x	x												
1.2.3 Develop human-centric and climate-proof Integrated Watershed Management Plans in each of the target watersheds	IWMPs in the four target watersheds	39,860				x	x											

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.3.1 Undertake capacity-building interventions targeting local decision makers from municipalities, extension services, local representatives of MEDD and other relevant ministries, and community leaders with regards to the best available knowledge and tools to improve the mainstreaming of climate change adaptation and vulnerability considerations into land use planning and related governance schemes to enhance resilience of vulnerable rural communities at watershed level including through the use of VGGT	Training reports	29,860		x	x													

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.3.2 Map out the current gaps in mainstreaming climate sensitivity into the existing local governance schemes and identify entry points to mainstream resilient and adaptive production practices into the CDPs	Gap assessment	8,000		x	x													
1.3.3 Prepare amendments to develop climate-proof CDPs for each of the communes encompassing the target watersheds.	Amendments, workshop reports	22,840				x												
2.1.1 Draft model curricula for agro-sylvo-pastoral activities to be conducted with APFSs	Model curricula	19,580			x													

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.1.2 Train at least 8 APFS master trainers and 100 APFSs facilitators including members from extension services, agriculture and livestock associations, local NGOs, civil society, private veterinarians and producers	Training reports	58,352				x												
2.1.3 Provide training to at least 10,000 agro-sylvo-pastoralists in the target watersheds through 400 APFSs (25 individuals maximum per cohort with at least 50% women) using training curricula adapted to each watershed	Training reports	210,000					x	x	x	x	x	x	x	x	x	x		

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.1.4 Establish effective communication channels between APFSs cohorts through open days, exchange visits and national meetings, as well as through the use of participatory videos, in collaboration with e-agriculture platforms such as Digital Green.	Videos, open day reports	40,000							x	x	x	x	x	x	x	x		
2.2.1 Undertake a study to develop intervention protocols adapted to each target watershed for the mechanical fixation of dunes.	Protocols for dune fixation	12,000			x													

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.2.3 Raise awareness and encourage the protection of plantation areas through physical fencing and human surveillance, and by strengthening livelihoods through income generating activities under Outcome 2.2 to reduce pressure from livestock grazing.	Awareness raising session reports	245,000					x	x	x	x	x	x	x	x				

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.2.4 Undertake a hydrological assessment for the rehabilitation and construction of small hydrological infrastructures (dykes, weirs, sills) in target watersheds to facilitate the replenishment of aquifers, support irrigation of crops and water points for livestock	Hydrological assessments	20,000					x	x										
2.2.6 Train members of the community-based water and land use management groups on basic maintenance operations of the small hydrological infrastructures, and solar-powered irrigation equipment	Training report	10,000									x	x						

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.2.7 Conduct a mapping of erosion hotspots along the banks of selected target watersheds (Tidjikja, Dafort, Barbara) to identify priority intervention areas	Mapping of erosion hotspots & restoration protocol	10,000				x	x											
2.2.9 Conduct a study to develop intervention protocols adapted to each target watershed for the restoration of degraded agro-sylvo-pastoral landscapes	Protocol to restore degraded ASP landscapes	15,000			x	x												

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.2.11 Conduct awareness-raising activities in coordination with local decision-makers and community-based water and land use management groups, with regards to climate vulnerabilities and the ways in which adaptive production practices can enhance resilience and strengthen livelihoods	Awareness-raising material & session reports	5,000						x	x									
2.2.12 Distribute 800 improved cookstoves to reduce the pressure on forests from fuelwood harvesting	Training report on use of improved cookstoves & sustainable fuelwood harvesting	49,800				x	x											

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.3.1 Provide technical and managerial training to local CSOs and CBOs in target watersheds to support the creation of 4 Savings and Loan Associations using FAO?s Caisse de R?silience approach	Training reports on SLA management & financial literacy	16,840					x											

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.3.2 Conduct an analysis along priority agro-sylvo-pastoral value chains to identify key opportunities and challenges to establish inclusive, gender responsive, and climate resilient value chains across the target watersheds with a potential for upscaling nationally in synergy with relevant baseline initiatives	Climate-sensitive value chain analyses	7,240						x	x									

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.3.3 Provide training and coaching to at least 40 potential project holders (out of which at least 20 are women-led) in target watersheds to support them to develop human-centric and climate-proof micro-business plans along priority agro-sylvo-pastoral value chains	Training & coaching reports	16,260							x	x								

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.1.1 Conduct consultation workshops to decision makers from MEDD and relevant stakeholders at national and local levels (including members of the PSC) to identify gaps based on project-delivered climate vulnerability assessments and entry points for enhancing resilience and adaptive practices by improving the policy, regulatory and institutional frameworks	Gap assessment, workshop reports	15,080									x							

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.1.2 Develop and submit amendments to mainstream climate adaptation and resilience into relevant policies and regulatory frameworks for validation by policy makers.	Proposed amendments, workshop reports	7,580										x	x					
3.1.3 Provide training on climate-sensitive budgeting to key institutions to ensure long-term investments in adaptation planning and enable tracking of climate-related expenditures.	Training report	34,580												x	x			

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.2.1 Prepare and publish annual briefs and case studies	Annual briefs and case studies, including at least one that is gender-focused on the project?s accomplishments, experiences and lessons learned (themes may include: lessons learned from the implementation of innovative financing mechanisms, APFSs, Community-based governance schemes of water and land use management at watershed level, and women led cooperatives in priority value chains)	40,860				x	x	x	x	x	x	x	x	x	x	x	x	x

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.2.2 Organise information and knowledge exchange on APFS, including with the Central Africa Field School Network, African Forum For Agricultural Advisory Services, Global FFS Platform, etc.	Webinars, case studies, knowledge exchange mission reports	16,000									x	x	x	x	x	x	x	

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.2.3 Produce at least four grey literature publications and three scientific papers for publication in peer-reviewed, scientific journals (including a scientific protocol for the monitoring of ecological restoration processes (e.g. dune fixation, riverbank stabilisation, restoration of rangelands), the Hand-in-Hand Geospatial Platform for ecological monitoring, etc.)	At least four grey literature publications and three scientific papers	33,848							x	x	x	x	x	x	x	x	x	x

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.2.4 Upload relevant project information and data (incl. GIS) on the Hand-in-Hand Geospatial Platform and the WOCAT database (incl. actual intervention costs).	Relevant information uploaded onto platforms	6,000			x	x	x	x	x	x	x	x	x	x	x	x	x	x

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.2.5 Organize two South-South knowledge-exchange visits (one in Mauritania and one in Sudan) for government, scientific and civil society partners to capitalise on experiences with the GEF/FAO project 10159 ?Resilience of Pastoral and Farming Communities to Climate Change in North Darfur?.	Knowledge-exchange visits, with visit reports	24,000													x			

Knowledge management activities	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.3.1 Conduct a GIS ground-truthing mission in the target watersheds to confirm and/or revise available land-cover layers, with a view to inform the MEL plan.	Ground-truthed land cover layers for the target watersheds	6,490	x															
3.3.2 Co-develop and implement a MEL plan	MEL plan	1,500	x															
3.3.3 Conduct an independent mid-term review and translate the report in French.	Mid-term review, available in French for easier dissemination	35,000									x	x						
3.3.4 Conduct an independent terminal evaluation and translate the report in French.	Terminal evaluation, available in French for easier dissemination	46,702															x	x

[1] Source: Congo Y. 2019. Evaluation finale du projet de renforcement de la re?silience des communaute?s et la se?curite? humaine des communaute?s vulne?rables en milieu urbain

[2] Source: Fabing A., Brandolini G. 2018. Evaluation mi-parcours et finale du projet AMCC Mauritanie

[3] Source: Faye C. 2020. Evaluation finale du projet "promouvoir des mini-r?seaux dans les provinces mauritaniennes ? l?aide de technologies hybrides (MINIRIDS)"

[4] Source : FAO. 2020. Final evaluation of the project ?Adaptive management and monitoring of the Maghreb?s oases systems?. Project Evaluation Series, 07/2020. Rome

9. Monitoring and Evaluation

Describe the budgeted M and E plan

1. Project oversight will be carried out by the PSC, FAO-GEF Coordination Unit and relevant technical units in FAO headquarters. Oversight will ensure that: i) project outputs are produced in accordance with the project results framework and leading to the achievement of project outcomes; ii) project outcomes are leading to the achievement of the project objective; iii) risks are continuously identified and monitored and appropriate mitigation strategies are applied; and iv) agreed project global environmental and adaptation benefits are being delivered.

2. The FAO-GEF Coordination Unit and HQ Technical Units will provide oversight of GEF financed activities, outputs and outcomes largely through the semi-annual project progress reports, annual PIRs, periodic backstopping and annual supervision missions.

3. Project monitoring will be carried out by the PMU. Project performance will be monitored using the project results matrix, including indicators (baseline and targets) and annual work plans and budgets. At project inception, the results matrix will be reviewed to finalise identification of: i) outputs; ii) indicators; and iii) any missing baseline information and targets. A detailed M&E plan, which builds on the results matrix and defines specific requirements for each indicator (data collection methods, frequency, responsibilities for data collection and analysis, etc.) will also be developed during project inception by the M&E Officer appointed at the PMU, and reviewed and approved by the PSC, and FAO.

Table 23. Monitoring & Evaluation plan

M&E activity	Responsible parties	Timeframe	GEF Budget (USD)

PSC meetings including Inception workshop	Project Management Unit (PMU)	Inception workshop within two months of project document signature	USD 14,000.00
Project inception report	National Project Coordinator (NPC)	Within two weeks of inception workshop	None
Annual Work Plan and Budget (AWP/B)	Prepared by NPC with support from the LTO, and the BH	Annual; at the beginning of the project and subsequently, every calendar year	NPC and Agency Fee
Workshop to validate MEL plan	NPC, M&E Officer, LTO, BH	Q1	USD 1,500
Support and supervision visits	LTO, PMU	At least once a year	PMU, Agency Fee and specific activities
	M&E Expert	Targeted M&E support during 2 weeks / year over 3 years	USD 40,800
Project Progress Reports (PPRs)	NPC, M&E Officer, LTO, BH	Every six months	None
Project Implementation Review report (PIR)	Prepared by NPC with PMU inputs, under LTO and BH supervision	Annually in July	None
Co-financing reports	PMU	Annual (with the PIR)	PMU
Mid-term Review	FAO Mauritania Representation office	In the 1st quarter of the 3rd year of the project	USD 35,000

Terminal Evaluation	The BH will be responsible to contact the Regional Evaluation Specialist (RES) within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED.	To be launched 6 months prior to terminal review meeting	USD 46,702
Terminal report	FAO Mauritania Representation office / PMU	At project closure	PMU
Total Budget[1]			**USD 138,002**

4. Specific reports that will be prepared under the M&E program are: i) project inception report; ii) Annual Work Plan and Budget (AWP/B); iii) Project Progress Reports (PPRs); iv) annual Project Implementation Review (PIR); v) technical reports; vi) co-financing reports; and vii) Terminal report. In addition, assessment of the relevant LDCF core indicators (see Annex A1: Project Results Framework) will be required at mid-term and final project evaluation.

5. **Project Inception report**. It is recommended that the PMU prepare a draft project inception report in consultation with the FAO Lead Technical Officer (LTO), the FAO Budget Holder (BH), and other project partners. Elements of this report should be discussed during the project inception workshop and the report subsequently finalised. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan. The draft inception report will be circulated to the PSC for review and comments before its finalization, no later than one month after project start-up. The report should be cleared by the FAO BH, LTO, the FAO-GEF Coordination Unit, and will be uploaded in FAO?s Field Program Management Information System (FPMIS) by the FAO BH.

6. **Results-based Annual Work Plan and Budget (AWP/B)**. The draft of the first AWP/B will be prepared by the PMU in consultation with the joint FAO Project Task Force and reviewed at the project inception workshop. The inception workshop inputs will be incorporated and the PMU will submit a final draft AWP/B within two weeks of the Inception Workshop to the BH. For subsequent AWP/B, the PMU will organise a project progress review and planning meeting for its review. Once comments have been

incorporated, the BH will circulate the AWP/B to the LTO, the FAO-GEF Coordination Unit, for comments/clearance prior to uploading in FPMIS by the BH. The AWP/B must be linked to the project?s Results Framework indicators so that the project?s work is contributing to the achievement of the indicators. The AWP/B should include detailed activities to be implemented to achieve the project outputs and output targets and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B should be approved by the PSC and uploaded on the FPMIS by the FAO BH.

7. **Project Progress Reports (PPR)**: PPRs will be prepared by the PMU based on the systematic monitoring of outcome indicators identified in the project?s Results Framework (Annex A1). The purpose of the PPR is to identify constraints, problems or bottlenecks that impede timely implementation and to take appropriate remedial action in a timely manner. PPRs will also report on projects risks and implementation of the risk mitigation plan. The Budget Holder has the responsibility to coordinate the preparation and finalisation of the PPR, in consultation with the PMU, FAO LTO, and FAO FLO. After LTO, BH, and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.

8. **Annual Project Implementation Review (PIR)**: The PMU (in collaboration with the BH and the LTO) will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the FAO-GEF Coordination Unit Funding Liaison Officer (FLO) for review and approval no later than (check each year with GEF Unit but roughly end June/early July each year). The FAO-GEF Coordination Unit will submit the PIR to the GEF Secretariat and GEF Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. PIRs will be uploaded on the FPMIS by the FAO-GEF Coordination Unit.

9. **Technical reports**: Technical reports will be prepared by national, international consultants and partner organisations under LoAs as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by the PMU to the FAO BH, who will share it with the FAO LTO. The LTO will be responsible for ensuring appropriate technical review and clearance of said report. The BH will upload the final cleared reports onto the FPMIS. Copies of the technical reports will be distributed to project partners and the Project Steering Committee as appropriate.

10. **Co-financing reports**: The FAO BH, with support from the PMU, will be responsible for collecting the required information and reporting on co-financing as indicated in the Project Document/CEO Request. The PMU will compile the information received from the executing partners and transmit it in a timely

manner to the FAO LTO and BH. The report, which covers the period 1 July through 30 June, is to be submitted on or before 31 July and will be incorporated into the annual PIR. The format and tables to report on co-financing can be found in the PIR.

11. **Terminal report**: Within two months before the end date of the project, and one month before the Terminal Evaluation, the PMU will submit a draft Terminal report to the FAO BH, and LTO. The main purpose of the Terminal report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the project, and to provide the donor with information on how the funds were used. Accordingly, the Terminal report is a concise account of the main products, results, conclusions and recommendations of the project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results.

Evaluation provisions

12.

13. A Mid-Term Review (MTR) will be carried out in the 1st quarter of project Year 3. The FAO BH will arrange an independent MTR in consultation with the PSC, PMU, LTO, FAO-GEF Coordination Unit. The MTR will be conducted to review progress and effectiveness of implementation in terms of achieving project outputs, outcomes and objective. The MTR will allow mid-course corrective actions, as needed. It will also provide a systematic analysis of the information on project progress in the achievement of expected results against budget expenditures by referring to the Project Budget (see Annex A2) and the approved AWP/Bs. It will highlight replicable good practices and key issues faced during project implementation and suggest mitigation actions to be discussed by the PSC, LTO, FAO-GEF Coordination Unit.

14. The GEF evaluation policy foresees that all medium and large size projects require a separate terminal evaluation. Such evaluation provides: i) accountability on results, processes, and performance; ii) recommendations to improve the sustainability of the results achieved and iii) lessons learned as an evidence-base for decision-making to be shared with all stakeholders (government, execution agency, other national partners, the GEF and FAO) to improve the performance of future projects. The BH will be responsible to contact the Regional Evaluation Specialist (RES) within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED and will be responsible for quality assurance. Independent external evaluators will conduct the terminal evaluation of the project taking into account the ?GEF Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects.? FAO Office of Evaluation (OED) will provide technical assistance throughout the evaluation process, via the OED Decentralized Evaluation Support team ? in particular, it will also give quality assurance feedback on: selection of the external evaluators, Terms of Reference of the evaluation, draft and final report. OED

will be responsible for the quality assessment of the terminal evaluation report, including the GEF ratings. After the completion of the terminal evaluation, the BH will be responsible to prepare the management response to the evaluation within four weeks and share it with national partners, GEF OFP, OED and the FAO-GEF CU.

Disclosure

15. The project will ensure transparency in the preparation, conduct, reporting and evaluation of its activities. This includes full disclosure of all non-confidential information, and consultation with major groups and representatives of local communities. The disclosure of information shall be ensured through posting on websites and dissemination of findings via knowledge products and events. Project reports will be broadly and freely shared, and findings and lessons learned made available.

---

[1] This budget only covers formal M&E requirements. Additional M&E activities (e.g. final TAPE assessment, implementation of B-INTACT tools) will be conduced and are budgeted under Component 4. The detailed budget in Annex A2 also includes provision for the recruitment of an M&E Officer.

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)?

1. The proposed project will directly benefit approximately 100,000 rural people. The livelihoods of these beneficiaries are currently challenged due in large part to the inability to address the challenges posed by climate change, which compound the degradation processes at play in the target watersheds. In this context, the LDCF funds will be invested to reverse this trend by providing local communities with the opportunities to access knowledge, information, capacity, funding and experience to adopt improved practices. These practices will result in improved ecosystem serices, but also in increased standards of living, food security and enhanced climate resilience. This will include providing beneficiaries with access to greater profitability through sustained production methods and ability to better derive economic gains from existing and new markets.

-

2. A human rights-based approach has been adopted for the project design, and this includes the right to Decent Rural Employment. This concept will guide the activities implemented under Component 2 of the proposed project. It will particularly promote employment creation and enterprise development, while aligning to the other dimensions of Decent Rural Employment, including:

? governance and social dialogue (support participation of rural poor in local decision-making and governance mechanisms empowering women and youths in particular);

? social protection (promote safer technology for small-scale and commercial agriculture in extension support programmes); and

? standards and rights at work (support socially responsible agricultural production, provide access to tools to limit hard working conditions).

3. In terms of governance, the watershed-level mechanisms that will be established will allow to adopt more effective and efficient solution to landscape management, including regarding degradation issues.

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
	Medium/Moderate		

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.

Section B: Environmental and Social risks from the project ? ESM Plan

Risk identified	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action
Transfer of seeds and/or planting materials for cultivation	Moderate	Seeds and/or planting materials provided as part of the innovative practices to enhance resilience and strenghthen livelihoods under Component 2, will be from endemic and locally-adapted crops and varieties that are accepted by farmers and consumers and it will be ensured that the seeds and planting materials are free from pests and diseases according to agreed norms, especially the IPPC	% of endemic and locally adapted seeds and planting materials used in agro-sylvo-pastoral demonstration practices across the 4 target waterhseds in south eastern Mauritania	NA
Reforestation intervention in the target demonstration sites	Moderate	Potential project interventions may include the establishment of tree nurseries and tree belts to shelter food gardens from dust storms. All the recommendations under moderate risk will be followed to mitigate risk. To do so, the project will adhere to existing national forest policies, forest programmes or equivalent strategies, the project will also observe principles 9, 10, 11 and 12 of the Voluntary Guidelines on Planted Forests.	% of agro-sylvo-pastoral interventions in line with principles 9, 10, 11 and 12 of the Voluntary Guidelines on Planted Forests	NA

Participation of women and youth to value chains interventions	Moderate	The project will undertake specific measures, as highlighted in the Gender Action Plan, to empower women, youth and the most vulnerable social sub-groups to strenghthen livelihoods of rural populations at watershed level through the adoption of innovations and adaptive practices along local agro-sylvo-pastoral value chains.	Percentage of women and youth benefiting from value chain investments and interventions	NA
Community participation into drafting of plans, policies and regulations	Low	The project will take the necessary measures to enable a wider participation of all stakeholders, including women and youth groups as per the Gender Action Plan, in community-based planning processes in charge of land and water use management	Percentage of planning, policy documents and regulations developed with the participation of local communities, including women and youth groups	NA

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
MAU038LDF (South East) Environmental and Social Risk Certification	**CEO Endorsement ESS**	

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).

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Objective: Strengthen the resilience of vulnerable rural populations by improving agriculture and livestock sector planning and the application of innovative practices at watershed level in Mauritania.							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(i) Number of vulnerable agro-sylvo-pastoralists from rural communities in target watersheds showing an enhanced resilience and adopting adaptive practices	(i) 0. The total population of target watersheds[2] is approx. 109,000. The total population of moughataas (departments) within which the target watersheds are located[3] is approx. 192,000 (52% women). Some of the beneficiary population will be located outside of the target watersheds but within these moughataas.	(i) 40,000 (50% women) vulnerable agro-sylvo-pastoralists from rural communities in target watersheds showing an enhanced resilience and adopting adaptive practices	(i) 100,000 (50% women) vulnerable agro-sylvo-pastoralists from rural communities in target watersheds showing an enhanced resilience and adopting adaptive practices	(i) Activity reports, workshop reports, procurement contracts and ToRs, expert reports, communities? interviews.	The demand for project interventions witnessed during the PPG phase remains in line with national priorities throughout the implementation phase and materializes through high enrolment in project activities.	M&E team with assistance of FAO HQ experts as required, independent evaluators, contractors, execution partners
Component 1: Adaptation and resilience practices secured through community-centred watershed management planning and participatory governance schemes							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 1: Agro-sylvo-pastoral producers are cooperatively and effectively managing shared resources using an integrated watershed-management approach to address climate change impacts and build resilience at watershed level	(ii) Number of multi-stakeholder Watershed Development & Resilience Committees (WDRCs) established and supported to mainstream climate adaptation and resilience practices for sustainable resource management at watershed level	No such committees exist at the watershed level	4 WDRCs established and supported, with at least 40 % of women in meetings supported by the project	4 WDRCs established and supported, with at least 40 % of women in meetings supported by the project	Activity reports, workshop reports, procurement contracts and ToRs, expert reports.	Local institutions involved in natural resource management acknowledge the necessity to increase their capacity and engage with project supporting activities accordingly. The government in place supports the decentralisation process throughout and beyond the implementation phase.	M&E team, independent evaluators, contractors, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(iii) Number of climate-proof Integrated Watershed Management Plans (IWMPs), collectively developed and/or revised to better integrate climate change adaptation and vulnerability considerations to enhance the resilience of vulnerable rural communities	No IWMPs exist in the target watersheds. Most target communes have Communes Development Plans (CDPs). However, these often do not fully take into account climate change adaptation and vulnerability considerations.	At least 4 Integrated Watershed Management Plans (IWMPs), collectively developed and/or revised, and 4 CDPs reviewed, to better integrate climate change adaptation and vulnerability considerations to enhance resilience of vulnerable rural communities	At least 4 Integrated Watershed Management Plans (IWMPs), collectively developed and/or revised, and 9 CDPs[4] reviewed, to better integrate climate change adaptation and vulnerability considerations to enhance resilience of vulnerable rural communities	Established IWMPs, review report of CDPs, revised CDPs, activity reports, workshop reports, procurement contracts and ToRs, expert reports.	Municipalities are willing to proceed with the revision of planning documents. The government in place supports the decentralization process throughout and beyond the implementation phase.	

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
-	(iv) Number of local decision makers from municipalities, extension services and community leaders trained on innovative climate change adaptation practices and using VGGT	0 local decision makers from municipalities, extension services and community leaders trained on innovative climate change adaptation practices and using VGGT in target watersheds	40 (50% women) local decision makers from municipalities, extension services and community leaders trained on innovative climate change adaptation practices and using VGGT in target watersheds	80 (50% women) local decision makers from municipalities[5], extension services and community leaders trained on innovative climate change adaptation practices and using VGGT in target watersheds	Surveys, project monitoring reports	Strong buy-in from local decision makers to mainstream resilience-enhancing-practices into local land-use planning and management	

Output.1.1: Community-based governance structures established and operationalised to mainstream climate resilience into watershed governance, using an integrated watershed management approach

Output 1.2: Climate-proof, integrated watershed management plans developped and implemented at watershed level to enhance resilience of vulnerable rural communities

Output 1.3: Human and institutional capacity and local knowledge strenghtened to strategically address climate vulnerabilities and enhance resilience at watershed level using adaptive innovations, strategic planning and monitoring

Component 2: Climate-sensitive practices and innovations applied to support the uptake of resilience measures by vulnerable communities and promote sustainable use of resources in watershed ecosystems

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 2: Agro-sylvo-pastoral producers are using innovative solutions and climate coping practices to enhance climate resilience and resource sustainability at watershed level	(v) Hectares of target landscapes at watershed level including agricultural and pastoral lands, dunes and forests restored and demonstrating an enhanced resilience to climate change	0 ha of target landscapes at watershed level including agricultural and pastoral lands, dunes and forests restored and demonstrating an enhance resilience to climate change	20,000 ha of target landscapes at watershed level including agricultural and pastoral lands, dunes and forests restored and demonstrating an enhance resilience to climate including: 100 ha of dunes stabilised through biological and mechanical fixation to halt desertification 32,250 ha of rangeland and forested areas 3,500 ha of arable land 4 hydrological infrastructures (dykes, weirs, sills)	71,500 ha of target landscapes at watershed level including agricultural and pastoral lands, dunes and forests restored and demonstrating an enhance resilience to climate change including: 200 ha of dunes stabilised through biological and mechanical fixation to halt desertification 64,500 ha of rangeland and forested areas 7,000 ha of arable land 15 hydrological	Project monitoring reports, GIS monitoring, field monitoring. As relevant, the Monitoring, Evaluation and Learning Plan to be developed under Output 3.3 may include the monitoring of SDG Indicator 15.3.1, namely ?proportion of land that is degraded over total land area?. The possibility to do so will depend on the quality of GIS data that will be acquired through the inception mission tasked to ground-truth land-use data. Tools like Trends.Earth[6] would then be used to track progress towards SDG Indicator	Local communities grasp the opportunities offered by SLM and climate adaptation practices, and are willing to invest the required time and energy to make their livelihoods more resilient. No significant barriers to the uptake of best land management and climate-smart agricultural practices remain thanks to the project interventions.	M&E team, independent evaluators, contractors, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(vi) Number of agro-sylvo-pastoralists trained in APFS cohorts that report improved livelihoods and household nutrition levels as a result of adopting resilient and adaptive practices	0 agro-sylvo-pastoralists reporting improved livelihoods and household nutrition levels as a result of as a result of adopting resilient and adaptive practices	3,000 (50% women) agro-sylvo-pastoralists reporting improved livelihoods and household nutrition levels as a result of as a result of adopting resilient and adaptive practices	10,000 (50% women) agro-sylvo-pastoralists reporting improved livelihoods and household nutrition levels as a result of as a result of adopting resilient and adaptive practices	Terminal SHARP survey, activity reports	Local communities show interest in participating to APFS sessions Strong uptake of best practices disseminated through APFS Best APFS practices result in improved livelihoods and nutrition levels	

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(vii) Number of savings and loan associations in target watersheds established and/or supported through FAO?s Caisses de R?silience (CdR) approach	0 savings and loan associations in target watersheds established and/or supported through FAO?s CdR approach	At least 4 savings and loan associations in target watersheds established and/or supported through FAO?s CdR approach	At least 4 savings and loan associations in target watersheds established and/or supported through FAO?s CdR approach, and functioning as revolving funds with demonstrated funding of second generation of loans	Activity reports, associations status, surveys, ledgers	There is interest in taking loans from savings & loans associations from local populations	
	(viii) Number of micro-business plans developed in priority agro-sylvo-pastoral value chains to support resilience and livelihoods	0 micro-business plans developed in priority agro-sylvo-pastoral value chains to support resilience and livelihoods	20 micro-business plans developed in priority agro-sylvo-pastoral value chains to support resilience and livelihoods	40 micro-business plans developed in priority agro-sylvo-pastoral value chains to support resilience and livelihoods	Activity reports, business plans	Local communities show interest in developing commercial business plans and implementing them	

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(ix) Number of project holders from rural communities in target watersheds supported through climate-proof income generating activities	0 project holders from rural communities in target watersheds supported through climate-proof income generating activities	10 project holders from rural communities in target watersheds supported through climate-proof income generating activities	20 project holders from rural communities in target watersheds supported through climate-proof income generating activities	Activity reports, ledgers, surveys		
Output 2.1: Knowledge, adaptive practices and innovations mainstreamed through Agro-Pastoral Field Schools Output 2.2: Productive landscapes restored and ecosystems functionality supported at watershed level to enhance resilience Output 2.3: Investments in climate-resilient and income-generating activities in target watersheds catalysed through innovative financial mechanisms							
Component 3: Lessons learned are captured, mainstreamed and upscaled using adapted M&E and KM approaches							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 3: Climate-resilient and adaptive practices are mainstreamed into decision-making processes and lessons learned are widely disseminated	(x) Number of government entities allocating technical and financial resources to sustain resilient production practices in target watersheds post-project	0 government entities allocating technical and financial resources to sustain resilient production practices in target watersheds post-project	0 government entities allocating technical and financial resources to sustain resilient production practices in target watersheds post-project	At least 3 government entities (Ministry of Environment and Sustainable Development, Ministry of Agriculture and Rural Development, Ministry of Livestock) allocating technical and financial resources to sustain resilient production practices in target watersheds post-project	Strategic planning documents ? including budgets ? amended and validated	Strong buy-in from national and local Gov. entities to mainstream resilience practices into strategic land-use planning and management	M&E team, independent evaluators, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(xi) Number of knowledge products prepared and disseminated to share lessons learned on resilient and adaptive production practices (including model integrated watershed management plans)	0 knowledge products prepared and disseminated to share lessons learned on resilient and adaptive production practices (including model integrated watershed management plans)	5 knowledge-products prepared and disseminated to share lessons learned on resilient and adaptive production practices	15 knowledge-products prepared and disseminated to share lessons learned on resilient and adaptive production practices	Scientific protocol, case studies, grey literature publications, scientific publications, uploads on knowledge-sharing platforms	Willingness to transparently share knowledge on project interventions, including potential challenges faced during project interventions as well as actual costs of interventions	M&E team, independent evaluators

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(xii) Hectares of target landscapes at watershed level monitored using a KM portal as part of the MEDD website to track results and showcase resilient and adaptive management practices	0 ha of target landscapes at watershed level monitored using a KM portal as part of the MEDD website to track results and showcase resilient and adaptive management practices	20,000 ha of target landscapes at watershed level monitored using a KM portal as part of the MEDD website to track results and showcase resilient and adaptive management practices	71,500 ha of target landscapes at watershed level monitored using a KM portal as part of the MEDD website to track results and showcase resilient and adaptive management practices	Project monitoring reports, GIS monitoring, field monitoring.	Strong buy-in from national and local governmental entities to mainstream resilience practices into strategic land use planning and management Strong ownership among local communities and beneficiaries of project interventions to enhance resilience and strengthen livelihoods	M&E team, independent evaluators, MEDD
Output 3.1: Project results mainstreamed to enhance resilience and adaptive policies Output 3.2: Project lessons captured and knowledge managed & disseminated Output 3.3: Effective Monitoring, Evaluation and Learning (MEL) implemented							

[1] Please note that output based indicators are not mandatory as long as the targets for each output are well defined.

[2] Source: PPG mission report.

[3] Source: Mauritania General Census 2013 (latest data available).

[4] Namely for the communes of Tidjikja and Rachid (Tidjikja watershed), Radhi and Tamchekett (Barbara watershed), Kiffa and Nouamleyne (Meisah watershed), Tektak?, Aweinatt and Dafort (Dafort watershed).

[5] 20 decision-makers from each target watershed

[6] More information on Trends.Earth can be found here.

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).

STAP Comments

#	Comment	Response
1	STAP recommends that the project developers establish clear relationships between climate stresses, environmental degradation, and socio-economic stresses, to assess the character of the threat being addressed. In the current project iteration, it is difficult to understand the nature of the threats.	This has been further developed in the project document, based on the Climate Risk Assessment that was conducted during the PPG phase (cf. Annex M).
2	STAP recommends developing a theory of change to establish the pathways of change necessary to reach the project objective. Characterizing the social ecological systems will be an important part of organizing the causal logic of the project, including identifying interactions (e.g. feedback loops) and interventions between the three variables discussed above.	A Theory of Change has been developed and is presented in the Alternative Scenario section.

3	The connections between the climate stresses (temperature increase, declining annual precipitation, significant variability), the environmental impacts of these stresses (desertification, disappearing waterways, soil degradation, increased flooding), and other socio-economic stresses (increasingly sendentarized agriculture, changing herd composition) are not clearly connected. While the PIF notes that these interact with one another in ways that force local communities to alter traditional livestock production methods, without establishing clear relationships between these three areas, it is difficult to assess the character of the threat being addressed by this project.	Please see response to Comment 1.

4	The climate stresses are substantiated by data and references. The environmental impacts and socio-economic factors are not. Barrier 1 is well-described, but the claims about conflict assume that environmental stress will inevitably lead to conflict. The literature on environmental security, and on climate change and conflict specifically, notes that such a relationship is not inevitable, and that stress can also lead to cooperation. The following resources can be useful to the project developers when designing the project, and considering the causal links between environmental stress and conflict: Adger, W.N., Pulhin, J.M., Barnett, J., Dabelko, G.D.G., Hovelsrud, G.K.G., Levy, M., Oswald Spring, U., Vogel, C.H., Spring, U?.O., Vogel, C.H., 2014. Human Security, in: Field, C.B., Barros, V.R., Dokken, D.J., Mach, K.J., Mastrandrea, M.D., Bilir, T.E., Chatterjee, M., Ebi, K.L., Estrada, Y.O., Genova, R.C., Girma, B., Kissel, E.S., Levy, A.N., MacCracken, S., Mastrandrea, P.R., White, L.L. (Eds.), Climate Change 2014: Impacts, Adaptation, and Vulnerability. Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, pp. 755?791. Tubi, A., Feitelson, E., 2016. Drought and cooperation in a conflict prone area: Bedouin herders and Jewish farmers in Israel?s northern Negev, 1957?1963. Polit. Geogr. 51, 30?42. Gemenne, F., Barnett, J., Adger, W.N., Dabelko, G.D., 2014. Climate and security: Evidence, emerging risks, and a new agenda. Clim. Change 123, 1?9. doi:10.1007/s10584-014-1074-7 Salehyan, I., 2014. Climate change and conflict: making sense of disparate findings. Polit. Geogr. 43, 1?5.	Please see response to Comment 1. As mentioned in the ?Changes from the PIF? section, the project has been defocused from conflict resolution, as extensive consultations conducted during the PPG phase have shown that conflicts are not as prevalent an issue in the target areas as understood during PIF preparation. However, the establishment of Dimitra Clubs will nevertheless help create favourable conditions for the resolution of potential conflicts. The suggested references are well-noted and were consulted during the PPG phase, thank you. They will also be of valuable use for future relevant projects.

5	The baseline identifies three critical institutions, seven laws, and participation in four multi-country projects. However, none of these are presented in a manner that allows for the quantification of project benefits. The institutional framework and laws and policies are not connected to the climate change, broader environmental, or socioeconomic data to establish a baseline scenario for adaptation. STAP suggests working the climate, environmental, and socioeconomic data into the baseline scenario. The PIF also presents four baseline projects, which it will build on. STAP recommends describing in further detail how the baseline projects will contribute to scaling out lessons, and generating data (if applicable). During the project design, STAP recommends describing the methodology that will be used to collect data and monitor the project?s progress.	Please see the baseline section that has been considerably expanded from the PIF. Coordination with baseline projects has been further described, including in the Additional cost reasoning section as well Section 7. Key lessons learned from relevant projects have also been explicitly accounted for in Table 21. M&E arrangements for the projects are outlined in Section 9. A MEL plan will be developed through a participatory process at project inception (Activity 3.3.2). In terms of data acquisition, a GIS ground-truthing mission will be conducted in the target watersheds to confirm and/or revise available land-cover layers, with a view to inform the MEL plan (Activity 3.3.1).
6	The project theory of change appears to be: by providing innovative tools to manage risk, the project will strengthen the ability of vulnerable communities to identify, plan for, and implement innovations to address emerging climate challenges. This will produce increased resilience and improve food security and nutritional outcomes. STAP suggests writing a theory of change narrative to clarify the connections between activities and outcomes.	Please see the Alternative Scenario section and description of project outcomes & outputs.
7	Component 3: STAP recommends refining the logic of this component by describing more clearly the connections between the outputs and outcomes. Furthermore, the project could use a theory of change, where this component can be linked to the other activities.	Please see response above and revised structure of Component 3.
8	The mechanisms of change are plausible, but the underlying assumptions about the barriers to change that this project will overcome, and the ways in which these activities will overcome them, are not clearly informed. STAP suggests writing a theory of change narrative to clarify these mechanisms and assumptions.	Please see the Alternative Scenario section and description of project outcomes & outputs.

9	It is difficult to assess the plausibility of the scale of adaptation benefits, as these are not clearly articulated in the PIF.	Please see revised Alternative Scenario section.
10	STAP recommends describing the adaptation benefits in further detail. It would be valuable to add the following information when detailing the adaptation benefits: What is the likely business as usual development for the targeted sector, in the absence of climate change? What are the climate change vulnerabilities? What are the specific adaptation activities to be implemented to increase the climate resilience of the baseline, or to contribute to the business as usual development activity?	Please see revised Baseline & Alternative Scenario sections.
11	When community mapping is conducted and resource use planning undertaken, STAP recommends describing the actors' roles in relation to how they will contribute (individually and collectively) to achieving the adaptation outcomes.	This approach will be followed throughout the implementation of Component 1, focused on the participatory management and planning of resources use in the target watersheds.
12	However, the PIF does not note any gender- specific climate- or environmentally-related risks.	Please see the added Gender analysis (Section 3).
13	It appears that women will have some challenges accessing the benefits of this project, given the PIF mention of their limited access to services and assistance, but the character of these limitations is not clear.	Please see the added Gender analysis (Section 3) and SHARP+ study (Annex O).
14	There is some confusion in the probability ranking for climate risk	Please see revised Risk table.
15	The project does not mention social stress as a risk, even though it has a conflict mitigation component	Please see response to Comment 4 above.
16	The PIF does not discuss how the project?s objectives and outputs will be affected by climate risk. It also does not assess the sensitivity of the project to climate change and its impacts.	Please see revised Risk table.

17	The knowledge management approach is unclear. STAP suggests developing a clear knowledge approach, which ties to the learning from monitoring the theory of change.	Please see revised Component 3 and Knowledge Management section.

Council Comments (Germany)

#	Comments	Responses
1	Synergies with existing projects: Germany appreciates the goal to strengthen the resilience of vulnerable rural populations. It shares that objective with the recently completed EU funded Institutional Strengthening Programme for Agro-Pastoral Resilience in Mauritania (RIMRAP). Germany suggest exploring synergies and prevent duplication of work.	Consultations were held with the EU office in Mauritania during the PPG phase, and complementarity with the RIMRAP project was discussed. The two projects have two wilayas in common, namely Guidimakha and Assaba (as interventions in Hodh el Gharbi were terminated under RIMRAP). There will be no duplication of efforts as the target communities are not the same. Furthermore, the LDCF project will be able to build on a number of achievements and lessons learned from RIMRAP, including : i) the repertoire of best adaptation practices put together by RIMRAP based on local knowledge; ii) lessons learned from the development of the ?resilience annexes? added to Plans de D?veloppement Communaux; and iii) lessons learned from the development of AGLCs in Assaba. Specific consultations will be sought with the EU team in Mauritania when relevant activities are about to be launched under the LDCF project to benefit from detailed input and feedback, including when drafting ToRs.

2	Beneficiaries: Germany appreciates the objective to enhance pastoral farming producers? resilience. However, throughout the PIF different groups are identified as beneficiaries in an inconsistent manner. As a result, it remains unclear whether the project targets the private sector as early-stage businesses, small-scale farmers, or both. Furthermore, if businesses are to be targeted Germany suggests that the baseline should provide an overview of agro-pastoral businesses in the target regions, the barriers they face to implement climate-resilient practices and how the project will overcome these.	This has been clarified in the project document: while smallholders will benefit from APFS training under Output 2.1, Output 2.3 will be targeted at any stakeholder (either existing, early-stage businesses or new entrepreneurs, including farmers) who is interested in developing a climate-resilient, small-scale business plan. The criteria to select business plans that will be supported will be collectively discussed and approved.
3	Indicators: Germany appreciates the ambitious target of the proposal. However, based on the experiences of RIMRAP, meaningful progress on the listed indicators within the timeframe seems challenging. Germany suggests revisiting the indicators.	The indicators have been revamped based on the refined intervention strategy. The ambitious target in terms of beneficiaries is due to the great potential of APFS to disseminate best practices even beyond the circle of direct trainees (see Output 2.1). This has been experienced on many occasions by FAO through APFS programmes.
4	Project rationale: Germany appreciates the promotion of a watershed approach to develop resilient land use management plans as an innovation. However, Germany suggests analysing and describe its adaptation benefits more thoroughly.	The watershed approach and its expected benefits has been more thoroughly explained throughout the intervention strategy.
5	Innovative financial tools: Germany appreciates the utilisation of innovative financial tools. Output 2.2 indicates the promotion of venture capital to help project beneficiaries implementing innovative adaptation technologies. Germany suggests clarifying what type of venture capital will be promoted (i.e. technical or financial support). ?Caisse de Resilience? and micro-credits are mentioned, however, further specifications such as beneficiaries and selection processes are required. Germany suggests considering using best practice methods rather than selection on a voluntary basis as the latter may be insufficient.	Please see the proposed interventions under Output 2.3.

6	Project sustainability: Germany appreciates the projects objectives. Unfortunately, it remains unclear how the project?s results will be sustained beyond its lifetime, in particular the proposed adaptation technologies (i.e. by selecting low-cost technologies). Section 1.4 indicates that support for processing and marketing will be provided; yet this is not described under output 2.2. Germany suggests adding a description under Output 2.2.	Please see the revised Sustainability section.
7	Sharing knowledge: Germany appreciates that pathways to share knowledge within Mauritania have been identified and suggests considering sharing lessons learned within the region. This is of particular relevance as FAO is using similar approaches in other countries.	Please see the revised Knowledge management section as well Component 3 (esp. Output 3.2) activities.
8	Germany would also like to emphasize that the threat of terrorism is especially given in Hodh el Gharbi and therefore implementing a ?do no harm? approach? as well as close cooperation with security agencies are recommended.	As of November 2021, no significant terrorist risk has been identified that would hamper project implementation in the target watershed of Hodh el Gharbi. However, the situation will be closely monitored throughout project implementation; as suggested, cooperation with security agencies will be systematically sought to ensure the safety of project stakeholders as well as for the early identification of risk mitigation measures as required.

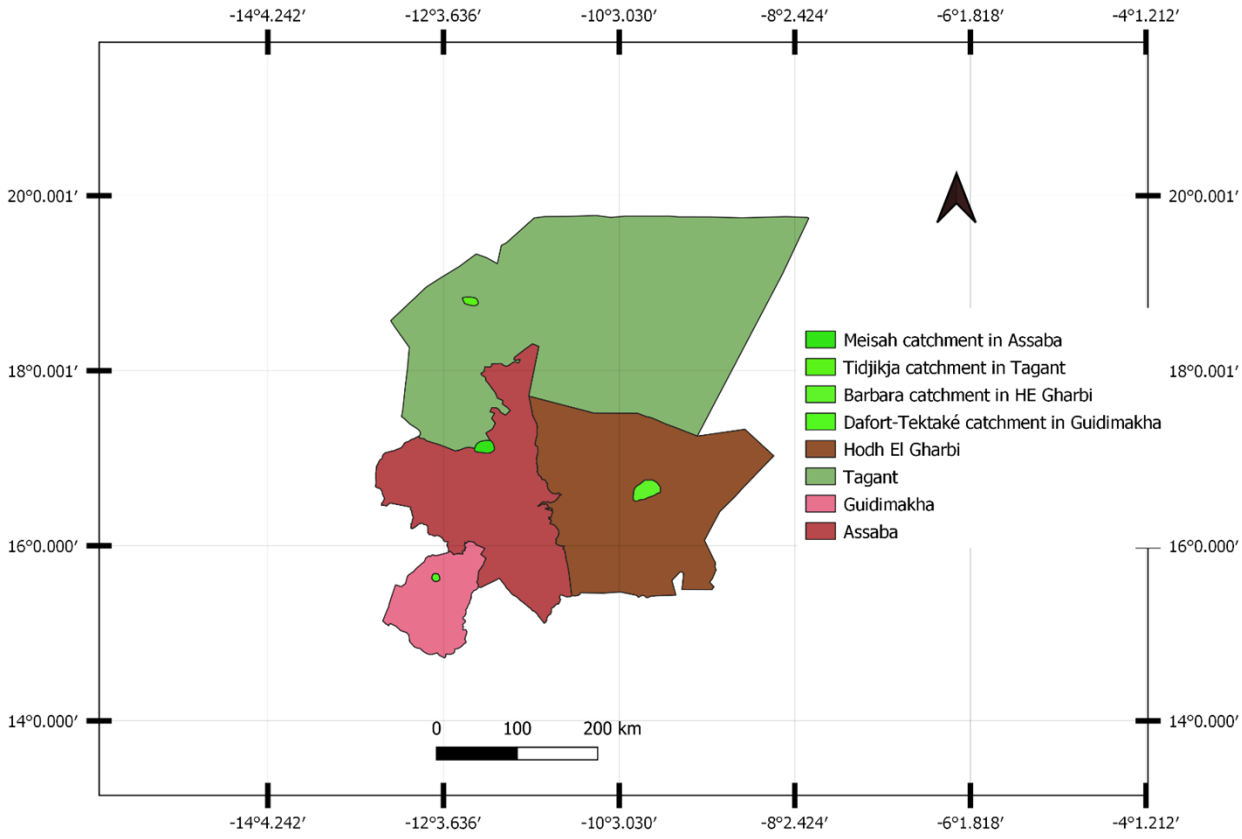
ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

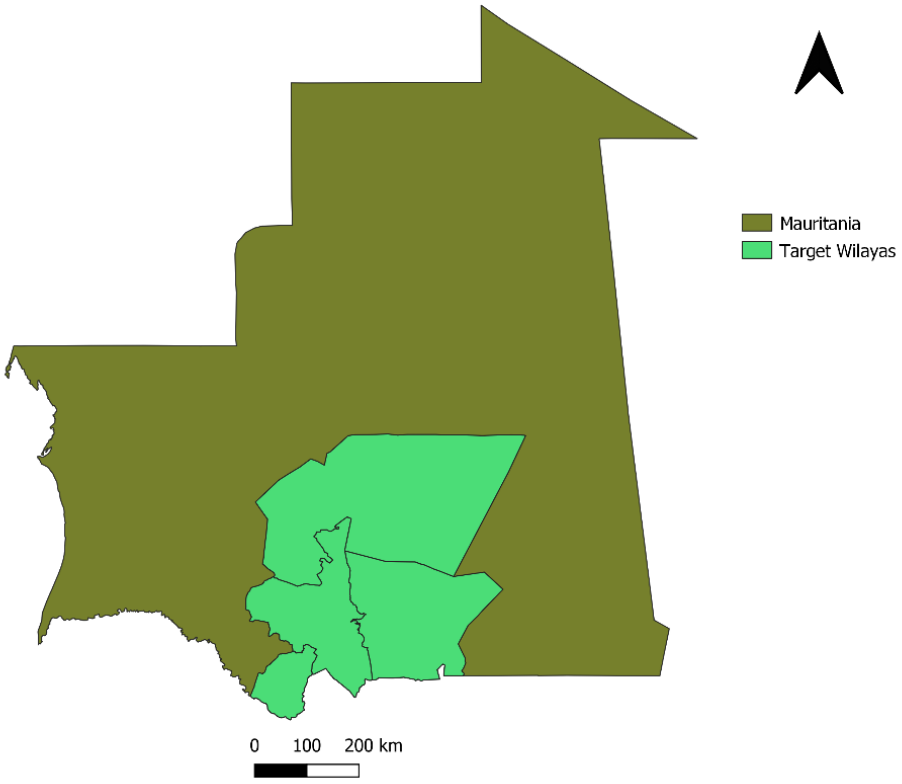
PPG Grant Approved at PIF: 150,000 SYMBOL: GCP /MAU/039/LDF	
Project Preparation Activities	GETF/LDCF/SCCF Amount ($)

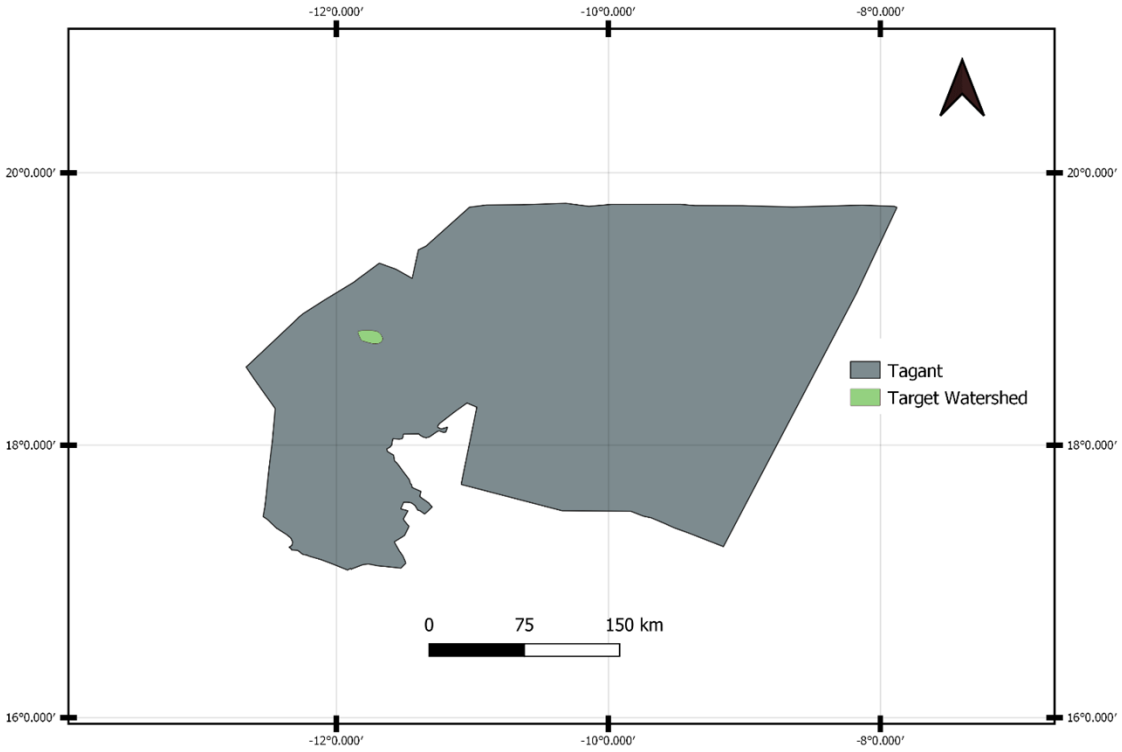
Implemented	Budgeted Amount	Amount Spent Todate	Amount Committed
(5011) Salaries Professional	7,142	0	7,142
(5013) Consultants	67,200	30,746	36,454
(5014) Contracts	23,658	10,355	13,303
(5021) Travel	27,000	3,100	23,900
(5023) Training	25,000	2,636	22,364
Total	150,000	46,837	103,163

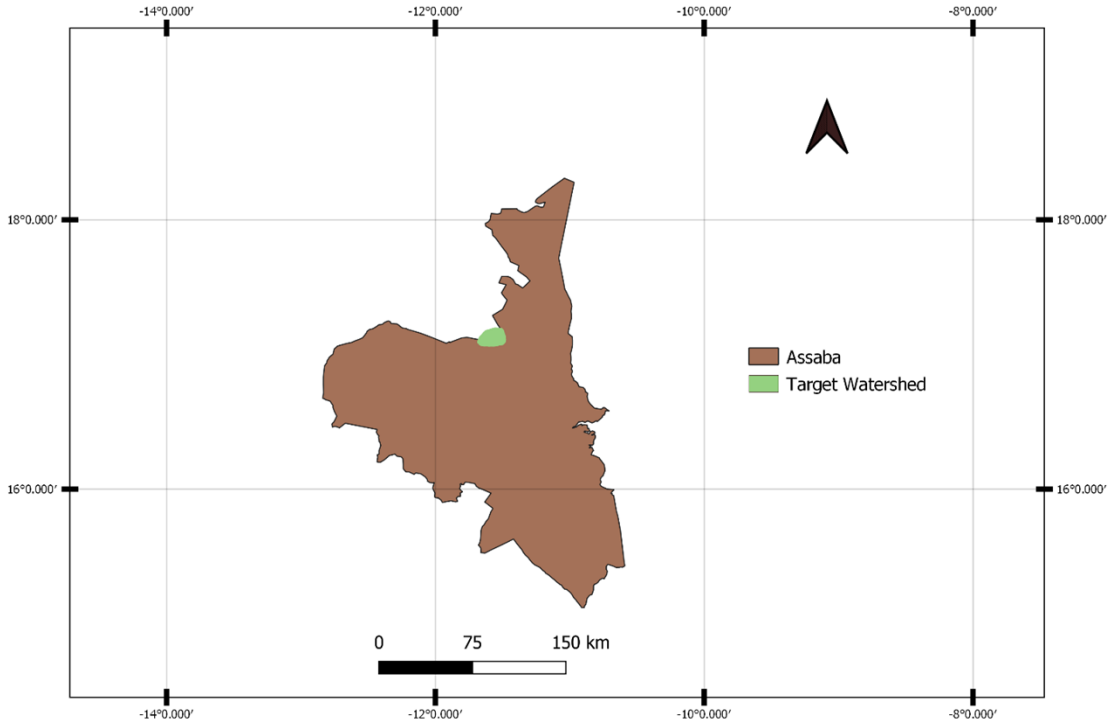
ANNEX D: Project Map(s) and Coordinates

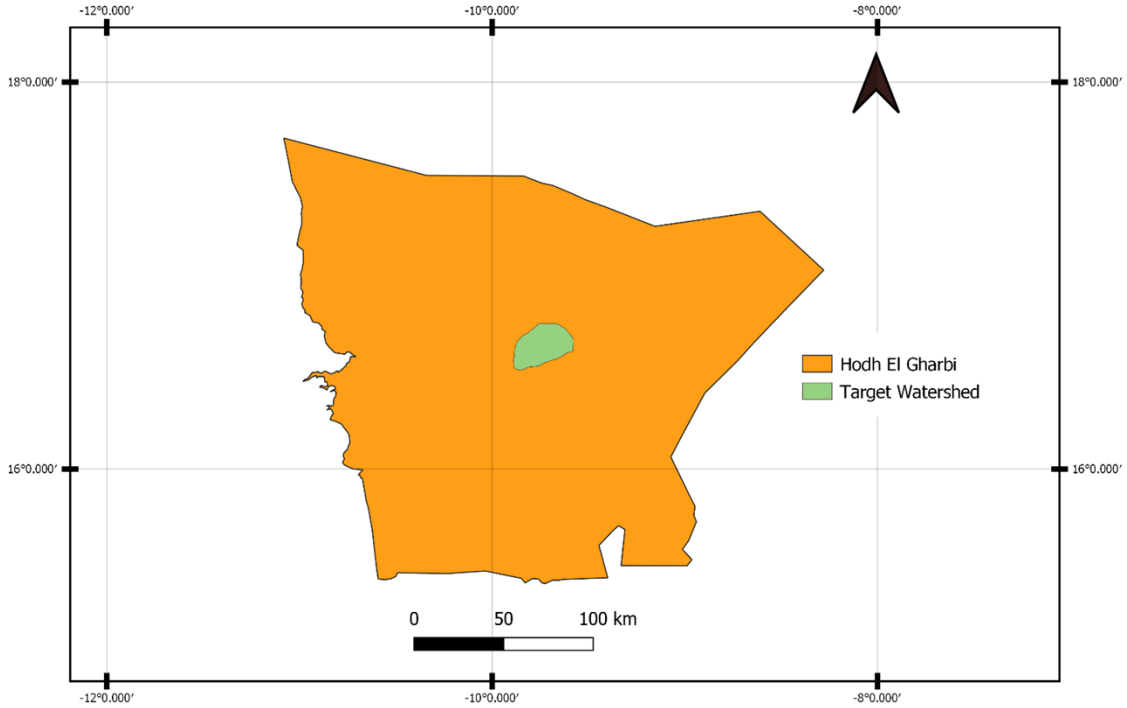
Please attach the geographical location of the project area, if possible.

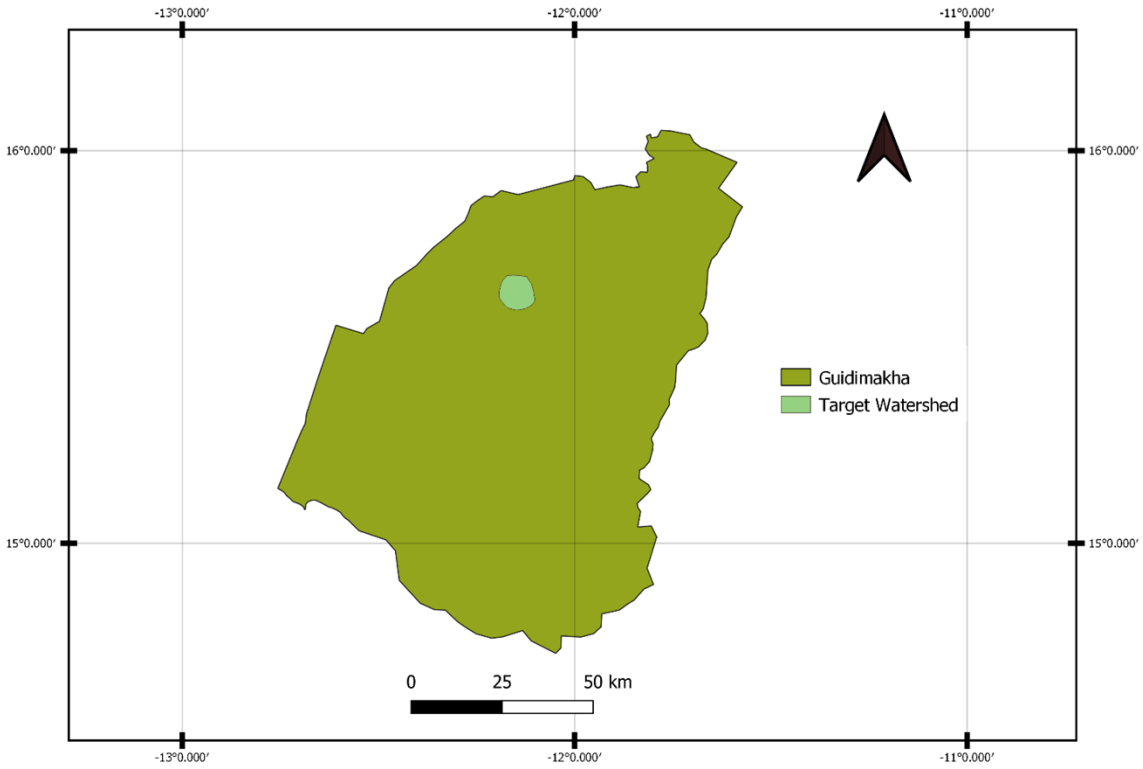



Mauritania
Target Wilayas
0
100
200 km


-12°0.000′
-10°0.000′
-8°0.000′
20°0.000′
18°0.000′
16°0.000′
Tagant
Target Watershed
0
75
150 km


-14°0.000′
-12°0.000′
-10°0.000′
-8°0.000′
18°0.000′
16°0.000′
Assaba
Target Watershed
0
75
150 km


-12°0.000′
-10°0.000′
-8°0.000′
18°0.000′
16°0.000′
Hodh El Gharbi
Target Watershed
0
50
100 km



ANNEX E: Project Budget Table

Please attach a project budget table.

FAO Cost Categories	Unit	No. of units	Unit cost	GEF	Component 1 Total	Component 2 Total	Component 3 Total	M&E	PMC	GEF	MEDD/DDD	Other Contractual Partners	FAO Managed	Total GEF
5011 Salaries professionals														
					0	0	0			0	0			0
5011 Sub-total salaries professionals					0	0	0	0	0	0	0			0
5012 GS Salaries														
					0	0	0			0	0			0
5012 Sub-total GS salaries					0	0	0	0	0	0	0			0
5013 Consultants														
International APFS expert(s)	Day	30	500	15,000.00	0	15,000	0			15,000	15,000			15000
International climate policy expert	Day	15	500	7,500.00	0	0	7,500			7,500	7,500			7500
International climate-sensitive budgeting expert	Day	45	500	22,500.00	0	0	22,500			22,500	22,500			22500
Chief Technical Advisor	Month	48	2000	96,000.00	24,000	48,000	24,000			96,000	96,000			96000
Sub-total international Consultants				**141,000.00**	**24,000.00**	**63,000.00**	**54,000.00**	**0.00**	**0.00**	**141,000.00**	**141,000.00**	**0.00**	**0.00**	**141,000.00**
National Project Coordinator	Month	48	1,450	69,600.00	0	0	0	0	69,600	69,600	69,600			69600
Administrative and financial officer	Month	48	1150	55,200.00	0	0	0	0	55,200	55,200	55,200			55200
Integrated watershed governance national expert	Month	22	2000	44,000.00	44,000	0	0			44,000	44,000			44000
Climate change adaptation national expert	Month	12	2000	24,000.00	24,000	0	0			24,000	24,000			24000
National consultants - site coordination	Month	192	1400	268,800.00	67,200	134,400	67,200			268,800	268,800			268800
National APFS expert	Day	35	100	3,500.00	0	3,500	0			3,500	3,500			3500
National microfinance expert	Month	6	2000	12,000.00	0	12,000	0			12,000	12,000			12000
National Agro Sylvo Pastoral value chains & business plan expert	Month	16	2000	32,000.00	0	32,000	0			32,000	32,000			32000
National knowledge management expert	Month	23	2000	46,000.00	0	0	46,000			46,000	46,000			46000
National GIS expert	Day	35	150	5,250.00	0	0	5,250			5,250	5,250			5250
M&E Officer	Month	48	850	40,800.00	0	0	0	40,800	0	40,800	40,800			40800
Gender Officer	Month	48	500	24,000.00	6,000	12,000	6,000	0	0	24,000	24,000			24000
Sub-total national Consultants				**625,150**	**141,200**	**193,900**	**124,450**	**40,800**	**124,800**	**625,150**	**625,150**	**0**	**0**	**625,150**
5013 Sub-total consultants				**766,150**	**165,200**	**256,900**	**178,450**	**40,800**	**124,800**	**766,150**	**766,150**	**0**	**0**	**766,150**
5650 Contracts														
Radio broadcasts for Dimitra clubs	Lumpsum	1	15000	15,000.00	15,000	0	0			15,000	15,000			15,000
Printing of APFS training manuals	Lumpsum	1	5000	5,000.00	0	5,000	0			5,000	5,000			5,000
Participatory video production for APFS	Lumpsum	1	10000	10,000.00	0	10,000	0			10,000	10,000			10,000
Contract with scientific partner to develop dune fixation protocols	Lumpsum	1	12000	12,000.00	0	12,000	0			12,000	12,000			12,000
Dune fixation	Hectares	200	2500	500,000.00	0	500,000	0			500,000	500,000			500,000
Fencing & human surveillance of dune fixation areas	Hectares	200	1225	245,000.00	0	245,000	0			245,000	245,000			245,000
Hydrological assessments	Lumpsum	1	20000	20,000.00	0	20,000	0			20,000	20,000			20,000
Sills & wells & hills catchment ponds & underground tanks in Tidjikja	Lumpsum	1	290000	290,000.00	0	290,000	0			290,000	290,000			290,000
Dyke, well, boreholes, small-scale earth bunds, hills catchment ponds & underground tanks in Meisah	Lumpsum	1	115100	115,100.00	0	115,100	0			115,100	115,100			115,100
Sills, small-scale earth bunds, hills catchment ponds & underground tanks in Dafort	Lumpsum	1	196000	196,000.00	0	196,000	0			196,000	196,000			196,000
Sill, boreholes, small-scale earth bunds, hills catchment ponds & underground tanks in Barbara	Lumpsum	1	138000	138,000.00	0	138,000	0			138,000	138,000			138,000
Desilting of El-Khatt cuvette in Tidjikja	Lumpsum	1	70000	70,000.00	0	70,000	0			70,000	70,000			70,000
Mapping of bank erosion hotspots & bank restoration protocol	Lumpsum	1	10000	10,000.00	0	10,000	0			10,000	10,000			10,000
Bank restoration / stabilisation	Km	7	13500	94,500.00	0	94,500	0			94,500	94,500			94,500
Contract with scientific partner to develop protocols for the restoration of degraded agro-sylvo-pastoral landscapes	Lumpsum	1	15000	15,000.00	0	15,000	0			15,000	15,000			15,000
Anti-erosion measures (anti-erosion bunds or stone barriers, bunds or rocky cordons, half-moons)	Lumpsum	1	229600	229,600.00	0	229,600	0			229,600	229,600			229,600
Planting of acacia stands	Hectares	200	700	140,000.00	0	140,000	0			140,000	140,000			140,000
Restoration of degraded forests	Hectares	400	875	350,000.00		350,000				350,000	350,000			350,000
Communication material (printing, video production etc.)	Lumpsum	1	15000	15,000.00	0	0	15,000			15,000	15,000			15,000
Contract with scientific partners to produce 3 scientific papers on EbA protocols & results	Lumpsum	1	27848	27,848.00	0	0	27,848			27,848	27,848			27,848
Spot checks (2/year)	Spot check	8	3571	28,568.00	0	0	0	0	28,568	28,568			28,568	28,568
Audits (1/year)	Audit	4	7000	28,000.00	0	0	0	0	28,000	28,000			28,000	28,000
Mid-Term Evaluation	Lumpsum	1	35000	35,000.00	0	0	0	35,000		35,000			35,000	35,000
Final Evaluation	Lumpsum	1	46702	46,702.00	0	0	0	46,702		46,702			46,702	46,702
5650 Sub-total Contracts				**2,636,318**	**15,000**	**2,440,200**	**42,848**	**81,702**	**56,568**	**2,636,318**	**2,498,048**	**0**	**138,270**	**2,636,318**
5021 Travel														
Domestic travel	Lumpsum	1	24,180.00	24,180.00	11,160	9,920	3,100	0	0	24,180	24,180			24,180
International travel	Lumpsum	1	42,320.00	42,320.00	0	3,080	39,240	0	0	42,320	42,320			42,320
5021 Sub-total travel				**66,500.00**	**11,160.00**	**13,000.00**	**42,340.00**	**0.00**	**0.00**	**66,500.00**	**66,500.00**	**0.00**	**0.00**	**66,500.00**
5023 Training														
Workshop for Dimitra clubs/ listening groups	Workshop	20	1000	20,000.00	20,000	0	0			20,000	20,000			20,000
WDRC quaterly plenary meetings	Meeting	56	800	44,800.00	44,800	0	0			44,800	44,800			44,800
Training for WDRCs on integrated watershed management planning	Training	8	1000	8,000.00	8,000	0	0			8,000	8,000			8,000
Workshops to identify climate vulnerabilities	Workshop	8	1000	8,000.00	8,000	0	0			8,000	8,000			8,000
Workshops to prepare IWMPs	Workshop	16	1500	24,000.00	24,000	0	0			24,000	24,000			24,000
Traininig on mainstreaming of CCA into local governance of resource management & land use	Training	8	2000	16,000.00	16,000	0	0			16,000	16,000			16,000
Workshops on CDP amendment	Workshop	12	800	9,600.00	9,600	0	0			9,600	9,600			9,600
Workshop on APFS curricula	Workshop	1	2000	2,000.00	0	2,000	0			2,000	2,000			2,000
Training for master facilitators	Lumpsum	1	3496	3,496.00	0	3,496	0			3,496	3,496			3,496
Training for APFS facilitators	Lumpsum	1	45856	45,856.00	0	45,856	0			45,856	45,856			45,856
APFS training costs (facilitation fees)	APFS	400	200	80,000.00	0	80,000	0			80,000	80,000			80,000
APFS training costs (per diem & transport for facilitators)	APFS	400	300	120,000.00	0	120,000	0			120,000	120,000			120,000
Training through exchange sessions for APFS	Lumpsum	1	30000	30,000.00	0	30,000	0			30,000	30,000			30,000
Training on basic maintenance operations of the small hydrological infrastructures, and solar-powered irrigation equipment	Lumpsum	1	10000	10,000.00	0	10,000	0			10,000	10,000			10,000
Awareness-raising on climate vulnerabilities & adaptation practices	Training	1	5000	5,000.00	0	5,000	0			5,000	5000			5,000
Awareness raising on improved cookstoves & sustainable fuelwood harvesting	Training	1	5000	5,000.00	0	5,000	0			5,000	5000			5,000
Training for Savings & Loan Associations	Training	12	800	9,600.00	0	9,600	0			9,600	9,600			9,600
Group training on business plan development	Training	8	800	6,400.00	0	6,400	0			6,400	6,400			6,400
Training on revolving funds	Training	12	800	9,600.00	0	9,600	0			9,600	9,600			9,600
Workshops to identify gaps in policies & regulatory frameworks	Workshop	3	1500	4,500.00	0	0	4,500			4,500	4,500			4,500
Workshops to discuss amendments in policies & regulatory frameworks	Workshop	3	1500	4,500.00	0	0	4,500			4,500	4,500			4,500
Trainings on climate-sensitive budgeting	Training	3	3000	9,000.00	0	0	9,000			9,000	9,000			9,000
Workshop to validate MEL plan	Workshop	1	1500	1,500.00	0	0	0	1,500		1,500	1,500			1,500
PSC meetings	Lumpsum	4	3500	14,000.00	0	0	0	14,000		14,000	14,000			14,000
5023 Sub-total training				**490,852**	**130,400**	**326,952**	**18,000**	**15,500**	**0**	**490,852**	**490,852**	**0**	**0**	**490,852**
5024 Expendable procurement														
Solar radios for Dimitra clubs	Lumpsum	1	10000	10,000.00	10,000	0	0			10,000	10,000			10,000
Stationery & small material for APFS training sessions	Lumpsum	1	15000	15,000.00	0	15,000	0			15,000	15,000			15,000
Improved cookstoves	Lumpsum	800	56	44,800.00	0	44,800	0			44,800	44,800			44,800
5024 Sub-total expendable procurement				**69,800**	**10,000**	**59,800**	**0**	**0**	**0**	**69,800**	**69,800**	**0**	**0**	**69,800**
6100 Non-expendable procurement														
Inputs & equipment for implementation selected, climate-resilient business plans	Business plan	20	8000	160,000.00	0	160,000	0			160,000	160,000			160,000
Inputs & equipment for local agricultural cooperatives, esp. women	Lumpsum	1	109662	109,662.00	0	109,662	0			109,662	109,662			109,662
Motorbikes	Motorbike	4	2000	8,000.00	0	8,000	0	0	0	8,000	8,000			8,000
4x4 Vehicle	Vehicle	2	40000	80,000.00	40,000	40,000	0	0	0	80,000	80,000			80,000
IT equipment for PMU	Lumpsum	1	6928	6,928.00	0	0	0	0	6,928	6,928	6,928			6,928
6100 Sub-total non-expendable procurement				**364,590**	**40,000**	**317,662**	**0**	**0**	**6,928**	**364,590**	**364,590**	**0**	**0**	**364,590**
5028 GOE budget														
Telecommunications	Annual cost	4	2000	8,000.00	0	0	0	0	8,000	8,000	8,000			8,000
Motorbike fuel & maintenance	Annual	4	1500	6,000.00	0	0	0	0	6,000	6,000	6,000			6,000
Project vehicle fuel & maintenance	Annual cost	4	2000	8,000.00	0	0	0	0	8,000	8,000	8,000			8,000
6300 Sub-total GOE budget				**22,000**	**0**	**0**	**0**	**0**	**22,000**	**22,000**	**22,000**	**0**	**0**	**22,000**
TOTAL				**4,416,210**	**371,760**	**3,414,514**	**281,638**	**138,002**	**210,296**	**4,416,210**	4,277,940	0	138,270	**4,416,210**

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an 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 Agencys 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).