



Ecosystem-based Adaptation (EbA) for resilient natural resources and agro-pastoral communities in the Ferlo Biosphere Reserve and Plateau of Thies

Part I: Project Information

GEF ID

10691

Project Type

FSP

Type of Trust Fund

LDCF

CBIT/NGI

CBIT **No**

NGI **No**

Project Title

Ecosystem-based Adaptation (EbA) for resilient natural resources and agro-pastoral communities in the Ferlo Biosphere Reserve and Plateau of Thies

Countries

Senegal

Agency(ies)

UNDP, IUCN

Other Executing Partner(s)

Senegalese Agency for Reforestation of the Great Green Wall (ASRGM)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Sector

AFOLU

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Least Developed Countries, National Adaptation Plan, Mainstreaming adaptation, Climate resilience, Climate information, Private sector, Livelihoods, Community-based adaptation, Biodiversity, Protected Areas and Landscapes, Terrestrial Protected Areas, Community Based Natural Resource Mngt, Influencing models, Transform policy and regulatory environments, Deploy innovative financial instruments, Convene multi-stakeholder alliances, Demonstrate innovative approach, Strengthen institutional capacity and decision-making, Stakeholders, Private Sector, SMEs, Local Communities, Type of Engagement, Information Dissemination, Partnership, Consultation, Participation, Beneficiaries, Communications, Civil Society, Community Based Organization, Trade Unions and Workers Unions, Non-Governmental Organization, Gender Equality, Gender Mainstreaming, Women groups, Sex-disaggregated indicators, Gender results areas, Capacity Development, Participation and leadership, Knowledge Generation and Exchange, Awareness Raising, Access and control over natural resources, Access to benefits and services, Capacity, Knowledge and Research, Enabling Activities, Knowledge Exchange, Learning, Theory of change

Rio Markers

Climate Change Mitigation

No Contribution 0

Climate Change Adaptation

Principal Objective 2

Biodiversity

Significant Objective 1

Land Degradation

Significant Objective 1

Submission Date

9/25/2020

Expected Implementation Start

12/1/2022

Expected Completion Date

11/30/2027

Duration

60In Months

Agency Fee(\$)

831,917.00

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	LDC F	5,291,826.00	7,151,593.50
CCA-2	Mainstream Climate Change Adaptation and Resilience for Systemic Impact	LDC F	3,657,707.00	3,351,593.50
Total Project Cost(\$)			8,949,533.00	10,503,187.00

B. Project description summary

Project Objective

Promote Ecosystem-Based Adaptation (EbA) in the Ferlo Biosphere Reserve (FBR), and in the Plateau and city of Thies to strengthen the resilience of biodiversity, ecosystem services and agropastoral communities to the impact of increasing climate change, and the associated risks of annual droughts and floods.

Project Component	Financi ng Type	Expected Outcomes	Expected Outputs	Tru st Fun d	GEF Project Financing(\$)	Confirmed Co- Financing(\$)
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Developing regional and local governance for climate resilience through EbA	Investment	Outcome 1. Stakeholders' capacities in planning and implementing EbA to maintain and/or create climate-resilient natural capital are strengthened.	<p>Output 1.1. Participatory governance bodies of the FBR and the PCT are established/revitalized and strengthened through a gender approach for better overall coordination in response to climate change risks and the integration of women in decision making</p> <p>Output 1.2. Local skills and knowledge, in terms of decision making, planning, and implementation of EbA to maintain and/or create climate resilient natural capital, are enhanced</p> <p>Output 1.3. Land use and management plans in the FBR are updated and implemented to integrate the EbA approach within regional and local regulations, policies and decision-making systems, using a gender-sensitive approach</p>	LDC F	1,046,533.00	2,470,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 2: Restoration and conservation management to increase resilience of natural assets and ecosystem services	Investment	Outcome 2. Agropastoralists' livelihoods, natural ecosystems and productive landscapes in project sites are more resilient to climate change through the adoption of EbA practices	Output 2.1 Regeneration of degraded areas and resilience of agropastoralists to climate change are improved through sustainable grazing management and a network of enclosure and no-take zones in the FBR Output 2.2. Natural resources in the FBR are protected against wildfires, monitored and sustainably used Output 2.3 EbA measures are implemented on the Plateau to reduce flooding in the city of Thies Output 2.4 Assisted Natural Regeneration experience is capitalized and promoted in the Plateau of Thies Output 2.5. A climate-resilient green belt is restored around the city of Thies	LDC F	4,230,500.00	6,380,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3: Investment in climate-resilient value chains	Investment	<p>Outcome 3. Private sector investment in value-chains producing goods and services based on the sustainable use of natural resources in a climate change context is mobilized</p> <p>Outcome 4. Local entrepreneurs and MSEs produce goods and services based on the sustainable use of natural resources</p>	<p>Output 3.1. A private sector platform is set up to better coordinate value-chain activities that promote</p> <p>Output 3.2. Stakeholder forums are organized to catalyze private and public sector investments towards the creation of resilient natural capital</p> <p>Output 4.1. The managerial and entrepreneurial capacity of local entrepreneurs, in particular women and youth, are supported to develop and commercialize products based on the sustainable use of natural resources, taking into account climate change</p> <p>Output 4.2. MSEs based on the sustainable use of natural resources are provided with equipment (i.e. for the establishment of nurseries, village multi-purpose gardens, fodder reserves and integrated model farms) and agriculture and forestry inputs</p> <p>Output 4.3. MSEs based on the sustainable use of natural resources are provided with</p>	LDC F	2,610,000.00	1,150,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 4. Knowledge management and Communication	Investment	Outcome 5 Relevant local and national stakeholders incorporate climate-resilient EbA approaches into their land management activities, drawing on the experience from the FBR and Thies	Output 5.1. Project monitoring system providing systematic information on progress in meeting project outcomes and output targets Output 5.2. A communication strategy aimed at the relevant local and national stakeholders is developed and implemented	LDCF	378,000.00	
Monitoring and Evaluation	Investment	Monitoring and Evaluation	Monitoring and Evaluation	LDCF	260,000.00	
Sub Total (\$)					8,525,033.00	10,000,000.00
Project Management Cost (PMC)						
LDCF			424,500.00		503,187.00	
Sub Total(\$)			424,500.00		503,187.00	
Total Project Cost(\$)			8,949,533.00		10,503,187.00	

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	Senegalese Agency for the Reforestation of the Great Green Wall (ASERGMV)	In-kind	Recurrent expenditures	500,000.00
Recipient Country Government	Ministry of Husbandry and livestock production PDEPS	Public Investment	Investment mobilized	3,200,000.00
Recipient Country Government	Ministry of Community Development, social and territorial equity ? PUDC Phase 2	In-kind	Recurrent expenditures	100,000.00
Recipient Country Government	Direction for the Management and Planning of Water Resources (DGPPE), Ministry of Water and Sanitation - Protection of the water resources of the Pout catchment area through nature-based solutions	Public Investment	Investment mobilized	5,903,187.00
GEF Agency	IUCN - BioPAMA and PAPBio	In-kind	Recurrent expenditures	300,000.00
GEF Agency	UNDP - TRAC	Grant	Investment mobilized	500,000.00
Total Co-Financing(\$)				10,503,187.00

Describe how any "Investment Mobilized" was identified

Consultations with stakeholders has shown the important complementarity of the projects and institutions listed above, with possible synergies and direct contribution to the proposed LDCF project results.

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(\$)
UNDP	LDC F	Senegal	Climate Change	NA	5,291,826	502,724	5,794,550.00
IUCN	LDC F	Senegal	Climate Change	NA	3,657,707	329,193	3,986,900.00
Total Grant Resources(\$)					8,949,533.00	831,917.00	9,781,450.00

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 (\$)
200,000

PPG Agency Fee (\$)
18,550

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	LDC F	Senegal	Climat e Change	NA	110,000	10,450	120,450.00
IUCN	LDC F	Senegal	Climat e Change	NA	90,000	8,100	98,100.00
Total Project Costs(\$)					200,000.00	18,550.00	218,550.00

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. false

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). true

This Project has an urban focus. true

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

Agriculture	10.00%
Natural resources management	60.00%
Climate information Services	0.00%
Costal zone management	0.00%
Water resources Management	0.00%
Disaster risk Management	30.00%
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 false

Increased Climatic Variability false

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	0	0	0	0%

CORE INDICATOR 2	
Area of land managed for climate resilience (ha)	0.00

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	0	0	0	0%

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	88,000	52,800	35,200
Ha of agriculture land	Ha of urban landscape	Ha of rural landscape	No. of residential houses
300.00	100.00	16,500.00	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 riverbank	Km of coast	Km of storm water drainage
Other	Other(unit)	Comments	
500	km of firebreaks	km of firebreaks	

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	2,000	800	1,200
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Livelihoods and sources of incomes strengthened / introduced

Agriculture false	Agro-Processing true	Pastoralism/diary false	Enhanced access to markets false
Fisheries /aquaculture false	Tourism /ecotourism false	Cottage industry false	Reduced supply chain false
Beekeeping false	Enhanced opportunity to employment true	Other false	Comments

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	88,000	35,200	52,800
Climate hazards addressed			
Flood true	Storm false	Heatwave false	Drought true
Other false	Comments		
Climate information system developed/strengthened			
Downscaled Climate model false	Weather/Hydromet station true	Early warning system false	Other false
Comments			
Climate related information collected			
Temperature false	Rainfall false	Crop pest or disease false	Human disease vectors false
Other false	Comments		
Mode of climate information dissemination			
Mobile phone apps false	Community radio false	Extension services false	Televisions 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 false	Coastal false	Mountainous false	Grassland true
Forest true	Inland water false	Other false	Comments

OUTPUT 1.2.1

Incubators and accelerators introduced

Total no. of entrepreneurs supported	0	Male 800	Female 1,200
No. of incubators and accelerators supported	0	Comments	
No. of adaptation technologies supported	0	Comments	

OUTPUT 1.2.2

Financial instruments or models to enhance climate resilience developed

Financial instruments or models

PPP models false	Cooperatives true	Microfinance true	Risk insurance false
Equity false	Loan false	Other false	Comments

OUTPUT 2.1.1

Cross-sectoral policies and plans incorporate adaptation considerations

Will mainstream climate resilience 0	Of which no. of regional policies/plans 0	Of which no. of national policies/plan 0	
Sectors Agriculture	Fishery	Industry	Urban

false

false

false

false

Rural

Health

Water

Other

false

false

false

true

Comments

pasture

management plans

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

Total no. of people trained	5,000	Male 2,000	Female 3,000
Of which total no. of people at line ministries	0	Male 0	Female 0
Of which total no. of community/association	5,000	Male 2,000	Female 3,000
Of which total no. of extension service officers	0	Male 0	Female 0
Of which total no. of hydromet and disaster risk management agency staff	0	Male 0	Female 0
Of which total no. of small private business owners	0	Male 0	Female 0
Of which total no. school children, university students or teachers	0	Male 0	Female 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

Total no. of people trained	0	Male 0	Female 0
Of which total no. of people at line ministries	0	Male	Female
Of which total no. of community/association	0	Male	Female
Of which total no. of extension service officers	0	Male	Female
Of which total no. of hydromet and disaster risk management agency staff	0	Male	Female
Of which total no. of small private business owners	0	Male	Female
		Male	Female

Of which total no. school
children, university students **0**
or teachers

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		
Please describe how their awareness was raised		

Part II. Project Justification

1a. Project Description

DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF

Main changes in alignment with the project design outlined in the original PIF

Section/subject	Change as compared to PIF
Outcomes	Outcome 3 was slightly reformulated with: <i>Outcome 3. Private sector investment in value-chains producing goods and services based on the sustainable use of natural resources in a climate change context is mobilized</i>
Outputs	Outputs under component 1 and Component 2 were adjusted as the outputs in the PIF were formulated as activities rather than outputs. PPG consultations and field visits have enabled to design concerted deliverables that in combination will reach the outcomes.
Cofinancing	The list of cofinancing partners has been updated. The following co-financiers have been confirmed ASERGMV, PUDC, PEDPS, UNDP, IUCN. Additionally, the AFD-funded, DGPRE-implemented 'Protection of the water resources of the Pout catchment area through nature-based solutions' demonstration project was added as a key cofinancing partner.

Table 1: Changes since PIF

1a. Project Description.

1/ Global environmental and adaptation problems, root causes and barriers to be addressed

Problem statement

Senegal is a coastal country in West Africa whose annual economic growth between 2014 and 2018 was one of the highest in Africa, consistently exceeding 6%^[1]. The export of its agricultural products (peanuts, cotton, horticulture) is one of its main drivers^[2] and agriculture employs 70% of the country's workforce. The vitality of this sector is directly depending on both the vagaries of the climate and the evolution of the price of these products on world markets. From a political point of view, it is one of the most stable republics in Africa, which makes it a good candidate for foreign investment, on which it also depends. However, the country remains classified, since 2000, in the list of Least Developed Countries (LDC) of the United Nations^[3]. A survey conducted in Senegal in 2018/2019 revealed that 37.8% of the population is still living below the national poverty line^[4]. This poverty is further accentuated by the current health crisis related to the COVID-19 pandemic^[5].

In addition, like all Sahelo-Sudanese countries, the Senegalese climate is characterized by high interannual and inter-decadal variability. It has been particularly marked in recent decades by alternating drought and intense rainfall[6]. This climatic insecurity has, since 1968, undermined ecosystems as well as all associated human and agricultural activities in all regions north of the Saloum river (4/5 of the country)[7]. Mean annual temperature has increased by 0.9°C since 1960, with an average rate of 0.20°C per decade[8]. This rise occurs with more intensity during the pre-monsoon months (from April to June) and in the northern regions.[9] While temperature has been constantly increasing since the 60's[10], precipitation regime has been more uneven. Indeed, as mentioned above, Sahelian rainfall is characterized by high variability on inter-annual and inter-decadal timescales. Statistically significant decreases of around 10 to 15 mm per decade have been observed between 1960 and 2006 in the southern regions of Senegal (during the wet season of June through September)[11]. Since the 00's, annual precipitations significantly increased, however not to the level of the 60's[12]. The deficit in the number of rainy days has persisted and is offset by a greater occurrence of heavy rains. Recurrent floods and increasingly frequent rainfall breaks at the start of the rainy season (greater than 15 days), recorded in particular in May-June-July throughout the territory, induce a shortening of the agricultural growing season and an increase in the agro-climatic risks. [13] Meteorological records over the last 40 years suggest more intense rain falling over shorter periods of time as well as an amplified dry season.[14] Floods now occur more frequently during the rainy season (June to September) as a result of intense rain, coastal erosion, and soil degradation. These trends already pose significant threats to agricultural productivity (causing malnutrition), water availability and quality (leading to waterborne disease outbreaks), and health system functions (impacting infrastructure and service delivery). Recent examples include the 2011 drought, when 800,000 people[15] were left water and food insecure throughout the country and the GDP grew at an annual rate of 1.9% against the expected 4.3%[16]. In 2014 and 2018, the country experienced its second and third severe drought within 6 years. The 2018 drought left nearly a quarter of a million people water and food insecure.[17] The historical reduction in precipitation has adversely impacted water discharges in Senegal's most important rivers with an average reduction of 22% to 60% over the period 1996 to 2017.[18] In addition to droughts, floods have had serious adverse impacts on human lives, infrastructure (public and private) and sources of livelihoods during the first decade of this century, especially 2003, in 2005, 2008, 2009, 2010, 2012, 2016 and 2019.[19] The agricultural sector has also suffered from destruction of irrigation networks and loss of crops. In 2019, Senegal faced again severe floods impacting approximately 9,000 people including 6 deaths.

Regarding projections, Senegal is expected to experience a continued warming trend through to the 2050s, as already observed over the past 60 years. In contrast, precipitation projections are uncertain[20]. Different models project a wide range of changes in the mean annual rainfall averaged over the country, from -41% to +48% by the 2090's but a majority of models forecast decreases[21]. However, there is now clear evidence that climate change is expected to increase the intensity of rainstorms. In the Fatik region, south of Thies, a recent vulnerability study established that, regardless of the time horizon and climate scenario, total rainfall and length of the rainy season are likely to decrease substantially. According to RCP 4.5, in 2035, the rainy seasons could start 4.5 days later than current trends, and 6.5 later by 2050. Under RCP 8.5, in 2050, the length of the rainy seasons could be

reduced by an average of 13 days. By 2045, projections show that drought could intensify to extreme drought events and high interannual variability could lead to extremely wet years between extremely dry periods (Figure 1).

Climate change is also expected to intensify the heaviest rainstorms. There is now clear evidence that this intensification is already taking place in the Sahel. The frequency of heavy rains and thunderstorms in the region has tripled since the 1980s. A greater proportion of the season's rains now comes as thunderstorms, more than at any time since 1950. [22]

[22] Ibid

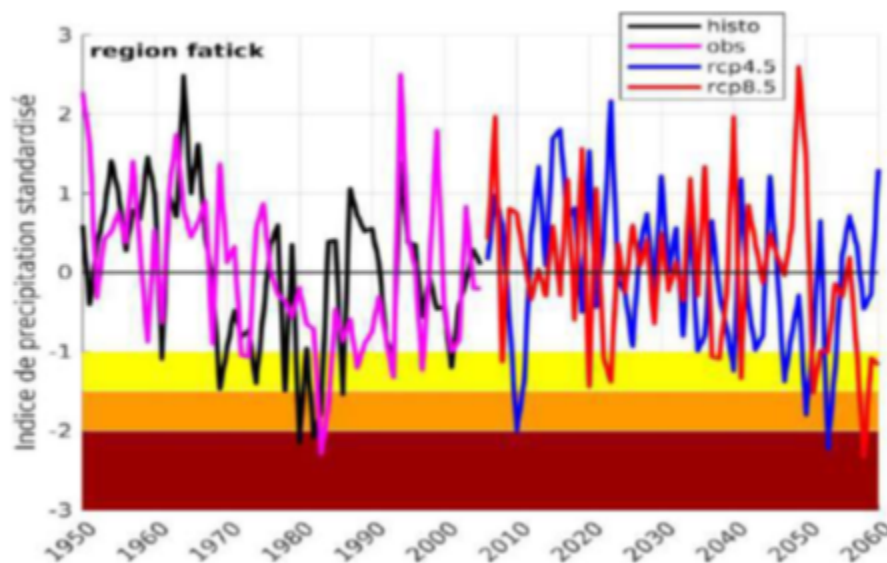


Figure 1. Evolution of the standard rainfall index of the historical (black), the observed (magenta), the scenario RCP4.5 (blue) and the scenario RCP 8.5 (red). The data used are the ensemble average of the 24 CMIP5 model simulations[22]

Depending on the emission pathway, monthly temperature of Senegal for 2040-2059 should increase by 1.3°C to 1.6°C within the RCP4.5 scenario and by 1.7°C to 2.1°C within the RCP8.5 scenario.

As presented in the Figure 2, all projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in the current climate, with such increases occurring more rapidly in the South and East of the country. All projections indicate decreases in the frequency of days and nights considered 'cold' in the current climate. The probability of heat wave will increase as well. [24]

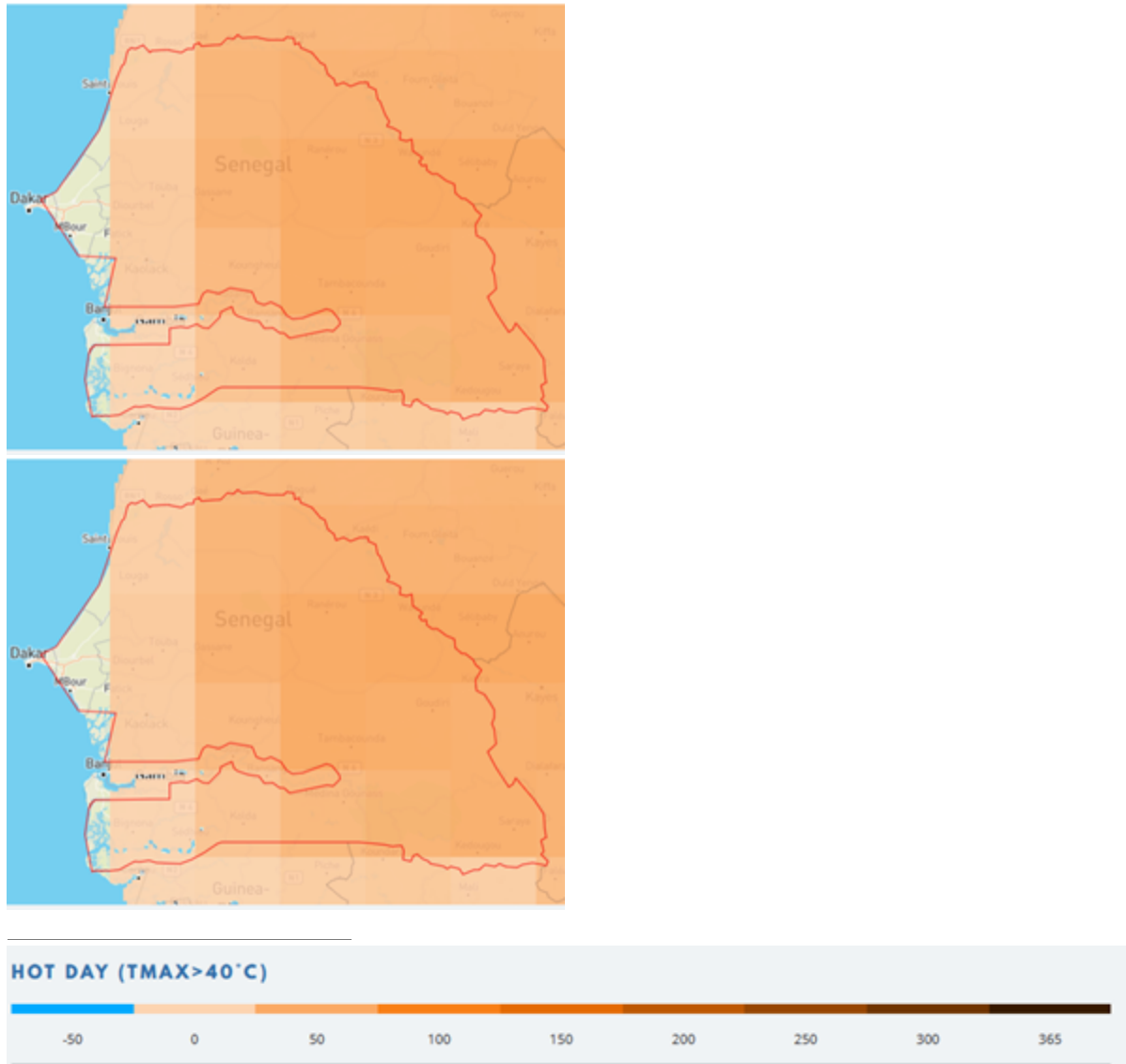


Figure 2: Projected change in Number of Hot Days ($T_{max} > 40^{\circ}\text{C}$) of Senegal for 2049-2059, RCP 4.5 (left) and RCP 8.5 (right) (source: World bank Climate knowledge)

[24] World Bank Climate Knowledge Portal > Climate data > Projection

These changes could lead to a likely reduction in the yields of the main crops. Indeed, some studies already point out the effects of anthropogenic climate change on agricultural production, causing significant drop in agricultural yields, as a result of the shortened growing cycles and increased evapotranspiration. For example, under RCP4.5, it is expected that millet yields would decline by 9% to 19% in Niakhar and Toubacouta by 2035 and 2050 respectively, maize yield would decline by 8% to 17% in Niakhar and 7% to 15% in Toubacouta and sorghum yields would decline by 14% to 27% in Niakhar and 12% to 23% in Toubacouta [25]. Changes in vegetation growth parameters would also affect natural ecosystems and biomass or livestock production, endangering the country food security. Furthermore, nutritional deficiencies and economic insecurity have already impacted living conditions

in general and of rural women in particular, due to increased family burdens associated to men departure in urban areas, or more difficult agricultural work[26].

The water resources sector ? a priority resource for livelihoods - is expected to be among the most climate change sensitive sectors . The Senegal River basin is particularly vulnerable, with around 3,500,000 inhabitants, of which 85% live near the river. Improved irrigation technology, as well as cultivation of a broad spectrum of produce?including rice, onions, tomatoes, potatoes, and sweet potatoes?drives development in the basin.[27] Changes in the access to water resources (both leading to excessive and insufficient access) will have significant adverse impacts on the yields, the livelihoods of agricultural communities and the access to food for rural and urban populations.

In addition, the projected increasing occurrence of climate extreme events and heavy rains increases the risk of floods, particularly in rapidly expanding urban zones where drainage is not adequate [28].. Increased floods will lead to important economic losses, a recovery period that prevents or reverses socio-economic growth and direct impacts on human lives and health.

[27] World Bank Climate Knowledge Portal > Climate data > Impacts

[28] Changement climatique et impacts au S?n?gal, AMMA-2050, 2019

The present project will focus on two intervention areas: the Ferlo Biosphere Reserve (FBR) and the Plateau and City of Thies (PCT).

Ferlo Biosphere Reserve

The FBR is located in the north-eastern part of Senegal (to a great extent in the Matam region) and was designated as a Biosphere reserve by UNESCO in 2012. It covers an area of 2,058,214 ha and is characterized by a mostly arid Sahelian climate in the north and a Sahelo-Sudanese climate in the south. The landscapes are mainly composed of a grass cover and a woody stratum made up of trees, shrubs and bushes whose distribution follows the rainfall and soil gradient of the area. In this region, agropastoralism represents the main activity of 90% of the households. Generally, agropastoralists rely on supplementary agriculture during the rainy season and transhumance during the dry season[25], and are therefore highly dependent on rainfall patterns and natural resources availability (e.g. for fodder and water supply). Moreover, the Project Preparation Grant (PPG) consultations revealed that women?s dedicated tasks, like firewood and Non-Timber Forest products (NTFP) harvesting, were increasingly time-consuming due to the desertification process ongoing in the region, preventing them from accessing local decision-making bodies. Overall, ecosystems are already affected by the increased frequency of droughts, leading to a decrease in soil water availability, a drying up of vegetation, and more frequent bush fires[26]. This affects directly agropastoral populations in the PCT and the FBR, as

confirmed by studies conducted to prepare Senegal's INDC (2015), which list the following impacts of climate change on the agropastoral sector: (i) Decreased productivity and quality of fodder; (ii) Increased scarcity of water and fodder resources; (iii) Increased competition for access to water resources; (iv) Decreased productivity of livestock; (v) Increase in animal diseases. Studies conducted in the region under the Great Green Wall initiative confirm that climate change directly impacts the livelihood of agropastoralists: agriculture and livestock rearing directly depend on resilient and functioning ecosystems; with climate change, those activities will become more uncertain and need constant adaptation to extreme climate events, from long dry periods, uncertain cropping seasons to intense rainfall events, leading to floods. Without much diversity in their sources of income, high reliance on external projects to secure existing activities (particularly water infrastructure), these populations are highly vulnerable to climate change, especially in the FBR where climate extremes intensify more than in the southern parts of the country.

Thies

On the Plateau and the city of Thies (PCT), located in the great Dakar region, the urban landscape zone of this project, the situation is also particularly alarming. Indeed, the city of Thies being located in the Plateau's reservoir, it has recently suffered from repeated floods, landslides and mudflows. More frequent droughts events have led to a decrease in soil water storage, compromising vegetation regeneration. This results in an acceleration of the speed of water runoff and erosive phenomena[27]. Added to a higher frequency of violent rainfall episodes, the impacts of these phenomena are reflected in soil degradation and a decline in the performance of agricultural yields. As a consequence, the urban population of the City of Thies is heavily impacted by floods, silting up of old rainwater drainage channels and roads. Although the populations of the PCT have a greater diversity of activities that provide them with a source of income, the floods that repeatedly block transportation and damage infrastructure are slowing down the city's economic development. In addition, they are responsible for population displacements such as seasonal migration in search of temporary employment in urban centers, or long-term migrations. Finally, it has been observed that runoff water flooding certain areas of the city is causing public health problems, such as malaria, skin disorders and diarrhea[28] (2nd cause of death and one of the main causes of malnutrition in children under five, according to the World Health Organization[29]).

Additionally, the population under the wider area of influence of the City of Thies includes agropastoralists and other natural resources users, who are particularly vulnerable to the changes in rainfall patterns.

Root causes and drivers of climate vulnerability

Root causes

The first underlying root cause of vulnerability to climate change is **poverty**. A study conducted nationally in 2013 by the National Agency for Statistics and Demography revealed that the poverty rate of the Thi's region's population was estimated between 30 and 40% while, in the FBR, the mean rate is estimated between 40% and 50%[30]. Without alternative livelihoods or vocational employment, natural resources are often the only source of revenue, especially for women. This situation is leading

to detrimental degradation and overexploitation of ecosystems and prevents targeted communities to implement long-term responses to climate shocks and changes.

Moreover, in the FBR, current **demographic growth** associated with the growing number of herds and the multiplication of drillings have contributed to increase pressure on pastures and lands[31]. Similarly, in the Thi's basin, the population more than doubled in thirty years[32]. **Poor urban planning combined with insufficient integrated management and inadequate governance of natural resources and landscapes** has led to increased pressure on ecosystems. Furthermore, **legal or uncontrolled, the urban expansion** of the city of Thi's is also weighing on the availability of agricultural land, creating user conflicts between urban dwellers, farmers, and herders. Finally, populations, and in particular women, particularly in the FBR, have **little access to education**, fueling the gap in capacities for enterprise development.

Drivers

Degradation of ecosystems, on which local populations heavily rely for their means of subsistence, negatively impacts the vulnerability of local communities. For example, in both project areas, **overexploitation of vegetation resources** has been reported. Since wood is the primary source of energy, the forest resources of the FBR and PCT are now greatly threatened by their overexploitation. This situation is accentuated by **overgrazing** by cattle, preventing the natural regeneration of forest stands. This loss of vegetation cover is exacerbating water erosion in the PCT, causing strong erosion and landslides, and wind erosion in the FBR, associated with soil compaction and desertification, which results in an overall loss of soil fertility that is highly damaging to the productive systems. Despite the fact that certain plots of land have been set aside to prevent overgrazing and allow for natural regeneration, particularly in the core areas of the FBR, the **fences are regularly damaged** for the feeding of transhumant animals, and compliance with the rules of governance of these areas remains a challenge.

In the PCT region, traditional **agricultural practices** such as forest clearing for the extension of cultivated areas and extensive livestock practices (forage tree pruning and overgrazing) are not adapted to actual biophysical conditions, in particular on steep terrain, with limited use of anti-erosion techniques[33], leading to land degradation, soil erosion and loss of soil fertility.

Therefore, there is an urgent need to reverse these land and ecosystem degradation trends that further aggravate the magnitude and intensity of climate extremes, their impacts as well as susceptibility of the agropastoral community to the adverse impacts of droughts and flood incidents. Regeneration of ecosystems and their services require conducive land use and management practices. Such transformative change in land use can be achieved at scale through linking land use and management with livelihood development opportunities, by taking value chain approaches and enterprise development to alleviate livelihood options. To this end, the proposed project objective will be to promote Ecosystem based Adaptation (EbA) in the FBR and the PCT to strengthen the resilience of biodiversity, ecosystem services and agropastoral communities to the impact of increasing climate change, and the associated risks of annual droughts and floods. The project will protect and restore ecosystems on which current rural livelihoods depend, in order to secure the natural environment as a basis for adapting to climate change. Using an EbA approach, the project will initiate ecosystem regeneration to restore ecosystem services and limit the adverse impacts of climate change. It will also contribute to increasing the resilience and the overall living conditions of populations by proposing

alternative and diversified income-generating activities offering climatic and environmental co-benefits.

Barriers

In this context, a number of barriers to resilient growth and climate change adaptation prevent effective interventions and need to be addressed. Those are described below:

Barrier 1: Weak governance mechanisms, limited institutional and technical capacity to support EbA

The government of Senegal has shown, over the last twenty years, a growing commitment to climate action, notably through its Nationally Determined Contribution (NDC) and the ongoing process of drafting the National Adaptation Plan (NAP). The PPG consultation with the various stakeholders revealed that climate change is currently being integrated into the planning and budgeting of national technical departments and regional authorities. However, the concept of EbA has not yet been mainstreamed. Moreover, the consultations highlighted the lack of local multisectoral bodies responsible for the participatory management of natural resources in the FBR and the PCT. The major challenge therefore lies in the creation of governance bodies that will be then responsible for the coordination of sectoral policies, the dissemination of information and the implementation of training courses illustrating the opportunities that EbA can offer. These educational contents, based on concrete examples, will have to be provided within the technical services of the Ministry of Environment and Sustainable Development (MEDD), the other relevant ministries but also in the deconcentrated administrations of the state, the local authorities, and the groups of municipalities at both strategic and operational levels.

Barrier 2: Lack of widely accepted and clear integrated management plans to enable enforcement of regulations relating to the protection of ecosystems

The consultation with stakeholders, in particular with the Pastoral Units (PU) in charge of managing pastoral resources, revealed a lack of management plans that include an integrated and holistic view of landscape and watershed management, taking into account the vulnerabilities of the populations and allowing for the regulation of the use of ecosystems and natural resources. It also revealed that when existing they are rarely updated and implemented. The establishment of these management plans has to be sustained in order to provide a legal and operational framework for sustainable, concerted management of space, pastoral resources, and community infrastructures.

Barrier 3: Lack of effective frameworks for cross-sectoral, multi-stakeholder, and/or community-based land-use planning and natural resources management

The preliminary analysis of the governance of the two project zones revealed the absence of territorial natural resource management entities, basing their planning and field actions on a geographical, socio-economic, and sustainable vision of natural resource management. The governance bodies (e.g. coordination council, scientific committee or Community Interest Groups) related to the Ferlo Biosphere Reserve, whose status was established in 2012, are, for example, still not in place, and the FBR is managed by two separate entities in the north (DPN - National Parks Directorate) and in the south (DEFCCS - Directorate of Water, Forestry, Hunting and Soil Conservation). While the

communities visited in the Thi's region deplore the absence of an inter-municipal committee around the environmental, socio-economic, and political issues linked to climate change and ecosystem degradation, it also highlighted the lack of operational bodies accompanying the implementation and monitoring of territorial planning initiatives, with currently no central role played by the DEFCCS.

Barrier 4: Lack of information on climate risks to help inform decision-making

Planning for, and the implementation of, Ecosystem-based Adaptation relies on a good understanding of the underlying climate risks, and the ability to track changes in climate and their impacts on local communities and ecosystems. This type of information is lacking in the project zones, notably in the Thi's basin where the meteorological station is not currently recognized as a reference station approved by the World Meteorological Organization (WMO). This is impeding adaptation decision-making at all levels of governance. For instance, there is a lack of monitoring data related to ongoing climate change, including variables which have direct implications for ecosystem functioning such as precipitation regime. Hence, it is impossible to systematically assess climate risks, and make evidence-based decisions for adaptation. This gap has been clearly identified by the Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM), and set as a top priority for adaptation, including setting up a committee of technical experts to ensure the transfer of climate information between local, regional, and national levels and the populating of relevant data portals.

Barrier 5: Limited knowledge and capacity (financial, human, technical, inputs) to support the implementation of EbA practices

With limited knowledge on strategies to adapt to climate change, farmers and agropastoralists either have damaging agricultural practices or simply keep on using traditional techniques that may not be adapted anymore to new and shifting climate conditions. In the PCT, for instance, the PPG consultation revealed that the lack of technical knowledge and tools for agricultural production keep production yields low, favoring the expansion of cultivated areas to the detriment of natural ecosystems. In both intervention areas, despite observing high inter-annual variability and the increasing of extreme weather events, the planting, harvesting and transhumance seasons are being carried on as they used to by the communities. Indeed, access to an evidence base of adaptation options is limited, as there has been little experience to date in implementing adaptation strategies in the area of intervention.

Barrier 6: Lack of an enabling environment for mobilizing private sector investment in EbA interventions, projects and programs for resilient natural assets.

The PPG consultation process indicates that very few organic products and by-products from the FBR and PCT are reaching the main urban centers. Producers, organizations, local entrepreneurs, MSEs, GPFs, and GIEs in both intervention zones are facing various difficulties to establish resilient and economically viable eco-system based value-chains. This is due to:

- ? the low valuation of NTFP;
- ? the lack of equipment for the collection, transport, processing and conservation of NTFPs;
- ? the low capacities of the existing GPFs[34] and GIEs[35] in terms of valorization of ecosystem services, needs expressed in term of training and capacity building;

- ? the need to adopt innovative practices and strengthen skills in entrepreneurship and business management, savings education, assistance in developing business plans, and identification of potential national and multilateral financing mechanisms
- ? the lack of an enabling economic environment to attract investments in EbA and in the sustainable use of natural resources.

The artisanal products sector is poorly developed partly due to the lack of knowledge about promising agricultural and forestry products. Moreover, producers and processors, many of which are women, lack coordination with the private sector operating in urban areas and exchange platforms to communicate about EbA initiatives successes and failures. Consequently, there has been limited investment from international and national private sector in natural resources-based enterprises, as there has not been a systematic analysis of the EbA opportunities and subsequently little promotion by competent national institutions.

Barrier 7: Limited financial resources to respond to climate threats (in particular floods and droughts) and limited capacity to take financial risks to invest in or adopt alternative resilient practices at the local level

The analysis of the existing local micro-enterprises handling the production of the main value chains (ie. baobab powder, balanite syrup and oil, Jujube cake) within the two-intervention areas shows that producers lack financial resource to be better prepared to climate shocks. Indeed, the lack of optimized processes, material, and knowledge about how to develop sustainable business plans prevent them from necessary investments and savings. The survey also indicate that they don't have access to loans and insurance. A recent study conducted in SMEs in semi-arid zones of Senegal confirmed these observations indicating that nearly 95% of the economic actors interviewed claim to have received no financial, material or technical support from the State, local authorities or any partner to cope with the impacts of extreme weather conditions[36].

In order to overcome these barriers to climate change adaptation and resilient growth, and to address the root causes and drivers of climate vulnerability, the Government of Senegal, through the Senegalese Agency for the Reforestation of the Great Green Wall (ASRGM) has developed the project **"Ecosystem-based Adaptation (EbA) for Resilient Natural Resources and Agro-Pastoral Communities in the Ferlo Biosphere Reserve and the Thies Plateau"** with the support of the United Nations Development Programme (UNDP) and the International Union for the Conservation of Nature (IUCN). This project aims to promote EbA to strengthen the resilience of biodiversity, ecosystem services and agropastoral communities to the impacts of climate change, and the associated risks of recurring droughts and floods.

To this end, the project will work on protecting and restoring the ecosystems on which current rural livelihoods depend, in order to secure the natural environment as a basis for adapting to climate change. It will also contribute to increasing the resilience of populations by proposing alternative income-generating activities offering climatic and environmental co-benefits. As a complement, it will seek to improve the overall living conditions of the populations by facilitating their access to diversified economic activities.

2/ Baseline scenario

Senegal embarked on the process of developing its NAP from 2015, adopting a sectoral and participatory approach, under the coordination of the Ministry of Environment and Sustainable Development (MEDD). An institutional framework for coordination and monitoring of the NAP was established, while a roadmap was developed in 2018, which will be updated every three years. Priority sectors have been identified based on the analysis of the NAPA (2006), the NPDC (2015) and the PSE (2014-2035).

With the objective to build on previous UNDP support to the NAP Global Support Program, the GEF funded-UNDP implemented project 'Support project to the National Adaptation Plan of Senegal (NAP-GEF)' aims at (i) strengthening the capacity of climate monitoring centers and policy makers; and (ii) adapt policies for long-term resilience through support to the sectoral NAP development process. Approved in 2020, the NAP-GEF project will support the agriculture, infrastructure, disaster risk/flood management and health sectors. From 2020 to 2024, a Green Climate Fund (GCF) funded project will be implemented by UNDP in partnership with the Directorate of the Environment and Classified Establishments (DEEC), to support sectoral NAPs for livestock, biodiversity/tourism and water resources[37]. The present LDCF project will complement that work providing solid examples of EbA implementation across different sectors and geographical regions.

The FBR was selected to represent the rural landscape area in this project, and identified as a priority due to the high vulnerability to climate change of local communities, in particular women, the economically important livestock industry, and the remarkable biodiversity of the region. It is also located within the Great Green Wall (GGW) corridor, and as such supports the GGW initiative globally. Within the FBR, the target zones for the project are 3 central areas of the reserve and their associated buffer zones. One is located in the Northern division of the reserve (Katane's enclosure and adjacent PUs) and two are in the West part (sylvopastoral Reserve of Younouf and PU of Younouf) and East part of the Southern division of the reserve. It also contains a transition zone including the PU of Loumboul Samba Abdoul, Weyndou Makam (municipality of Houdalaye) and the Ranrou area including the municipality and its surroundings.

The City of Thies was selected to represent the urban landscape zone in this project, providing a parallel perspective on EbA next to the rural zone of FBR. It was identified as a priority due to the climate change vulnerability of its large urban population, in particular to the severe impacts of flooding and the direct link between climate extreme events and land uses in the Plateau of Thies, offering an opportunity to demonstrate what EbA offers to address observed and forecasted climate impacts. Based on discussions and consultations with stakeholders, the project would target the following municipalities as a priority: the municipalities of Fandene and Notto Diobass which are contiguous to the city of Thiès (from the Kissane basin, Sangu, Mbomboyé, Keur Diemb, Keur Bara, Dakhar Maye to Thiès), Thiès (Mbours III and IV, Dakhar II, Daral Peul, Zone de Contournement and ZAC) and the municipality of Mont Rolland encompassing the Community Nature Reserve and the watershed in the direction of the city Thiès.

Key baseline projects implemented in the two intervention areas during the LDCF intervention, include:

- PADAER (Agricultural development and Rural Entrepreneurship Support Program, phase II), funded by IFAD, aims to reduce rural poverty and stimulate economic growth by strengthening actions to improve production (hydro-agricultural and pastoral infrastructures) and marketing, and stimulate rural employment, in particular for women and the youth, in rural communities in 4 regions, including the Matam region. Started in 2019 for 5 years, PADAER will cooperate closely with the proposed LDCF project, linking rural entrepreneurship to EbA interventions.
- PROMOVILLES (Program for the Modernization of Cities) supports the construction, in various cities of Senegal, of more than 300 km of roads including their dependencies (sanitation, public lighting and landscaping). In Thiès, it will contribute to the fight against flooding by the construction of roads and the installation of a mini wastewater pumping station. Started in 2015 for 10 years. The proposed LDCF project will complement infrastructure works under PROMOVILLE by acting directly on the plateau to limit water run-off upstream through EbA interventions.
- PDEPS Senegal (Project for Sustainable Development of Pastoralism in the Sahel) aims at contributing to the improvement of livestock production to increase income and reduce food and nutritional insecurity of vulnerable populations through the development of agropastoral infrastructures, development of the milk and small ruminants value chains and support to institutional and organizational capacities. Started in 2018 for 5 years, PDEPS will closely coordinate activities with the proposed LDCF project, which EbA approach to climate change resilience and sustainable value-chain development activities will complement PDEPS interventions. PDEPS will cofinance the project up to US\$3.2M.
- PUDC Phase 2 (Emergency Community Development Program), funded by the Senegalese government, aims to improve livelihoods in rural areas of Senegal through investments in infrastructures and basic social services, support to agricultural products processing, and promotion of a green economy. Active in both the Matam and Thiès regions, the PUDC is an important initiative from the Senegalese Presidency. Started in 2019 for 4 years, PUDC will contribute to the objectives of the LDCF project through construction of feeder roads, water points for livestock and drillings. PUDC will cofinance the proposed LDCF project up to US\$100,000.
- ASAMM (Projet d'Amélioration de la Sécurité Alimentaire et d'Appui à la Mise en Marché dans la région de Matam) and APEFAM 1&2 (Projet d'Appui à la Promotion des Exploitations Familiales dans la région de Matam), funded by AFD, aim to contribute to food security, economic development and natural resource management in the Matam region and the Senegal River Delta through the improvement of production and marketing conditions for agricultural and livestock products and the establishment of a governance system for land and water resources. Implemented by SAED (Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé), the approach taken to assist rural municipalities through the FAI (Fonds d'appui intercommunautaire) in reducing the vulnerability of local populations, and in particular women (FAI genre) constitutes an interesting baseline from which lessons learned and good practices will feed into this LDCF project. Started in 2017 for 5 years, close coordination between the projects will enable synergies and lessons sharing, the two projects feeding each other.

- The Demonstration project 'Protection of the water resources of the Pout catchment area through nature-based solutions' will be funded by AFD and implemented by the Directorate of Water Resources Management and Planning (DGPRES). With a budget of US\$5,903,187, the objectives of this project are to improve ground water governance and cooperation between the many stakeholders using the resource, and improve ground water recharge to maintain the water table level. To this end, the project will promote sustainable ground water management through improved water governance frameworks, and implement nature-based solutions and small infrastructure around the Pout area (i.e. in another watershed of the Plateau of Thies). Close coordination with this project will be sought as there is joint interest in water governance improvements and the implementation of nature-based solutions, involving similar stakeholders and strong potential for lessons learned and best practices sharing. Planned to start in 2022 for 5 years, this project will cofinance the proposed LDCF project up to US\$5.8M.

- GIZ/GCF Promotion of Climate-Friendly Cooking in Kenya and Senegal aims to increase the use of improved cookstoves by accelerating sustainable market growth. Started in 2021 for 5 years, interventions on improving the efficiency of cooking will directly contribute to reducing the pressure on PCT and FBR ecosystems, supporting restoration activities from the proposed LDCF project to reach their objectives.

- BIOPAMA (2017-2023), funded by EU's 10th European Development Fund, will assist countries in West Africa, to address priorities for effective biodiversity conservation, sustainable use of natural resources and effective protected area management and governance. Protected area stakeholders at the regional, national and local levels will receive support through the provision of tools, services, capacity development and access to finance for site level interventions. A cofinancing of US\$150,000 is estimated for this project.

- The PAPBio regional program, funded by the 11th European Development Fund, promotes regional mechanisms of natural ecosystems and landscapes governance, the management of protected areas and the promotion of regional conservation and sustainable development policies and management. This regional dynamic enables regional bodies, national administrations in charge of protected areas, riparian communities dependent on natural resources, local organizations and civil society to improve the effectiveness of ecosystem and protected area management, share their experiences and knowledge and promote good practices. The establishment of a regional coordination mechanism for Protected Areas in West Africa, relevant to the FBR, combined with the capacity building of Senegal's PND technical bodies represents an estimated cofinancing of US\$ 150,000

3/ Proposed alternative scenario

The specified impacts of climate hazards and the underlying causes exacerbated by climate change described above require specific responses for long-term sustainability. In the case of the PCT and the FBR, a direct link is established between ecosystem degradation and vulnerability to climate change. As such, restoring ecosystem services in a sustainable manner appears as the most cost-effective and sustainable solution to face the impacts of climate change. By involving local communities and

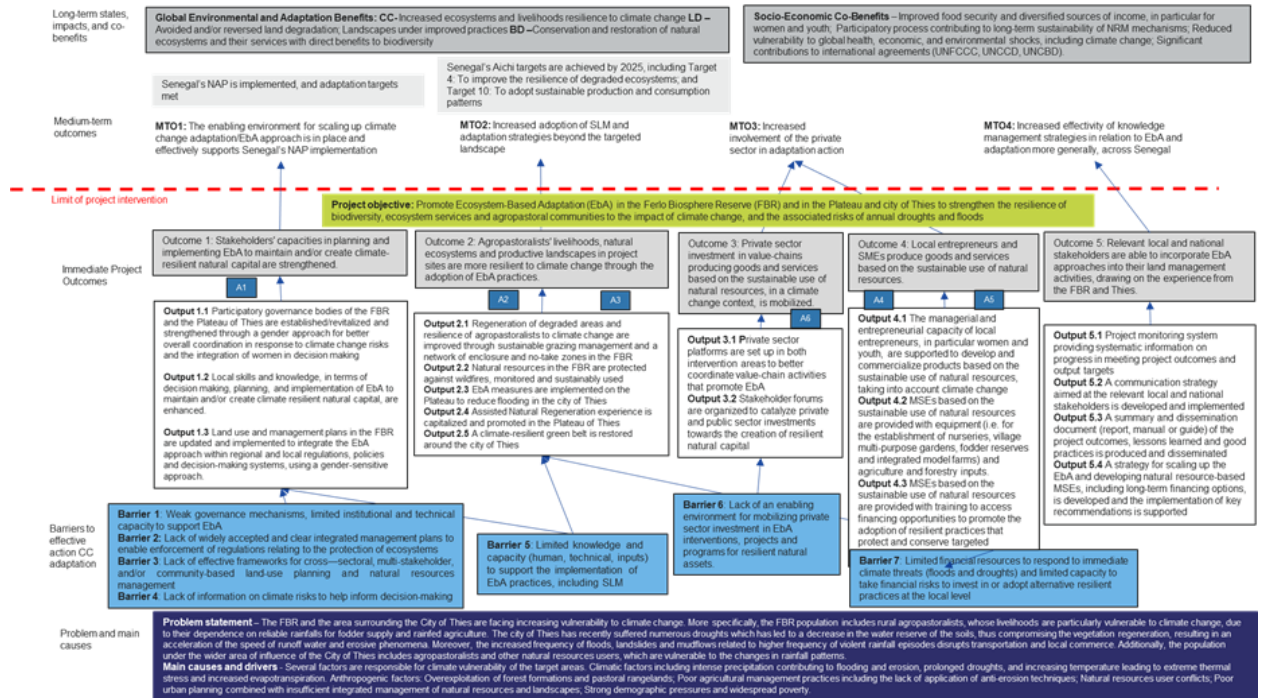
offering alternative livelihoods to the current environmentally-harmful practices, the project is expected to get the buy-in from beneficiaries in the long term and to be replicated in surrounding areas with and without external funding. It will also provide important lessons learned and best practices for larger-scale initiatives such as the Great Green Wall, the NDC implementation and other national initiatives under discussion. An alternative adaptation option is the introduction of large-scale irrigation schemes. This option might lead to overextraction of water resources, posing significant environmental and social safeguards risks with the possible depletion of water resources. This option would also be too costly to cover large areas with the limited available private (mainly smallholder farmers) and public budget. Another option would be to put in place more stringent policies and enforcement mechanisms to prevent further degradation of ecosystems. However this option has three limitations: (i) the currently degraded ecosystems are not able to withstand the current and projected impacts of climate change and need to be restored; (ii) a sufficiently strong enforcement mechanism will require extensive government staff, with high costs that can't currently be borne by government budget, and (iii) local communities will be adversely impacted by the loss of revenues from the unsustainable exploitation of natural resources and won't receive support to adopt alternative livelihoods.

The project objective is to promote Ecosystem-Based Adaptation (EbA) in the FBR and in the PCT to strengthen the resilience of biodiversity, ecosystem services and agropastoral communities to the impact of increasing climate change, and the associated risks of annual droughts and floods.

In order to achieve the above, the following project components and outcomes are proposed:

- ? Component 1. Developing regional and local governance for climate resilience through EbA
 - o Outcome 1 Stakeholders' capacities in planning and implementing EbA to maintain and/or create climate-resilient natural capital are strengthened.
- ? Component 2. Restoration and conservation management to increase resilience of natural assets and ecosystem services
 - o Outcome 2 Agropastoralists' livelihoods, natural ecosystems and productive landscapes in project sites are more resilient to climate change through the adoption of EbA practices.
- ? Component 3. Investment in climate-resilient value chains
 - o Outcome 3 Private sector investment in value-chains producing goods and services based on the sustainable use of natural resources, in a climate change context, is mobilized.
 - o Outcome 4 Local entrepreneurs and MSEs produce goods and services based on the sustainable use of natural resources
- ? Component 4. Knowledge management and communication
 - o Outcome 5 Relevant local and national stakeholders are able to incorporate EbA approaches into their land management activities, drawing on the experience from the FBR and Thies.

Theory of change



Assumptions:

- ? Data generated and other knowledge products developed through the project are of sufficient quality and in the correct format to be used effectively in adaptation decision-making processes
- ? Restoration efforts are not threatened/undermined by climate change impacts (e.g. wildfires), and are supported by significant local buy-in from all local actors through a community-based approach
- ? Capacity-building at the local level leads to increased uptake of adaptation strategies
- ? The global COVID-19 pandemic recedes and opens new opportunities for green growth initiatives
- ? Women and youth are able to, and willing, to take part in new business initiatives
- The private sector is interested in taking a leadership role in adaptation

Description of the project components

(for more detailed descriptions of the outputs and planned activities, please see the Project Document section 4 ? Results and Partnerships)

Component 1: Developing regional and local governance for climate resilience through Ecosystem Based Adaptation

Outcome 1. Stakeholders' capacities in planning and implementing EbA to maintain and/or create climate-resilient natural capital are strengthened

In its letter of sectoral policy of the Environment and Sustainable Development 2016-2020, the government of Senegal, through the Ministry of Environment, renews its commitment to combine environmental protection and sustainable development in order to improve the resilience of populations to climate change. While the country's adaptation needs are well identified and are among the priority objectives, the means to achieve them do not mention ecosystem-based adaptation. Indeed, the concept remains poorly integrated into land-use planning and management strategies. The link between the sustainable use of natural resources, its economic interest, and its capacity to reduce the climate vulnerability of populations is not well known. In this context, Component 1 of the project aims to improve the integration of climate change adaptation and EbA in the management of the FBR and the PCT. To this end, the project will establish technical committees responsible for training the relevant governing bodies, in particular those bodies suggested by the biosphere reserve status in the FBR (the Coordination Council, the Scientific Committee and Community Interest Groups) and an inter-municipal committee around the environmental, socio-economic, and political issues in the PCT. These bodies will be strengthened or created in accordance with the specific needs of each target area and through participatory and gender-sensitive approaches. Finally, the EbA approach will be formalized and implemented through the updating of land-use management plans and organizational, logistical, and financial support for their operationalization.

Without the project interventions, the capacity of the institutions in charge of land-use management to implement national adaptation strategies (i.e. Plan Senegal Emergent Vert and NDC) in the FBR and PCT will remain insufficient. Underlying challenges contributing to climate vulnerability, including poor ecosystems management and planning, as well as limited data to inform decision-making and progress monitoring, will remain unaddressed.

While the diagnosis of the management of the Plateau of Thiès revealed a multiplicity of stakeholders, an in-depth analysis of local institutions showed sectoral compartmentalization and diffuse responsibilities, resulting in the lack of a global vision necessary for its effective environmental management and adaptation to climate challenges. Regarding the Ferlo area, no global land-use management governance body currently exists, despite the fact that the area was granted biosphere reserve status by UNESCO in 2012. In addition, there is little coordination between the different entities of local governance and territorial bodies such as Pastoral Units, Breeders' Houses, Ferlo Breeders' Cooperatives, local committees for the management of hydraulic infrastructure, and local committees for the fight against bush fires in FBR, as well as Local Consultation Frameworks of Producers' Organizations and the Inter-Village Development Committees in the PCT. Without the project interventions, these governance bodies will remain fragmented, uncoordinated and operating in silo, preventing sustainable natural resource management and planning, training, awareness raising and operationalization of an effective ecosystem-based adaptation strategy.

As a dedicated agency to make the Great Green Wall a reality in Senegal, ASERGMV is a key partner for all restoration and afforestation activities in Senegal. As the executing agency of the proposed project, ASERGMV will put its human, technical and logistical resources at the disposal of the project, further embedding the project into the larger GGW initiative (estimated cofinancing US\$100,000 for component 1).

Close cooperation and coordination will also be sought for this outcome delivery with a number of ongoing initiatives, in particular the DGPPE (AFD-funded) water resource protection project in Pout, which will work on water governance and nature-based solutions in and around the Plateau of Thies (estimated cofinancing for Component 1: US\$2,000,000). The project will also build on lessons learned from recent past interventions, such as the projects implemented by NGOs GRAIM and ADT-GERT to improve local governance on the Plateau of Thies for ecosystem restoration.

Finally, the work conducted by IUCN through the PAPBio and the Biopama project on the governance of protected areas, including capacity building of protected area actors at the regional, national and local levels, will strongly contribute to outcome 1 (for a total of US\$300,000).

? *Output 1.1. Participatory governance bodies of the FBR and the PCT are established/revitalized and strengthened through a gender approach for better overall coordination in response to climate change risks and the integration of women in decision making (UNDP)*

? *Output 1.2. Local skills and knowledge, in terms of decision making, planning, and implementation of EbA to maintain and/or create climate resilient natural capital, are enhanced (UNDP)*

? *Output 1.3. Land use and management plans in the FBR are updated and implemented to integrate the EbA approach within regional and local regulations, policies and decision-making systems, using a gender-sensitive approach. (IUCN)*

Component 2: Restoration and conservation management to increase resilience of natural assets and ecosystem services

Outcome 2. Agropastoralists' livelihoods, natural ecosystems and productive landscapes in project sites are more resilient to climate change through the adoption of EbA practices.

Within component 2, the project will support activities to help build resilience of highly vulnerable communities of the FBR and PCT to the adverse impacts of climate change and contribute to addressing some of the drivers of environmental degradation of the target landscapes. In the two project areas, it has been observed that communities keep on using the same traditional agricultural practices, some of which being no-longer adapted to observed higher inter-annual climate variability and the increasing of extreme weather events. Indeed, local authorities, community organizations and agropastoralists lack knowledge about climate change and the crucial importance of maintaining

healthy ecosystems to mitigate its impacts. They are also not familiar with resilient and sustainable adaptation options, and consequently sometimes use alternative practices further damaging their environment. The project will therefore focus on interventions that secure livelihoods and existing ecosystem services, provide adaptive livelihoods, and counter maladaptive behavior, in turn enabling overall adaptation to climate change to take place. Under component 2, activities focusing on sustainable production will be linked to small business development in Component 3, prioritizing opportunities for women and youth.

Without the project interventions under Component 2, the lack of knowledge, and technical and financial resources will continue to strongly limit initiatives to maintain or restore ecosystem services. As a result, income from agro-pastoral activities of the FBR and urban living conditions in Thies will remain highly vulnerable to climate hazards. Without effective management of fodder resources, non-timber forest products (NTFP), and forest cover, current practices will continue to put ecosystems under strong pressure and general environmental degradation will continue, leading to further income insecurity, vulnerability of local infrastructure, and missed business opportunities.

Several initiatives will contribute to the success of this outcome through cofinancing:

- ASERGMV activities on the GGW area will inform component 2, sharing experience and lessons learned (estimated cofinancing amount for Component 2: \$200,000)
- PUDEC will finance feeder roads in the Katan? area and water drillings, contributing to market access and water availability for the local populations (estimated cofinancing amount for Component 2: \$50,000).
- PDEPS S?n?gal will continue to invest in 3 Pastoral Units of the FBR, specifically on pastoral activities and milk processing, including vegetation regeneration interventions (exclosure zones), thus contributing to overall improvement of ecosystems in the FBR and socio-economic development (estimated cofinancing amount for Component 2: \$2,200,000).
- DGPRE (AFD-funded) water resource protection project in Pout will support local communities and stakeholders around the Plateau of Thies to implement nature-based solutions aimed at recovering ecosystem services, completing the work of the proposed GEF project in another catchment area of the Plateau of Thies, both projects feeding each other with good practices and stakeholder mobilization (estimated cofinancing amount for component 2: \$3,800,000).
- UNDP will contribute in cash cofinancing to component 2 by supporting directly activities in the PCT (estimated cofinancing amount for component 2: \$130,000)

? *Output 2.1 Regeneration of degraded areas and resilience of agropastoralists to climate change are improved through sustainable grazing management and a network of enclosure and no-take zones in the FBR (IUCN)*

? *Output 2.2. Natural resources in the FBR are protected against wildfires, monitored and sustainably used (IUCN)*

? *Output 2.3 EbA measures are implemented on the Plateau to reduce flooding in the city of Thies (UNDP)*

? *Output 2.4 Assisted Natural Regeneration experience is capitalized and promoted in the Plateau of Thies (UNDP)*

? *Output 2.5. A climate-resilient green belt is restored around the city of Thies (UNDP)*

Component 3: Investment in climate-resilient value chains

Through the creation and strengthening of viable Micro and Small Enterprises (MSEs) that use biodiversity and ecosystem services in a sustainable manner, this component seeks to strengthen climate-resilient value chains, by taking a business incubation approach (i.e. by providing structured support that recruits participants to develop and commercialize products based on the sustainable use of natural resources). It aims to compensate the lack of an enabling environment for mobilizing private sector investment in EbA interventions and to overcome difficulties for small local businesses to access financial resources and take financial risks to invest in alternative resilient practices. This component will promote private sector investment in sustainable and climate-resilient value chains (Outcome 3), and support local entrepreneurs and MSEs to produce goods and services based on the sustainable use of natural resources (Outcome 4). By including the dual focus on private sector investment and support for MSE development, this component will ensure market demand and economic viability for these climate-resilient value chains is embedded in the approach. Increasing the economic value of the FBR and PCT ecosystems' productions is a means to encourage their protection and regeneration, insofar those productions are organized in a sustainable manner. The PPG studies highlighted the potential of hay production and marketing for example, multi-purpose market gardening, and a number of NTFP, some with a promising potential economic value, in particular: *Balanites aegyptiaca* (fruit and oil), *Ziziphus mauritania* (jujube dry fruit), *Adansonia digitata* (monkey bread), *Boscia senegalensis* (fruit and seed) and *Acacia Senegal* (gum Arabic).

This component will also build on experiences and lessons learned from multiple ongoing initiatives such as 'The Agricultural Development and Rural Entrepreneurship Support Program' and the second phase of the 'The Emergency Community Development Program (PUDC)'. There will be ongoing coordination with the GEF-LDCF project led by UNDP 'Promoting innovative finance and community-based adaptation in communes surrounding community natural reserves (PFNAC)', intervening in the Ferlo, which is detailed below in output 3.2.3.

The following cofinancing projects will specifically contribute to this component:

- As for components 1 and 2, ASERGMV will directly contribute to this component, linking FBR stakeholders outside of the target zones to the private sector platform (estimated cofinancing for component 3: \$100,000)

- Through its interventions on ecosystem regeneration and milk processing, PDEPS S?n?gal will pave the way for the increased use, processing and marketing of NPTF in the south of the FBR. The supported communities will therefore constitute strong candidates for support activities on entrepreneurship, processing and marketing of NPTF (estimated cofinancing amount for Component 3: \$1,000,000).
- This will be reinforced thanks to the new feeder roads built by PUDC in the Katan? area, offering better access to markets for local communities, and thus encouraging NPTF processing and marking activities (estimated co-financing amount for component 3: \$50,000).

Outcome 3. Private sector investment in value-chains producing goods and services based on the sustainable use of natural resources in a climate change context is mobilized

As a first step, the project will support the creation of a new Private Sector Platform (PSP) in both area of intervention, as well as the structuring of its different bodies. This platform will be multisectoral by intervening in all the economic sectors targeted by the project, and will aim to become the local multisectoral inter-branch organisation of the private sector. It will be set up to better coordinate the activities of the value chains promoting EbA. The PSP will associate private sector economic operators to the various economic operators of the rural sector of the Ferlo and the Plateau of Thi?s. It will aim to influence the development of the forest and agro-pastoral sectors and to get involved in the collective challenges of the value chains at the production, processing, conservation and marketing, including the distribution, stages.

Subsequently, the project will provide, through the PSP, technical assistance for market analysis and development (MA&D)[38] to identify key value chains and market access needs for economically viable products and services. Under the MA&D framework, opportunities will be identified through the assessment of the existing situation, the identification of products, markets and marketing channels, and the planning of their sustainable development, thereby supporting private sector investments in climate resilient businesses. In addition, with the objective of creating and/or strengthening MSEs based on the sustainable exploitation of natural resources managed by local communities, sustainable business development strategies for the selected value chains (approximately four, including at least two NTFP value chains) will be developed.

In addition, a strategy will be developed to catalyze private sector investments in natural resource MSEs (output 3.1.2). This will include the organization of forums for private sector actors to exchange ideas and discuss common interests and potential opportunities. A publicly accessible database will also be developed to compile, organize and share identified opportunities and benefits from investment in the sustainable use of natural resources in the two project areas. This platform will both be used to lead discussions during forums, and be updated based on the results of these encounters. The approach may need to be adapted to online forums, if COVID-19 measures prevent large meetings.

Without the project, climate-resilient value chains will continue to face a number of constraints to their optimal development, in particular disorganized access to NTFP resources, lack of knowledge on

market expectations, buyers and marketing channels, little cooperation between private sector actors, affecting their ability to regulate the use of NTFP in a sustainable manner.

•*Output 3.1. Private sector platforms are set up in both intervention areas to better coordinate value-chain activities that promote EbA (UNDP)*

•*Output 3.2. Stakeholder forums are organized to catalyze private and public sector investments towards the creation of resilient natural capital (UNDP)*

Outcome 4. Local entrepreneurs and MSEs produce goods and services based on the sustainable use of natural resources

Under this outcome, the project will provide a range of business incubation services, including technical and administrative support to establish new businesses; provide access to innovative adaptation technology and related equipment/inputs; and support access to finance. The project will support structuring new businesses where necessary, the development of sustainable business plans, and provide training on a range of topics including accounting and administration. In addition, the project will equip local MSEs with infrastructure and resilient materials for the adoption of climate-adaptive activities (e.g. establishment of nurseries, village multi-purpose gardens, fodder reserves and integrated model farms) as well as relevant agriculture and forestry equipment that support EbA (output 3.2.2). The adoption of new adaptive practices and alternative climate-resilient livelihoods will be incentivized through financial services (output 3.2.3) such as micro-credit and insurance products, to reduce climate-related financial risks, e.g. crop failure due to extreme weather events.

Without the project intervention, local entrepreneurs and MSEs will continue to face difficulties in developing their businesses, in particular due to weak managerial capacities, lack of knowledge and capacities for collecting, processing and packaging agriculture and NTFP products, and limited access to financing opportunities.

? *Output 4.1. The managerial and entrepreneurial capacity of local entrepreneurs, in particular women and youth, are supported to develop and commercialize products based on the sustainable use of natural resources, taking into account climate change (UNDP)*

? *Output 4.2. MSEs based on the sustainable use of natural resources are provided with equipment and agriculture and forestry inputs (UNDP)*

? *Output 4.3. MSEs based on the sustainable use of natural resources are provided with training to access financing opportunities to promote the adoption of resilient practices that protect and conserve targeted ecosystems (UNDP)*

Component 4: Knowledge management and communication

This component seeks to secure the long-term adoption of climate-resilient approaches within the two project zones, as well as laying the foundation for scaling up EbA in Senegal. This will be achieved

through use of the M&E data and lessons learned from the first three components to develop a strategy for scaling-up. This knowledge will be particularly relevant to inform planning and budgeting at the local, regional and national levels and for the continuous capacity building of stakeholders to support scaling-up beyond the life of the project. While this component is preparing the exit strategy of the project by capitalizing the knowledge acquired in the three first components, the activities will be carried-out all along the project implementation.

Outcome 5 Relevant local and national stakeholders incorporate climate-resilient EbA approaches into their land management activities, drawing on the experience from the FBR and Thies.

? *Output 5.1. Project monitoring system providing systematic information on progress in meeting project outcomes and output targets (UNDP)*

? *Output 5.2. A communication strategy aimed at the relevant local and national stakeholders is developed and implemented (UNDP)*

? *Output 5.3. A summary and dissemination document of the project outcomes, lessons learned and good practices is produced and disseminated (UNDP)*

? *Output 5.4. A strategy for scaling up the EbA approaches and the development of natural resource-based MSEs, including long-term financing options, is developed (UNDP)*

4/ Alignment with the GEF focal area

The project is well aligned with the GEF Programming Strategy on Adaptation to Climate Change for the LDCF and SCCF 2018-2022. In particular, it will support:

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

Entry point 1.1: Innovation and technology transfer in priority sectors and themes and private

sector engagement

? Through support to climate resilient livelihoods and value chains and engagement with the private sector to support the production of goods and services based on the sustainable use of natural resources;

Entry point 1.2: Climate security

? Considering climate security in its land-use planning activities, whereby conflicts and migration challenges are thoughtfully addressed.

Entry point 1.3: Incubation and accelerator support

? Through the creation of a private sector platform, providing technical assistance for market analysis and development to identify key value chains and market access needs for economically viable products and services

Objective 2: Mainstream climate change adaptation and resilience for systemic impact

Entry point 2.1: Mainstreaming Adaptation across GEF Themes

? Contributing to the Great Green Wall Initiative, that addresses cross-cutting themes of adaptation, mitigation, land degradation, and sustainable development; and by supporting the dissemination of improved cookstoves delivering cleaner energy solutions to vulnerable populations

Entry point 2.2: Mainstreaming Adaptation through Partnerships

? Under Component 1, through the creation of multisectoral governance mechanisms and component 3, with the establishment of partnerships with the private sector bringing in funding for adaptation action

5/ Incremental cost reasoning

In the baseline scenario, despite existing investments, development and land management / restoration projects fail to adequately link ecosystem services to resilient livelihoods. The proposed LDCF project will build upon and complement the baseline initiatives presented above to address some of the remaining barriers hindering climate resilience in the two areas of intervention. Through its first component on addressing stakeholders' capacities in planning and implementing EbA to maintain and/or create climate-resilient natural capital, the project will support governance and coordination in response to climate change risks in the FBR and the PCT, build capacities for EbA implementation, and ensure that climate-resilient land-use and management plans are efficiently implemented in the FBR. In that sense, it will complement the work conducted under ongoing baseline projects, ensuring efficient governance frameworks, appropriate capacities and planning tools are in place. Through its second component, the project will implement restoration and conservation management interventions to specifically increase resilience of natural assets and ecosystem services to climate change. Building on lessons learned and good practices from previous initiatives, including baseline projects (e.g. the very low success rate of tree plantations in Sahelian regions, illustrated by experience from various past projects, including the GGW initiative; and the positive results of the Katan? enclosure in the FBR) , the project will favor natural regeneration of ecosystems (grazing-free zones, RNA, water retention small infrastructure, sustainable grazing management) as a means to recover vegetation cover, water retention and infiltration capacities, and support conservation of wildlife. This is however only possible if local populations get direct benefits from those interventions. Component 3 will therefore support climate-resilient value-chains to add value to ecosystem services, through the sustainable use, processing and marketing of NTFP and farming/rearing products. Through this component, the project aims at establishing a direct link between ecosystem restoration and conservation and economic growth, which was not sufficiently demonstrated in previous private sector / value-chain development projects in the two target areas.

6/ Global adaptation benefits

The ecosystem restoration measures for pasture rangelands and forests in the project areas will include Assisted natural Regeneration, natural regeneration of vegetation and soils through regenerative grazing associated with small enclosure and no-take zones, re-planting of native species and small infrastructures using natural materials for water retention and storage. Those will contribute towards (i) increased soil water retention, (ii) increased biomass production, (iii) storage of atmospheric carbon, (iv) decreased erosion and loss of arable lands, (v) reduced impacts of floods, (vi) decreased sediment load in rivers and silting of river beds. These ecosystem services are the foundation of the adaptation benefits delivered by this project. Indeed, the project proposes to restore at least 800 has of forest land in the PCT, and improve the management of the entire FBR over 2,058,214 has, including pasture rangelands, as well as forest and wooded areas in the transition zone of the FBR. These restored lands, as well as existing preserved ecosystems, will form the basis of the EbA nature-based business models supported throughout the project. The strengthening of local EbA governance and support for development of nature-based MSEs covers a wider area of influence, including the 242,564 has wildlife reserve, 1,156,633 ha of buffer zone and 659,019 has of transition zone, as well as the region of Thies, which covers 667,000 ha..

In addition, adaptation benefits will also result from the strengthening of local capacity and governance for the restoration and maintenance of economically useful ecosystems. Specific adaptive benefits are estimated to directly benefit 54,000 women and 36,000 men, in particular through (i) maintained or increased livestock productivity (through fodder and water availability), (ii) new income-generating EbA opportunities, including agroforestry and tree crops which will increase the resilience of local communities by providing a diversity of fruits, nuts, medicines , fuel, timber, nitrogen fixation services, fodder, and habitat, and (iii) opportunities for recreation and ecotourism development. The ecosystem services of water retention and flood impacts reduction will also be a key contributor to the resilience of these adaptive livelihoods.

7/ Innovativeness, Sustainability and Potential for Scaling Up

The innovative nature of this project lies in the implementation of natural resource management based on the principles of EbA and natural ecosystem regeneration. Indeed, the project's strategy to restore forest cover and regenerate ecosystems in the intervention areas rejects massive reforestation initiatives that have shown high failure rates in the past. It focuses on regenerative grazing management, enclosure/no-take zones and assisted natural regeneration activities, supported by anti-erosion interventions, which allow for water recharge and reduced damages from erosion. This approach has shown positive results in other locations (e.g. very positive ANR experience in Niger; multiple

examples of regeneration through exclosure of cattle in the Sahel), granting several benefits: regeneration of forage and forest resources, improvement of soil condition, enhancement of biodiversity, with local and endemic species, increased productivity of ecosystems (increased biomass production, NTFPs, animals), improved water management and storage, reduced sand-storms, regulation of climate, among others.

These activities will form the basis for the valorization and development of resilient value chains which economic co-benefits will, in turn, ensure their sustainability.

The project design fully takes into account the maintenance and updating of equipment procured through the project, owned collectively (outcomes 1 and 2), as well as the equipment procured for private sector actors (outcomes 3 and 4). Details are available in the description of outputs in the project document. For instance, under output 2.1 'To guarantee the sustainability of the protected zones, the project will ensure that not only good quality fencing is operational and maintained through a contractual system of guarding, but also that strong buy-in of local communities occurs through the concerted use and management of the preserved resources (fodder, NTFP) to the benefit of all, especially women'. Under activity 2.2.6, the project will 'Launch consultations and procure expertise to establish a funding mechanism for long-term sustainability of the monitoring, surveillance and control of access to resources system of the FBR'. Under activity 2.3.5 the project will 'Develop a sustainable financing system for surveillance and maintenance of the protected zone'. As part of the support to the development of the Private Sector, MSEs will receive training under activity 4.2.6 on the use and maintenance of their equipment. In particular, MSEs will be encouraged to establish contractual agreements with specialised maintenance companies which will maintain and repair equipment on a regular basis, as is already applied in other projects such as the FAI initiative under APEFAM1 funded by the AFD. The output 4.3 is also dedicated to supporting MSEs to update their capacities and equipment by accessing financing opportunities. These financing opportunities will enable MSEs to have a longer-term vision and adopt and maintain resilient practices 'MSEs based on the sustainable use of natural resources are provided with training to access financing opportunities to promote the adoption of resilient practices that protect and conserve targeted ecosystems'.

Trainings and sensitizations will be given a central role along the entire project duration to ensure government and private beneficiaries understand the need to put aside resources for the maintenance and updating of the equipment. The project will continuously support beneficiaries to adjust their maintenance and updating strategy and ensure the long-term impact of the project.

In addition, the sustainability of the project interventions will benefit from feedbacks from initiatives led by local NGOs (GRAIM, Caritas...). The project also plans to finance specific studies when the proposed activities do not have their own financing mechanism at this stage (e.g. Activity 2.2.6 *Launch consultations and procure expertise to establish a funding mechanism for long-term sustainability of the monitoring, surveillance and control of access to resources system of the FBR*; Activity 2.3.5 *Develop a sustainable financing system for surveillance and maintenance of the protected zone*). As far as possible, the planned EbA activities will be undertaken very early on to enable adjustments along the project implementation in case of failures.

Scaling-up of project interventions will be specifically dealt with under Output 5.4. *A strategy for scaling up the EbA approaches and the development of natural resource-based SMEs, including long-term financing options, is developed.* New enclosure areas in the FBR and on the plateau of Thies, extended ANR, efficient NTFP value-chains may scale-up project intervention geographically and economically in the next few years. Output 1.2 will also pay special attention to the promotion of the FBR and PCT as examples of nature-based adaptation solutions to climate change challenges. In this perspective, the project will develop and implement, in close collaboration with stakeholders, a communication strategy to disseminate project results and good practices beyond the project target regions

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1b. Project Map and Coordinates

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

Due to technical issue, some maps could not be saved to the GEF Portal; please refer to Annex 2 to Project Document (p.78-84)

Ferlo Biosphere Reserve:

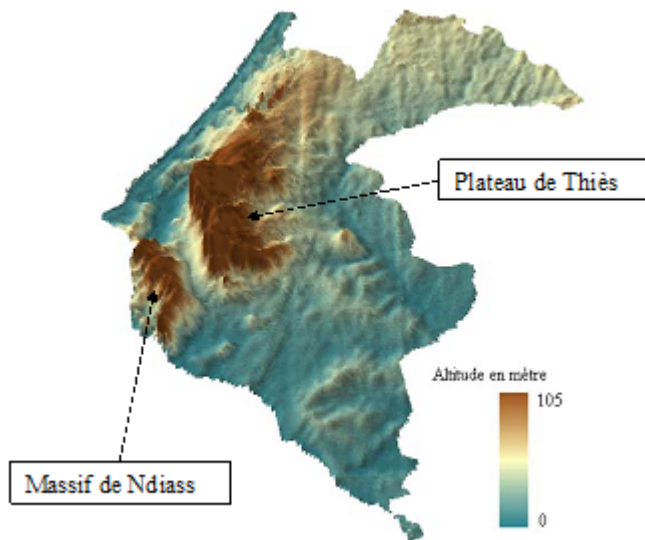
Location map of FBR communes (Ngom et al. 2011)

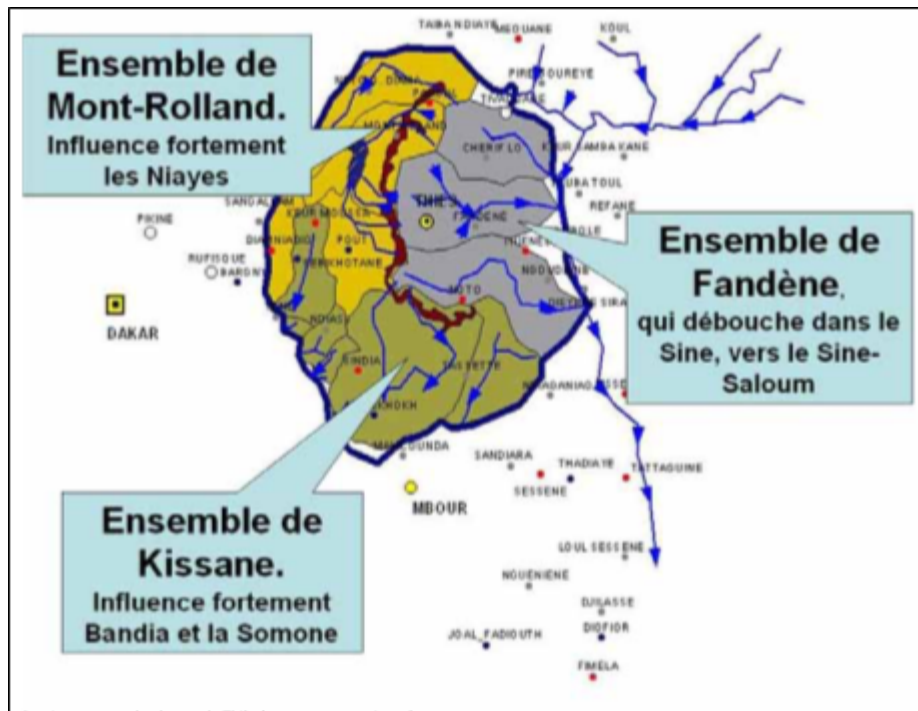
Location and zoning of the FBR (Ngom et al., 2011)

PCT :

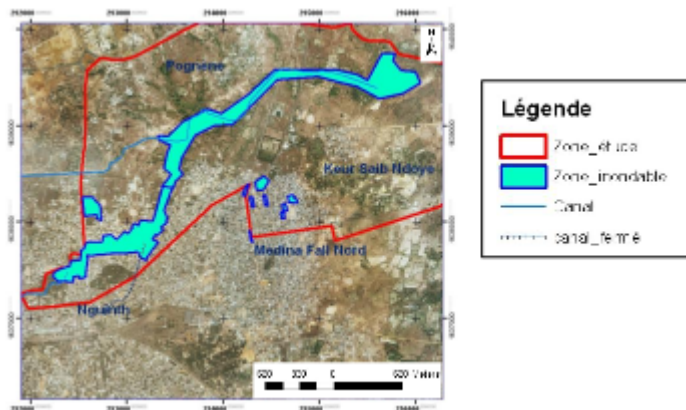


Location of the city of Thies on the plateau





Watersheds of the Thies plateau (source: www.graim.sn)



The entire flood zone located in the northern districts of Thiès (Ba et al. 2011)

p.sharepoint.com/%2Fsites/%2Fgefportal/%2FGEFDDocuments/%2Fb09cd2a3-a7ff-ea11-a815-000d3a5c09ae/%2Fceoendorsement/%2F_Annex%208%20Stakeholder%20Engagement%20Plan.docx

Stakeholder engagement

During the PPG phase, a diversity of stakeholders were involved into the project design phase, through direct consultation, face-to-face meetings, focus group discussions, field visits and workshops. The list of stakeholders involved in the PPG phase is presented in the table below:

Institution/groupe	Localisation	Type (national or regional institution, local community etc.)
Groupement Promotion féminine (GPF) de Katan?	Katan? (département de Ran?rou)	Community Association
Groupement Promotion féminine (GPF) de la commune de Ran?rou	Ran?rou	Community Association
Groupement de femmes de Houdalaye	Commune de Houdalaye	Community Association
Groupement de femmes de wendou Makam	Commune de Houdalaye	Community Association
Mairie de Ran?rou	Commune de Ran?rou	Local community
Mairie de Houdakaye	Commune de Houdalaye	Local community
Groupement de femmes de Lough?r? Thioly	Commune de Loughere Yhioly	Local community
Association KAWRAL	Yonoufere	Local Association
Secteur forestier de Ran?rou	Département de Ran?rou	Regional institution
Réserves de Faune du Ferlo Nord et Sud (Base Parcs nationaux - DPN)	Département de Ran?rou	Regional institution
ONG AVSF	Département de Lingu?re	National institution
Secteur Forestier de Lingu?re	Département de Lingu?re	Regional institution

Service d?partemental de l??levage	D?partement de Lingu?re	Regional institution
Programme d?Appui au D?veloppement Agricole et ? l?Entreprenariat Rural (PADAER)	PADAER ? Matam	National institution
Projet PADAER	D?partement Ran?rou	Regional project
Projet USAID YELI TARE	D?partement de Ran?rou	National institution
Pr?fet de Ran?rou	D?partement de Ran?rou	Regional institution
Inspection r?gionale de l??levage	R?gion de Matam	Regional institution
Inspection des Eaux et for?ts de Matam	R?gion de Matam	Regional institution
DRDR de Matam	R?gion de Matam	Regional institution
Projet PASA/LOU-MA-KAF	D?partement de Lingu?re	National institution
DEFCCS	Dakar	National institution
DPN	Dakar	National institution
DIREL	Dakar	National institution
ASERGMV	Dakar	National institution
UICN	Dakar	International institution
PUDC	Dakar	National institution
PDEPS	Dakar	National institution
Mairie de Thi?s	Thi?s	Local Community

Préfet de la ville de Thiès	Thiès	Regional institution
Agence Régionale de développement (ARD) de Thiès	Thiès	Regional institution
Inspection régionale des Eaux & Forêts de Thiès	Thiès	Regional institution
ONG ADT- GERT	Thiès	National NGO
ONG GRAIM	Thiès	National NGO
ONG Caritas Thiès	Thiès	National NGO
Service Départemental de l'Elevage de Thiès	Thiès	Regional institution
Commune de Mont Rolland	Thiès	Local Community
Commune de Notto Diobass	Thiès	Local Community
Sous-préfet de Notto Diobass	Thiès	Regional institution
Commune de Fandène	Thiès	Community
Direction Régionale de l'Environnement et des Etablissements Classés (DREEC) de Thiès	Thiès	Regional institution
Service Régional de l'Assainissement de Thiès	Thiès	Regional institution
Office National de l'Assainissement du Sénégal (ONAS) de Thiès	Thiès	Regional institution
FAO ? Sénégal	FAOSN ? Dakar Food Security & Social Protection, (Intervenant dans le Ferlo)	International institution
Enda Energie	Direction Enda Energie - Dakar	International NGO
Coopérative des ?leveurs	Coopérative des ?leveurs de Matam basée ? Ranrou	Local community institution

GIE BELEDE des Femmes transformatrices des produits forestiers et agroalimentaires	Groupeement d'Intérêt Economique des femmes des villages de Gourel Doro, T'kinguel et Wendou Makam (Ferlo)	Local community institution
Agence Nationale de Conseil Agricole et Rural (ANCAR)	Agence Nationale de Conseil Agricole et Rural (ANCAR) de Ranrou	National institution
Conseil Départemental	Conseil Départemental de Ranrou	Regional institution
Secteur forestier de Matam	Département de Matam	Regional institution
Projet de Promotion d'une Finance Novatrice et d'Adaptation Communautaire dans les Communes (PFNAC)	Antenne PFNAC Ferlo ? Ranrou	Local community institution
Coordonnation ASAMM/APEFAM SAED Délégation	Coordonnation ASAMM/APEFAM SAED Délégation ? Matam (Responsable Programme agro industrie)	Regional institution
Fédération des Unités Pastorales	Fédération des Unités Pastorales de Matam	Local community institution
Service d'veloppement Communautaire	Service d'veloppement communautaire de Matam	Local community institution
Direction Agence Régionale de Développement (ARD)	Direction ARD de Matam	Regional institution
Chef de Village	Chef du Village Toubel-bali (Ferlo)	Local community institution
GIE des Femmes de Ranrou, transformatrices agroalimentaires	Groupeement d'Intérêt Economique des femmes ? Ranrou	Local community institution
Groupeement des emboucheurs de bovins	Groupeement des Emboucheurs de Thi's	Local community institution
Cinq (5) Supermarchés - vente des produits forestiers transformés et agroalimentaires du Ferlo	Dakar Supermarkets	Urban commercial centres

Table 2: Stakeholders involved during PPG phase

A list of the main stakeholders and their proposed engagement in the project is presented in the Stakeholder Engagement Plan, in Annex 8 of the Project Document. The following is a summary of key actors:

? The main governmental counterparts include the Ministry of Environment and Sustainable Development (MEDD) through the Senegalese Agency for Reforestation of the Great Green Wall (ASRGM), which is the National GEF focal point and will ensure the execution of the project.

? Directorate of Water and Forests, Hunting and Soil Conservation (DEFCCS) and the National Parks Directorate (DPN) under the MEDD will provide a structural basis to coordinate with for the implementation of a unique natural resource management framework of the Ferlo Biosphere Reserve.

? The City of Thies will be directly involved in the delivery of activities in the Thies region and will provide office space for the team work.

? Under the ministry of Agriculture, the Regional Directorate for Rural Development (DRDR) and National Agency for Agricultural and Rural Consulting (ANCAR) will be key actors for capacity building and technical support of producers and agropastoralists.

? The ANACIM being the national meteorological institution under the Ministry of Air Transport and Airport Infrastructure Development (MTADIA), it will have a critical role to play in the improvement and diffusion of valuable and certified climate information. It will be supported through equipment supply and trainings.

? The Inspection of water and forestry (IREF) will participate to the design, lead and supervise the implementation of anti-erosion and assisted natural regeneration techniques in the PCT.

Locally, the main stakeholders within the beneficiary population of the project are:

- Members of PUs will play a key role in mobilizing pastoralist groups around project interventions;
- NGOS active in the target areas, in particular GRAIM and ADT GERT in the PCT, which will contribute to preoject implementation in the field.
- Women and youth organizations represent the most vulnerable populations, more severely stricken by poverty and with lower adaptation capacity since they are in the margin of the economic life. As such, they constitute an important target group for the project;
- Community leaders will be mobilised to bring other stakeholders together, building on their influence and political credibility to enforce the project intervention strategy. They will also be key partners in supporting women empowerment and integration in decision making bodies;

- Entrepreneurs (GIE, GPF) will play a strategic role in creating sustainable jobs and incomes that increase community resilience.

A Grievance Redress Mechanism will be set up to collect grievances or objections from potentially affected stakeholders.

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

Stakeholder name - institution	Mandate	Participation in the project (in the main outputs)
Governance		
<i>Ministry of Environment and Sustainable Development (MEDD)</i>	<p>Prepares and implements national environmental policies. In charge of several relevant Directorates for the project:</p> <ul style="list-style-type: none"> - <i>Senegalese Agency for Reforestation of the Great Green Wall (ASRGM)</i>, project executing entity. - <i>Directorate of the Environment and Classified Establishments (DEEC)</i>, focal point to the UNFCCC. - <i>Directorate of Water and Forests, Hunting and Soil Conservation (DEFCCS)</i>, which manages the Southern Part of the Ferlo Reserve. Also in charge of the <i>Inspection of water and forestry (IREF)</i> which supports local planning Development and management of forests and silvopastoral reserves and will lead restoration actions in the PCT. - <i>National Parks Directorate (DPN)</i>. Planning support Development and management of parks and nature reserves. Manages the Northern Part of the Ferlo Reserve. - <i>Directorate of Planning and Environmental Monitoring (DPVE)</i> monitors the ministry's actions to fulfill its missions and objectives. Gathers data and study results to inform decision-making. - The gender unit and the gender focal points of the various technical services. <p>Deconcentrated services of the MEED. Ensure the implementation of the MEDD's policies at the regional, departmental and local levels.</p>	<p>(all)</p> <p>(all)</p> <p>(all)</p> <p>(1.1; 1.2; 1.3)</p> <p>(2.3; 2.4; 2.5)</p> <p>(1.1; 1.2; 1.3)</p> <p>(all)</p> <p>(all)</p> <p>(all)</p>
<i>City of Thies</i>	Administers the city territory and citizens. Will be directly involved in project activities delivery in Thies and in the Thies region.	(1.1, 1.2, 2.3, 2.4, 2.5, 3.1, 3.2, 4.1, 4.2, 4.3)

<p><i>Ministry of Agriculture and Rural Equipment (MAER)</i></p>	<p>Prepares and implements national agricultural policies. In charge of several relevant directorates for the project:</p> <ul style="list-style-type: none"> - <i>Regional Directorate for Rural Development (DRDR)</i> coordinates the implementation of policies to achieve the region's agricultural and rural development objectives, defines agricultural policy measures adapted to local conditions, provides technical support to producers. - <i>National Agency for Agricultural and Rural Consulting (ANCAR)</i> supervises producers and participates in capacity building for the main production activities (for the project: NTFPs, market gardens, etc.) - <i>National Institute of Pedology</i>. Focal point for the UNCCD, ensures the monitoring of degraded soils. <p>Deconcentrated services of the MAER ensure the implementation of the MAER's policies at the regional, departmental and local levels.</p>	<p>(all)</p> <p>(1.2; 1.3; 2.1; 2.4; 3.1; 3.2; 4.1; 4.2; 4.3)</p> <p>(1.2; 1.3; 2.1; 2.4; 3.1; 3.2; 4.1; 4.2; 4.3)</p> <p>(2.1; 2.3; 2.5)</p>
<p><i>Ministry of Livestock and Animal Production (MEPA)</i></p>	<p>Prepares and implements national policies relating to animal husbandry. Ensures that livestock and pastoralism are taken into account in the development of rural areas. Ensures the improvement and protection of pastures, water supply for livestock, animal health and genetic improvement of livestock. Encourages the construction of pastoral infrastructures. In charge of the <i>Livestock Directorate (DIREL)</i>, which supports the implementation of PUs at the local level.</p> <p>Deconcentrated services of the MEPA. Ensure the implementation of the MEPA's policies at the regional, departmental and local levels.</p>	<p>(1.3; 2.1; 3.1; 3.2; 4.1; 4.2; 4.3)</p>
<p><i>Ministry of Women, Family and Gender (MFFG)</i></p>	<p>Prepares and implements national policies in terms of family policy, promotion of women and gender and protection of children. Ensures gender equality through the National Equity and Equality Strategy (SNEEG). Institutionalizes gender in strategic environmental and natural resource management policies and programs.</p>	<p>(all)</p>
<p><i>Ministry of Territorial Collectivities, Development and Territorial Management (MCTDAT)</i></p>	<p>Prepares and implements national policies on decentralization and local development. Supports and controls local authorities as well as implements training policy for elected officials.</p> <p>In charge of setting up the <i>Regional Development Agencies (ARD)</i>, which are coordinating and facilitating bodies that bring together departments and municipalities within the same administrative district. Provide free assistance to local authorities in all areas of activity related to planning and development of communes. Supports the process of capacity building and integration of climate change and into local planning documents.</p> <p><i>Regional, Departmental and Local development committees (RDC, DDC and LDC)</i> are intersectoral coordination frameworks which come together around themes such as agriculture, reforestation, firefighting, bush, rural hydraulics. Allow information sharing and decision making.</p>	<p>(1.1; 1.2; 3.1; 3.2; 4.1; 4.2; 4.3)</p> <p>(1.1; 1.2; 3.1; 3.2; 4.1; 4.2; 4.3)</p>

<i>Ministry of Air Transport and Airport Infrastructure Development (MTADIA)</i>	<p>Prepares and implements national tourism and air transport policies.</p> <p>In charge of the <i>National Agency of Civil Aviation and Meteorology (ANACIM)</i>, focal point of the IPCC, supervising all meteorological activities and editing technical regulation about meteorology in accordance with the standards of the World Meteorological Organization (WMO). Manages the meteorological station of Thiès and will participate to the development of trainings about climate change based on reliable and certified data.</p>	(1.2)
<i>Ministry of Water and Sanitation (MEA)</i>	<p>Prepares and implements national water and sanitation policies.</p> <p>In charge of the <i>National Office for Sanitation in Senegal (ONAS)</i>, responsible for planning and programming of investments and project management design and control of wastewater and stormwater infrastructure studies and works. Manages urban sanitation (i.e pumping stations) in the city of Thiès.</p>	(2.3; 2.4; 2.5)
Territorial authorities		
<i>Governors, prefects and sub-prefects</i>	Administrative authority at regional, departmental and local (district) levels.	(1.1; 1.2; 3.1; 3.2; 4.1; 4.2; 4.3)
<i>Departments</i>	<p>With a legal personality and financial autonomy. They are freely administered by councils elected by universal suffrage.</p> <p>Carries out the departmental development plans and organizes the development of the territory while respecting the integrity, autonomy, and attributions of other local authorities. Hosts commissions for the environment, land use planning, urbanism, and habitat.</p>	(1.1; 1.2; 3.1; 3.2; 4.1; 4.2; 4.3)
<i>Municipalities</i>	<p>With a legal personality and financial autonomy. They are freely administered by councils elected by universal suffrage.</p> <p>Manage the general land use plan, development projects, subdivisions, equipment of perimeters assigned to housing, as well as the authorization of installation of dwellings or camps.</p>	(1.1; 1.2; 3.1; 3.2; 4.1; 4.2; 4.3)
Producer organizations and private sector		
<i>Pastoral Units</i>	Community-based organization. Brings together all the villages polarized by a pastoral borehole within a radius of 10 to 20 km and agreeing to join forces for the sustainable management of their territories.	(1.3; 2.1; 3.1; 3.2; 4.1; 4.2; 4.3)
<i>Women's Promotion Group (GPF)</i>	Brings together self-employed women from the same village who share common interests. In these structures, women pool resources, ideas and experiences, and develop shared activities to increase their income.	(1.1; 1.2; 1.3; 2.1, 2.6; 3.1; 3.2; 4.1; 4.2; 4.3)
<i>GIE</i>	In these structures, members pool their activities in order to develop, improve or increase economic results.	(1.1; 1.2; 2.1; 3.1; 3.2; 4.1; 4.2; 4.3)
Civil Society and Non-Governmental Organization		
<i>Kawral</i>	Intervenes in the field of empowerment, information, and sensitization of natural resource users. It is involved in assisted natural regeneration (ANR) and reforestation, good governance of PUs (information and awareness, management measures, monitoring, fight against bush fires).	(1.3; 2.1; 2.3; 2.4; 2.5; 3.1; 3.2; 4.1; 4.2; 4.3)

<i>Agronomists and Veterinarians Without Borders (AVSF)</i>	Contributes to the improvement of the performance of the economy and the pastoral breeding in a context of climate change, in the FBR.	(2.1)
<i>ADT/GERT</i>	Aims at improving the living conditions of the populations by using ecological methods adapted to the environment.	(2.3; 2.4. 2.5)
<i>GRAIM/ENDA</i>	Involves in activities such as health, environment, economy, with support to community development institutions and organizations as a transversal area. Led a local project aiming to strengthen the capacity of adaptation and resilience to climate change in 6 communes of the Plateau de Thi's where it carried out an analysis and mapping of the watersheds.	(2.3; 2.4. 2.5)
<i>CARITAS</i>	Capitalized a great experience in the implementation of DRS/CES actions through medium and long term strategies, based on trainings combining agricultural techniques and fight against the degradation of ecosystems techniques.	(2.3; 2.4. 2.5)

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier;

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

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

Gender equality is at the core of the proposed project that will use a gender-responsive approach throughout all its components, and was designed using a specific gender lens, in particular by taking a gender analysis angle at PPG stage. The results of this analysis (Annex 10) have guided the project conception.

In the RBF, the pastoralist system that governs the organization of society is highly patriarchal and the division of domestic labor is unequal and unbalanced for women. In the PCT region, the social

organization system is divided between modernity and traditionalism, where current dynamics such as increasing urbanization, unemployment, and formal work are revolutionizing the restrictive vision of women as mothers and moral and emotional supporters of the family. Overall, their time is constrained by family obligations, which they must sometimes reconcile with economic activities, allowing them a relative financial autonomy. However, they remain assigned to certain time-consuming tasks such as collecting water and firewood. This diverts them from the different levels of decision-making bodies. Considering these points, the main recommendation resulting from the diagnosis established during the PPG phase is to ensure through the project the transversal integration of gender:

- In local and environmental governance through the effective participation of women in decision making in the promotion of the safeguarding of ecosystems;
- In actions aimed at preserving and restoring ecosystems through the consolidation of women's economic activities in order to move towards their economic and social empowerment;
- In initiatives aimed at expanding access to basic social services to improve living conditions and meet the practical needs of women.

For this purpose, the gender approach will be integrated transversally among outputs and activities of the components 1, 2, 3 and 4.

Under component 1, specific activities will be implemented to reinforce the capacities of communities, local, administrative authorities and technical staff on women leadership, gender approach, women's rights and the link to climate change. Women leaders will be identified to integrate the organizational arrangements of the local committees.

Under Component 2, women's groups will be integrated into the consultative processes around the newly created no-take zones network and exclosures, in the RBF, as well as the development of anti-erosion schemes in the PCT. Their economic autonomy could be enhanced by their hiring into the monitoring activities in both intervention zones. Finally, the burden of domestic chores will be lightened by the distribution of energy-efficient stoves.

Under component 3 and 4, women will be fully involved in the management of the PSP and forum organization. Moreover, promising women led enterprises will be identified to benefit from the project capacity building in entrepreneurship, technical aspects of the operation of promising resilient sectors (NTFP, animal by-products), but also general skills in business management, accounting, training on the operation and maintenance of equipment acquired. Finally, they will also be trained to micro-financing mechanism and insurance schemes to improve their financial capacities and resilience to climate change.

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

Yes

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

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

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

4. Private sector engagement

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

Private sector is a direct beneficiary of the project interventions. Indeed, component 3 of the LDCF project is dedicated to private sector development and resilience building, through the engagement of local entrepreneurs (mainly women groups, smallholder farmers groups or cooperatives, community members groups) into sustainable value-chains, organisational support and capacity building. These private sector stakeholders are the main target of components 3 and 4, which will build their capacities to sustainably use and add value to natural resources through storage, processing and marketing of products, enhancing their resilience to climate change.

Private sector will also be involved into governance development under component 1, in particular in the PCT where large companies operate. Those companies strongly impact ecosystem degradation, and the project will engage with them to raise awareness and promote the adoption of sustainable interventions. This will be supported by the adoption of management plans in the project intervention areas, which is expected to impact the operations of these companies, and incentivize sustainable practices. Close collaboration with the DGP/AFD Pout project, which engages directly with those large private sector actors to adopt a concerted governance framework, will enable more leverage and ensure a broader impact for both projects with regards to the private sector engagement in the targeted areas.

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):

A complete Risk Register is included in Annex 7 of the project document. It includes some risks identified in the project identification form (PIF) as well as newly identified risks. The risks are of different nature, but mainly relate to a lack of cooperation, for various reasons, between strategic bodies and stakeholders potentially involved in the management of natural resources. In a nutshell, the following key risks were identified:

? Turnover in government agencies

- ? Appropriation of the project for political purposes
- ? Climate variability and climate extremes
- ? Potential downgrading of a large part of the classified forest of Thi's
- ? Lack of coordination between DPN (RBF North) and DEFCCS (RBF South)
- ? Resistance of the local patriarchal aristocracy to women empowerment
- ? Low buy-in from local communities
- ? Global and regional health emergencies
- ? Unsustainability of business models and management capacities in rural areas
- ? Unmaintained and unoptimized equipment

Table 3: Risks and mitigation measures

	Risk	Description	Type	Level	Mitigation measure
1	Turnover in government agencies	Frequent turnover in government agencies lead to limited institutional memory and disruptions and/or delays in program implementation, which could jeopardize the sustainability of the program.	Institutional	High	Decisions, best practices and lessons learned will be documented throughout the project in order to consolidate the institutional memory that will support project activities. This memory will also be strengthened through the online platform that will be developed. EbA protocols will be developed in French and in the main local languages to guide new staffs involved in the implementation of EbA during and after the project. UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk

2	Appropriation of the project for political purposes	Information gathered in the field indicates the presence of numerous political factions in both project zones that could lead to refusal to collaborate with certain mayors and local elected officials for the establishment of concerted resilient management plans and actions.	Political	High	<p>To limit partisan political actions, it is important to involve all communities in a local consultation framework with the presence of neutral state institutional actors (prefect and sub-prefect).</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>
3	Climate variability and climate extremes	Climate variability and extreme weather events undermine the implementation of interventions and lead to economic losses and/or material damage.	Environmental	Moderate	<p>The project will integrate information on local vulnerabilities to climate change by developing a close collaborative relationship with ANACIM - in order to integrate up-to-date weather forecasts into the EbA protocols and the processes for updating these protocols. In addition, the partnership with ANACIM will also be established to prepare for extreme climate event.</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>
4	Potential downgrading of a large part of the classified forest of Thi's	In a context of significant urban expansion, it is possible that some areas will be downgraded for urbanization and economic activities.	Political	High	<p>Strengthened governance bodies will ensure that the project's interventions will be implemented on sites that will not be subject to any future downgrading. UNDP is responsible for this risk.</p>

5	Lack of coordination between DPN (RBF North) and DEFCCS (RBF South)	Each of the two Directorates could defend and promote the GIE, GPF and communities within its area of intervention, promoting the clan spirit, reducing the idea of building a project for the collective good.	Institutional and technical	Moderate	<p>Organize management meetings between the two reserve entities to harmonize their visions and common objectives.</p> <p>IUCN is responsible for this risk.</p>
6	Resistance of the local patriarchal aristocracy to women empowerment	In the Ferlo biosphere reserve, the values system is built around the submission of women to male domination. This project must consider forms of resistance from the traditional patriarchal authority.	Social	High	<p>A gender analysis and action plan was formulated during the PPG phase and will be followed during project implementation.</p> <p>In particular, male community leaders, heads of households who will be voice bearers for women's empowerment will be identified. The project will also organize trainings on women's rights and entrepreneurial skills addressed to men and women of the communities.</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>

7	Low buy-in from local communities	Because of economic constraints or failure to considerate their interests in the design of activities, communities may not adhere and continue to have environmentally degrading behaviors.	Social	Moderate	<p>The involvement and empowerment of communities in the management of natural resources is crucial. This will be promoted by raising awareness, integrating them into the consultation processes as well as their active participation in restoration actions. In addition, it is important to support them in the establishment of value chains whose resilient character is assimilated and understood.</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>
8	Global and regional health emergencies	Global and regional health emergencies, such as the current SARS Cov-2 (COVID-19) pandemic, regional viral outbreaks and other widespread contagious events are likely to occur in future however are typically limited in time. This may delay and disrupt project activities but will not prevent their implementation.	Environmental	Low	<p>Maintaining flexibility, proactive program management and adapting technologies to new crisis situations will help ensure implementation. Understanding how the disease spreads will help the project implement necessary health and sanitary precautions, as well as leveraging novel ways of communicating (radio, TV, mobile phone) will help mitigate against delays.</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>

9	Unsustainability of business models and management capacities in rural areas	Unsustainable business models, negative socio-economic behavior and unintended economic impacts could appear.	Economic	Moderate	<p>The project will address the identification, establishment and operation of community-managed enterprises using a phased approach that will identify successful practices, provide training to fill capacity gaps and apply strict selection criteria to minimize exposure to failure. Continuous training and access to extension services for entrepreneurs through national directorates (ASRGM, DPN, DEFCCS) will focus on strengthening the capacity of beneficiaries to manage investments beyond the project period.</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>
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10	Unmaintained and unoptimized equipment	The infrastructure and equipment acquired under the project could not be maintained and operated efficiently or optimally.	Technical	Moderate	<p>Long-term monitoring and maintenance plans for the equipment purchased will be established to support businesses in the natural resources sector (e.g. generators, value-added processing equipment for forest products and agriculture). A portion of the project resources will be used: (i) to train the extension staff of national directorates (ASRGM, DPN and DEFCCS) in the use and maintenance of the equipment purchased, especially women; and (ii) to maintain the machinery and equipment (including replacement of parts as necessary).</p> <p>UNDP is responsible for PCT- and IUCN is responsible for FRB-related risk</p>
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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.

Section 1: General roles and responsibilities in the projects? governance mechanism

The graph below on the project organization structure outlines Project?s governance and management structures, including the different roles and responsibilities of the parties involved in governing and managing the project. The project governance structure will ensure UNDP?s and IUCN?s accountability for programming activities, results, monitoring and management of risks, and the use of resources, while at the same time fostering national ownership and alignment with national processes. The different roles and responsibilities within the Project?s governance structure and project staffing summarised in the graph on Management arrangements are described in detail in the UNDP Project Document (Section 8) and IUCN Document (Section 1, Part 3).

The GEF Implementing Agencies (IA) are UNDP and IUCN. The Implementing Partner (GEF local executing agency) for this project is the Senegalese Agency for Reforestation of the Great Green Wall

(ASERGMV). Although UNDP is the lead agency, both UNDP and IUCN are jointly accountable to the GEF for the implementation of this project. This includes oversight of project execution undertaken by the Implementing Partner to ensure that the project is being carried out in accordance with agreed UNDP, IUCN and GEF policies and procedures. UNDP and IUCN are jointly responsible for the Project Assurance function in the project governance structure and presents to the Project Board and attend Project Board meetings as a non-voting member.

The Project will work closely with the City of Thies (as a responsible party), other government Department and government agencies under these Departments as well as associations and organisations of local government, private sector and NGOs.

The **Project Management Unit (PMU)**, will be housed within the ASERGMV in Dakar. The PMU will implement the project activities for both IUCN and UNDP and ensure financial and administrative coordination, with support from two technical assistants sitting in the two target regions (see below). The PMU will consist of one Project Manager (PM), one Finance and Administration Manager, one procurement specialist, one M&E/communication/ gender specialist, one project assistant and 2 drivers. The project will also develop MoUs with the Ministry of Environment and Sustainable Development (MEDD) (covering the Directorate of Waters and Forests, the Directorate of National Parks, and the Directorate of Environment), and the National Agency for Spatial Planning, to support the execution of planned activities.

The **National Technical Committee** will meet twice a year and consist of the following institutions: ASERGMV; DEFCCS; DPN; DPVE; DEEC; CSE; ANCAR, INP, DIREL; DAPSA; ANACIM; PUDC, PNDL; SG of the City of Thiès; UCAD and ISRA. The Technical Committee, coordinated by ASERGMV, will support and advise the PMU for the detailed planning of certain actions and the effective mobilization of relevant actors. The technical committee will be able to call upon the services of any person whose skills and expertise in the fields related to ecosystem management and climate change adaptation are recognized.

Two Technical Assistants (one per region), will be recruited and sit in each project intervention area). They will ensure the day to day coordination and monitoring of project activities and results in the field, working closely with deconcentrated technical services and other involved stakeholders and beneficiary communities.

In the FBR, the technical assistant will be housed within technical services of the Ministry of Water and Forests and of the National Parks Agency (joint office of the Directorate of Waters and Forests and the Directorate of National Parks in Ranerou), which will nominate two focal points for the project. Planning of field activities will be done without distinction between the north and south of the reserve, but through a close coordination between these three stakeholders. In the city of Thiès, the technical assistant will be housed within the city's services (General Secretariat of the City of Thies), which will designate a focal point as main contact person in the planning and conduct of activities. Focal points will play a key role in anchoring the project within the concerned institutions, monitoring project activities, mobilizing key partners and stakeholders, and linking the project to relevant national initiatives.

In addition, **Local Technical Committees (LTCs)** will play the role of local steering committees, reflecting the decisions of the Project Steering Committee (PSC) and the national technical committee. The following stakeholders will be involved in the LTCs:

? For the Thi's region: city of Thi's, municipalities of Fand'ne, Notto Diobass, and Mont Rolland, NGOs (GRAIM[1] ; ADT GERT[2] in particular);

? For the FBR region: municipality of Houdalaye; NGOs Kawral and AVSF[3].

? In both target regions: IREF[4]; DRDR[5]; ARD[6]; ANCAR; DREEC[7]; IRSE.

LTCs will meet twice a year and support the focal points and the two technical assistants in the execution of the planned activities and mobilization of local stakeholders. They will examine all issues related to ecosystem management involving communities and participate in the development and implementation of the Annual Work Plan (AWP).

Project stakeholders and target groups:

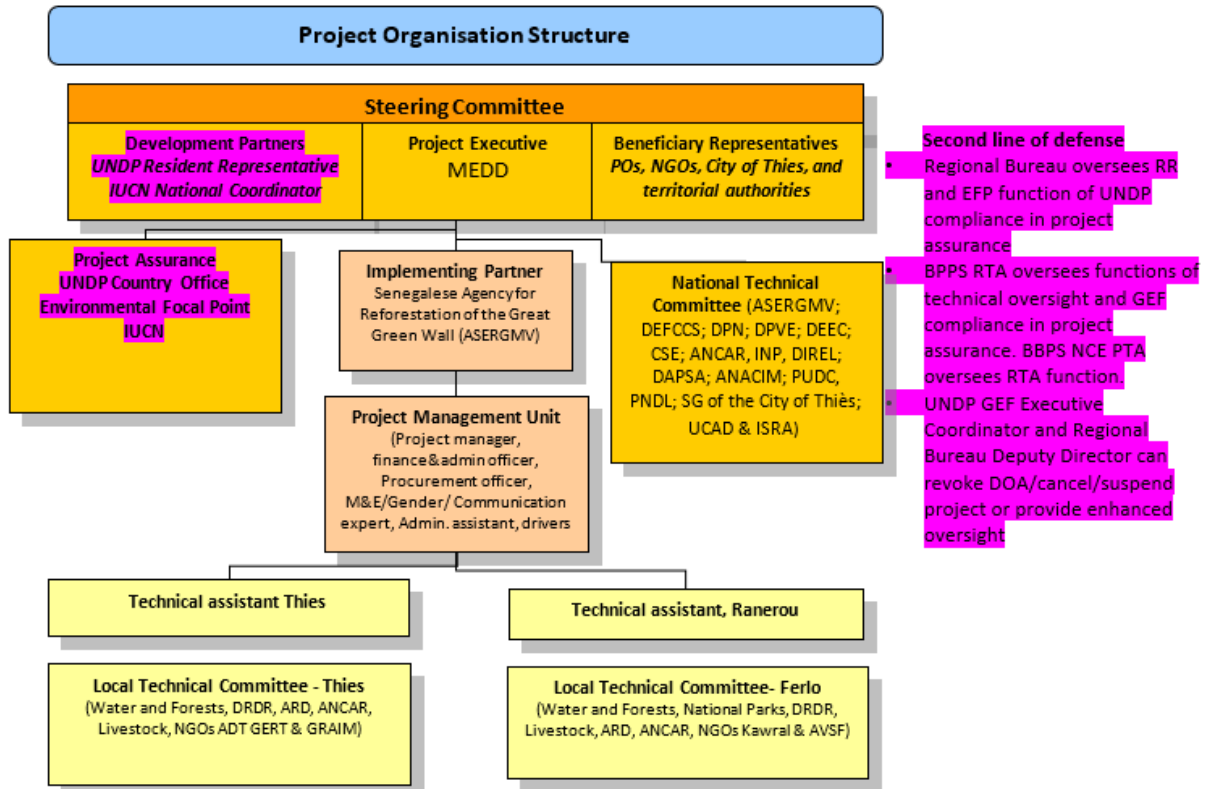
The project will rely on institutional structures (State services, local authorities) and civil society organizations at the central and local levels.

ASERGMV, in conjunction with the PMU, will ensure institutional capacity building, coordination and monitoring and evaluation and will work in close collaboration with the technical departments of the MEDD (DEFCS, DPN, DEEC and DPVE) and the City of Thi's; it will sign partnership agreements with them and the technical departments in the implementation of activities respectively in the FBR and on the Thi's plateau. All activities related to ecosystem management in the field will be planned and monitored by these entities, in close coordination with relevant institutions such as DGPRE, ANACIM, DIREL, IREF, ISRA, SAED, COMRECC and ARDs of the two target regions.

Through agreements with ASERGMV, the NGOs Kawral and AVSF in the FBR and ENDA GRAIM and ADT GERT will be designated to provide the groups and their members with technical, organizational and economic assistance to ensure proper implementation of activities and operational monitoring. Other sectoral structures will be involved in the implementation of the project through specific activities on the basis of memoranda of understanding, notably the communities, the CSE, ANCAR, or other implementing NGOs.

Through the LTCs, target groups including local communities, pastoral units, and women's groups will be regularly consulted on activities to be implemented and actively involved in decisions which affect them

Section 2: Project governance structure



UNDP and IUCN are only performing an implementation oversight role in the project vis-à-vis our role in the project board and in the project assurance function and therefore a full separation of project implementation oversight and execution duties has been assured.

Roles and Responsibilities of the Project Organization Structure:

a) Project Steering Committee (PSC): All UNDP and IUCN projects must be governed by a multi-stakeholder committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the Project Steering Committee) is the most senior, dedicated oversight body for a project. The roles, responsibilities and requirements of the PSC are detailed in the UNDP Project Document.

Composition of the PSC: The composition of the PSC must include individuals assigned to the following three roles:

1. **Project Executive:** This is an individual who represents ownership of the project and chairs (or co-chairs) the PSC. The Project Executive is the Ministry of Environment and Sustainable Development.
2. **Beneficiary Representative(s):** Individuals or groups representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the PSC is to ensure the realization of project results from the perspective of project beneficiaries. The Beneficiary representative are: POs, NGOs, City of Thies, and territorial authorities (to be confirmed at project signature)
3. **Development Partner(s):** Individuals or groups representing the interests of the parties concerned that provide funding, strategic guidance and/or technical expertise to the project. The Development Partners are: UNDP Resident Representative and IUCN National coordinator, who will ensure the policies of UNDP, IUCN and the GEF are complied with.

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b) **Project Assurance:** Project assurance is the responsibility of each PSC member; however, UNDP and IUCN have a distinct assurance role in carrying out objective and independent project oversight and monitoring functions. UNDP and IUCN perform quality assurance and support the PSC (and Project Management Unit) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP and IUCN. The PSC cannot delegate any of its quality assurance responsibilities to the Project Manager. Project assurance is totally independent of project execution. Designated representatives of UNDP and IUCN, playing the project assurance role, are expected to attend all PSC meetings and support PSC processes as a non-voting representative.

c) **Project Management ? Execution of the Project:** The Project Manager (PM) (also called project coordinator) is the most senior representative of the Project Management Unit (PMU) and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The project manager typically presents key deliverables and documents to the PSC for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers. A designated representative of the PMU is expected to attend all PSC meetings and support PSC processes as a non-voting representative. A national technical committee and two local technical committees (in the Ferlo and Thi's) will be set up for the review and validation of project deliverables. They will include competent technical services, NGOs, municipal environment commissions and any additional stakeholders, as relevant.

Coordination with other relevant GEF-financed projects and other initiatives

The project will leverage partnerships with various stakeholders as presented in the section below on stakeholder engagement, some of which will be directly involved in the implementation of activities and the provision of training (e.g. through the technical committee set-up under component 1). As part of Component 3, the project will also contribute to building strong business partnerships between beneficiary cooperative or individual businesses and private sector actors, and address some of the key barriers to local engagement in green businesses such as lack of financial resources.

Furthermore, the project will seek to work collaboratively with other ongoing initiatives. Besides projects coming as cofinancers of the proposed LDCF project, below is a list of projects with which the project will seek to coordinate during implementation, to support the achievement of project objectives while avoiding a duplication of efforts:

? *Senegal National Adaptation Plan*, UNDP-GEF. In Senegal, the NAP aims to strengthen the capacity of sectoral Ministries and local governments to better assess the implications of climate change and to adjust existing policies and budgets for the integration of medium and long-term climate change risks and adaptation measures. Active in Matam, interactions with the NAP with the proposed LDCF project will be encouraged.

? *Large-scale Assessment of Land Degradation to guide future investment in SLM in the Great Green Wall countries*, UNEP-GEF. This project aims to draw on data from the national and regional levels of the GGW initiative to a) improve science in SLM interventions b) determine success based on scientific data, and c) provide science-based feedback to relevant stakeholders (field staff, the scientific community, CSO, Private sector, policymakers, and the community) for future investments. The project will assess the ecological and socioeconomic impacts of land degradation and SLM practices to guide future investment decisions in the GGW. The proposed LDCF project will benefit from the assessment to refine its interventions geographically and technically.

? *Senegal Sustainable Cities Initiative*, World Bank/UNIDO-GEF. This project aims to improve capacity to plan and implement sustainable city management practices, including climate resilience, in selected urban areas, including the Dakar-Diamniadio axis. The proposed LDCF project interventions in the Thies area (close to the greater Dakar area) face similar urban planning and management challenges in the face of climate change, and will benefit from the Sustainable Cities Initiative experience and best practices. Interventions in the plateau of Thies may also impact how other catchments of the Plateau, linking to Diamniadio area, are managed.

? *Promoting innovative finance and community based adaptation in communes surrounding community natural reserves (Ferlo, Niokolo Koba, Senegal river Bas Delta & Saloum Delta)*, UNDP-GEF. This project aims to promote sustainable financing mechanisms and community based adaptation in communes surrounding community natural reserves (including the FBR). Specific synergies on financing mechanisms for EbA *will be identified under component 3 of the proposed LDCF project*.

In addition, other projects under development will have strong synergies with the proposed UNDP/IUCN GEF project, shall they be confirmed for implementation in the coming years:

- The IFAD/UNCCD GCF Programmatic Framework to support countries in implementing the Great Green Wall Initiative under preparation, will support the scaling up of efforts to build the resilience of rural communities, smallholder farmers and agri businesses to environmental degradation and climate change impacts in the GGW areas of intervention

- Sustainable Management of Senegal's Forest Ecosystems for Climate Resilience and Mitigation (UNDP-GCF): the project aims to increase the resilience of Senegal's low-income rural communities vulnerable to the impacts of increased climate variability including climate-induced floods and droughts, through Payment for Forest Ecosystem Services (PFES) to ensure the long-term and sustainable implementation of conservation measures and management of forest ecosystems. It will in particular cover part of the administrative region of Thies.

Coordination with other projects and programmes

Name of project	Brief description	Area of coordination
PADAER (Agricultural development and Rural Entrepreneurship Support Program, phase II),	Funded by IFAD and started in 2019 for 5 years, PADAER aims to reduce rural poverty and stimulate economic growth by strengthening actions to improve production (hydro-agricultural and pastoral infrastructures) and marketing, and stimulate rural employment, in particular for women and the youth, in rural communities in 4 regions, including the Matam region.	PADAER will cooperate closely with the proposed LDCF project, linking rural entrepreneurship to EbA interventions
PDEPS S?n?gal (Project for Sustainable Development of Pastoralism in the Sahel)	Started in 2018 for 5 years, aims at contributing to the improvement of livestock production to increase income and reduce food and nutritional insecurity of vulnerable populations through the development of agropastoral infrastructures, development of the milk and small ruminants value chains and support to institutional and organizational capacities.	PDEPS will closely coordinate activities with the proposed LDCF project, which EbA approach to climate change resilience and sustainable value-chain development activities will complement PDEPS interventions

Protection of the water resources of the Pout catchment area through nature-based solutions	Ffunded by AFD and implemented by the Directorate of Water Resources Management and Planning (DGPRES), this US\$5,903,187 aims to improve ground water governance and cooperation between the many stakeholders using the resource, and improve ground water recharge to maintain the water table level	Close coordination with this project will be sought as there is joint interest in water governance improvements and the implementation of nature-based solutions, involving similar stakeholders and strong potential for lessons learned and best practices sharing.
Promotion of Climate-Friendly Cooking in Kenya and Senegal	This GIZ/GCF project aims to increase the use of improved cookstoves by accelerating sustainable market growth. Started in 2021 for 5 years.	Interventions on improving the efficiency of cooking will directly contribute to reducing the pressure on PCT and FBR ecosystems, supporting restoration activities from the proposed LDCF project to reach their objectives. Close coordination between the 2 proeject teams will therefore be organised.

Table 4: Coordination with projects and programmes

[1] Groupe de Recherche et d'Appui aux Initiatives Mutualistes (Research and Support Group for Mutualist Initiatives)

[2] Association pour le D?veloppement des Technologies et la Gestion de l'Espace et des Ressources des Terroirs (Association for the Development of Technologies and Management of Space and Land Resources)

[3] Agronomes et V?t?rinaires Sans Fronti?res (Agronomists and Veterinarians Without Borders)

[4] Inspection r?gionale des Eaux et For?ts (Regional Inspection of Water and Forests)

[5] Directions R?gionales de D?veloppement Rural (Regional Directorates of Rural Development)

[6] Agence r?gionale de d?veloppement (Regional Development Agency)

[7] Divisions R?gionales de l'Environnement et des Etablissements Class?s (Regional Divisions of the Environment and Classified Establishments)

7. Consistency with National Priorities

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

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

As part of an early response to the challenges posed by a variable and changing climate, the Government of Senegal formulated and published a National Adaptation Programmes for Action (NAPA) in 2006. In 2015, following the Paris Agreement, the country also elaborated its **Intended Nationally Determined Contribution (INDC)**, recently transformed into an NDC for the period 2020-2025, which identifies some of the following priority adaptation sectors for the 2025-2030 horizon:

- *Breeding*: sustainable management and conservation of pastoral resources (transhumance corridors, integration of forage crops, cross-border management), development and strengthening of pastoral units
- *Land management*: sustainable land management (defense and restoration of degraded lands; restoration of soil organic fertility; agroforestry...), increase in the number of boreholes, strengthening the resilience of ecosystems, enforcement of sanitation infrastructure and rainwater drainage systems in cities
- *Agriculture*: agricultural production planning, use of adapted varieties (short cycle and temperature), strengthening resilience through the diversification of production systems (improving food and nutritional security...)
- *Agricultural value-chains*: promotion of sustainable fodder collection and conservation system, post-harvest strategies and management, transformation and valorization of agricultural products
- *Climate risk management*: strengthening the production, dissemination and use of climate information and services, climate-related risk and disaster management, agricultural and livestock insurances.

The **Plan Sénégal Émergent** is Senegal's public policy reference document developed in 2013, whose main objective is to improve the living conditions of the population by 2030. The associated Priority Action Plan (PAP) identifies six challenges to be met, including "the reduction of poverty and inequality in all their forms and adaptation to climate change". Strategic Objective 10 of PAPII (2019-2023) also specifically addresses the promotion of adaptation and mitigation to climate change measures. Announced in 2018, the **Green PSE** aims to complement the **PSE**, linking the reference document with the government's ecological transition strategy. Its five main axes are i) sustainable development of urban areas; ii) defense and restoration of agricultural areas; iii) protection of plant heritage; iv) restoration of forest areas and species of high ecological, social, and cultural value; v) adaptation to climate change.

The government has also been engaged since 2015 in the sectoral and participatory development of its **National Adaptation Plan (NAP)**. It aims to identify medium- and long-term adaptation priorities in the country, as well as to develop strategies and programs to address them. The plan includes nine sectoral NAPs: agriculture, livestock, fisheries, water resources, coastal zone, biodiversity/tourism, health, disaster risk management focusing on floods, and infrastructure, which are currently being drafted.

The national constitution includes some paragraphs directing public authorities to protect and restore ecosystems services as well as sustainably manage natural resources. It is backed by specific codes: the **forestry code**, the **hunting and wildlife protection code** and the **environment code**. In addition, a large number of laws, national policies and strategies integrating environment management and climate change adaptation aspects were drafted, particularly the **agro-sylvo-pastoral law 2004-16** which first and fourth specific objectives are respectively on "the reduction of the impact of climatic, economic, environmental and sanitary risks, through the control of water, the diversification of productions, the training of rural people" and "the protection of the environment and the sustainable management of natural resources". Finally, the **Strategic Envelope Program for the Environment Sector (2019-2030)** has been written to encourage the vision of the Environment and the Natural Resources sector as a lever of inclusive growth. It therefore aims at valuing ecosystems services and reversing degradation trends to make ecosystems and local communities more resilient to climate change.

This EbA project is thus entirely aligned with the national government's efforts observed over the last decades, to develop an effective adaptative framework including a legislative corpus, national policies, and strategies to limit the impacts of climate change on Senegalese populations and ecosystems. In addition, it is perfectly aligned with the international commitments ratified by the country, particularly regarding climate change. First, the project will contribute to the production and communication of reliable climatic data, fulfilling its commitment to the UNFCCC. Second, it will contribute to the achievement of the NDC's commitment by promoting adaptation strategies aiming at an overall increased resilience and decreased vulnerability of the populations, employing a sustainable development approach as recommended in the PSE. Finally, the project integrates many of the adaptation considerations of the agro-sylvo-pastoral law 2004-16 or the Strategic Envelope Program for the Environment Sector by helping to i) secure existing and traditional activities (notably agropastoralism); ii) diversify means of subsistence; iii) sensitize and monitor the protection of natural resources and associated ecosystem services, leading to an overall improvement of living conditions of the beneficiaries, in partnership with provincial and local institutions as well as civil society.

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.

Component 4 of the project is dedicated to Knowledge management and monitoring and evaluation, seeking to secure the long-term adoption of climate-resilient approaches within the two project zones, as well as laying the foundation for scaling up EbA in Senegal. This will be achieved through use of the M&E data and lessons learned from the first three components to develop a strategy for scaling-up. This knowledge will be particularly relevant to inform planning and budgeting at the local, regional and national levels and for the continuous capacity building of stakeholders to support scaling-up beyond the life of the project. While this component is preparing the exit strategy of the project by capitalizing the knowledge acquired in the three first components, the activities will be carried-out all along the project implementation.

Four outputs are targeted :

Output 5.1. Project monitoring system providing systematic information on progress in meeting project outcomes and output targets. This output will ensure that project results are properly monitored throughout implementation through a performance framework, regular monitoring activities and evaluations. The project team, in close relation with ASRGM, the city of Thies, UNDP, IUCN and technical partners, will establish and implement data collection tools and processing protocols based on the M&E framework of the project. The tools developed under this output will also aim to categorize, document, report and promote lessons learned at national and international levels.

Output 5.2. A communication strategy aimed at the relevant local and national stakeholders is developed and implemented. A communication and visibility strategy will be developed to systematically analyze, compile and disseminate the theoretical concepts of EbA (including from outside the project areas and Senegal) as well as practical results of project activities to relevant national, regional and local stakeholders. The strategy is expected to build an institutional memory on the opportunities for EbA to enhance the climate change resilience of biodiversity and the livelihoods of local communities in the two project areas, amongst targeted stakeholders including the local authorities, local elected officials, pastoralists, farmers, local organizations and NGOs and managers of the Wildlife Reserves, Community Natural Reserves (RNCs), Silvopastoral Reserves and PUs and forests of the FBR and Plateau of Thies. It will also include awareness raising campaigns on the opportunities provided by the management of natural resources that provide multiple benefits and also reduce the risk associated to invest in these areas. Activities will include the development of the strategy itself, which will frame all communication activities under the different components of the project, the organization of local dissemination event in the FBR and the PCT, as well as at the national level, production and dissemination of videos focusing on the impacts of climate change in the Ferlo and in Thiès (included in component 2), as well as demonstration and dissemination of successful ecosystem regeneration experiences reducing the vulnerability of local populations, among others.

Output 5.3. A summary and dissemination document of the project outcomes, lessons learned and good practices is produced and disseminated. This output will ensure that knowledge produced by the project is shared and disseminated to inform future initiatives. Lessons learned and best practices will be collected from the M&E activities conducted under output 4.1.1 as well as monitoring visits and experience gained by the project implementation unit and the two project coordination units in the two target zones during implementation. At the end of the project, a national forum, gathering all technical and financial partners as well as the main stakeholders involved, will be organized to exchange on project successes, challenges, lessons learned and best practices. Building on the results of this forum and information collected during the project, a guidebook/manual will be produced to disseminate the achievements, difficulties, lessons learned and good practices for the implementation of EbA in the project areas, with the objective to facilitate the replication of the results.

Output 5.4. A strategy for scaling up the EbA approaches and the development of natural resource-based MSEs, including long-term financing options, is developed. This strategy will include approaches for developing climate-resilient natural resource-based MSEs, using the M&E results and lessons learned from implementation of the project, and will set out key recommendations for mainstreaming the approach in other regions in Senegal and abroad.

The budget for this component is USD 625,500.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. Baseline data for some of the results indicators is not yet available and will be collected during the first year of project implementation through a baseline survey. The Monitoring Plan included in Annex details the roles, responsibilities, and frequency of monitoring project results.

Additional GEF monitoring and reporting requirements:

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Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

- a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
- b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
- c. Review the results framework and monitoring plan.
- d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
- e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
- f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
- g. Plan and schedule Project Steering Committee meetings and finalize the first-year annual work plan.

h. Formally launch the Project.

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GEF Project Implementation Report (PIR):

The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. UNDP will undertake quality assurance of the PIR before submission to the GEF. The PIR submitted to the GEF will be shared with the Project Board. UNDP will conduct a quality review of the PIR, and this quality review and feedback will be used to inform the preparation of the subsequent annual PIR.

LDCF Core Indicators:

The LDCF Core indicators included as Annex will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent groundtruthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF [website](#).

Independent Mid-term Review (MTR): to be completed by May 2025.

The terms of reference, the review process and the final MTR report will follow the standard UNDP templates and UNDP guidance for GEF-financed projects available on the UNDP Evaluation Resource Centre (ERC). The MTR will be led by UNDP but include IUCN requirement.

The evaluation will be ?independent, impartial and rigorous?. The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by 1st May 2025. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

Terminal Evaluation (TE): to be completed by June 2027

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center. The TE will be led by UNDP but include IUCN requirement. TE should be completed 3 months before the estimated operational closure date, set from the signature of the ProDoc and according to the duration of the project. Provisions should be taken to complete the TE in due time to avoid delay in project closure. Therefore, TE must start no later than 6 months to the expected date of completion of the TE (or 9 months prior to the estimated operational closure date).

The evaluation will be "independent, impartial and rigorous". The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by 1st June 2027. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

Final Report:

The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Monitoring and Evaluation Plan and Budget:		
This M&E plan and budget provides a breakdown of costs for M&E activities to be led by the Project Management Unit during project implementation. These costs are included in Component 4 of the Results Framework and TBWP. The oversight and participation of the UNDP and IUCN Country Office/Regional technical advisors/HQ Units are not included as these are covered by the GEF Fee.		
GEF M&E requirements	Indicative costs (US\$)	Time frame
Inception Workshop	<i>10,000</i>	Within 60 days of CEO endorsement of this project.
Inception Report	None	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	<i>Per year: 5,000</i>	Annually and at mid-point and closure..
GEF Project Implementation Report (PIR)	<i>Per year: 5,000</i>	Annually typically between June-August
Monitoring of <i>Safeguards management framework and gender action plan indicators</i>	<i>Per year: 10,000</i>	On-going
Supervision missions	None	Annually
<i>Independent Mid-term Review (MTR)</i>	<i>70,000</i>	<i>1st May 2025</i>
Independent Terminal Evaluation (TE)	<i>80,000</i>	<i>1st June 2027</i>
TOTAL indicative COST	<i>260,000</i> <i>(2.9% of total GEF grant)</i>	<i>Added to TBWP component 4</i>

Table 5: M&E plan and budget

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 (LDCE/SCCF)?

The project is expected to deliver direct **adaptation and** socio-economic benefits at regional and local level. The project will support 88,000 people (52,800 men and 35,200 women) in PUs and communities in transforming their direct environment into more productive and **functional** ecosystems, delivering long-term **adaptation and** socio-economic benefits to community members. Through its private sector and value chain development component (component 3), the project will also directly support 2,000 people (800 men

and 1,200 women) from community groups (though MSEs, GIE and women's groups) in developing their businesses and, in turn, **earning economic benefits from these businesses**.

Therefore the project beneficiaries will (i) receive support for transforming the landscapes for increased productivity and restoration of ecosystem services which will deliver long-term socio-economic benefits including increased food security; (ii) receive support in the development of climate resilient value chains, improving community livelihoods and socio-economic safety, with direct impacts on community resilience to climate change; and (iii) gain access to new employment opportunities which will also increase household incomes, and the project approach will focus specifically on the needs and ambitions of women and youth.

Social benefits such as women empowerment, job creation and improved (and organized) concertation between different ecosystems users will also result from the project interventions. The project includes an important gender perspective in its activities and targets. Women will represent 60% of direct beneficiaries of the project, in particular under component 2 and 3. This will undoubtedly directly also deliver socio-economic benefits at the regional level, spreading good practices and lessons learned to other neighboring communities. The socioeconomic benefits will in turn reduce pressures on natural resources, help ecosystems deliver valuable adaptation services, and increase community resilience to shocks, including those associated with climate.

Benefits relating to the climate resilient recovery from the COVID-19 pandemic

COVID-19 severely impacted most vulnerable people and communities, that are already under stress as a result of the climate crisis and global biodiversity losses. In addition to the direct impact of COVID-19 on Senegal's economy in terms of illness and deaths and government-imposed restrictions, Senegal is also dependent on remittances from abroad and is therefore exposed to worldwide job losses and global recession.

A COVID-19 crisis survey conducted in April 2021 in Senegal found that 86.8% of households reported that their income over the past seven days was lower than normal. This percentage does not vary significantly between Dakar (83.8%) and the rest of Senegal (87.8%). On the other hand, rural areas seem to be more affected, with 91.5% of village residents reporting a loss of income, compared to 88.9% in medium-sized cities and 82.7% in regional capitals. According to the same source, people living below the poverty line suffered a greater loss of income (93.7%). The consequences of the health crisis and the response measures will also have dire consequences on income-generating activities.

The project strategy contributes to the COVID-19 green and climate-resilient recovery of Senegal, building on UNDP's support to the Government, and on the Government's commitment to socio-economic

development. This strategy is aligned with the guidance document 'GEF's Response to COVID-19', and has a dual action framework:

1. Actions to support COVID-19 response in the short-term: The proposed project has been designed to maximize opportunities for job creation and training, local economic development, and productivity improvements, as follows:

Job creation through small business development: In Component 3 of the project, climate-resilient agribusinesses, technologies and services are developed. This includes work to: (i) provide opportunities for local community members, in particular women and the youth, to receive entrepreneurship training ; (ii) organise training to access financing opportunities to promote the adoption of resilient practices that protect and conserve targeted ecosystems.

Productivity improvements: Components 1 and 2 of the project will strongly contribute to ecosystem regeneration and sustainable management of natural resources, hence improving the long-term productivity of the targeted ecosystems in terms of production (fruits, wood, grass, among others) and ecosystem services delivered. Component 3 aims to improve productivity in the use of ecosystem products, by improving harvesting, storing and processing capacities, all contributing directly to the work productivity and efficiency of involved community members.

2. Actions to support COVID-19 response in the long-term: The proposed project has been designed to maximize opportunities for strengthening supply chains, consistent with long-term decarbonization targets, and increasing natural and economic resilience and adaptive capacity, as follows:

Strengthening supply chains: In Component 3 of the project, value chains for climate-resilient use of ecosystem products will be catalyzed. This includes work to: (i) empower entrepreneurs with climate-smart business and leadership training; (ii) support / establish women producer associations and cooperatives of youth and women., conducting value chain analysis and market studies; and (iii) equip the created/supported MSEs with specific agroprocessing, transport, conservation and storage equipment for the production of marketable products deriving from restored, productive ecosystems.

Supporting long-term decarbonization targets: All the equipment procured under output 4.2 will respond to low-carbon and long-term criteria such as: low-tech design; energy efficiency and renewable energy (in particular solar energy); reparability and access to spare parts.

Increasing natural and economic resilience and adaptive capacity: As mentioned above, components 1 and 2 jointly aim to restore ecosystem services and sustainability in a climate change context, through ecosystem-based adaptation interventions. This includes work to regenerate ecosystems, work to sustainably manage ecosystems (through land-use planning, governance and specific capacity development interventions), and training and awareness of ecosystem users, including small-holder farmers, agropastoralists, transhumant breeders, private sector companies, and local authorities (including city services in Thies).

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	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.

Please refer to the full Social and Environmental Screening Report (SESP) uploaded to GEF portal.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
6603_SESP_221121_Clean	CEO Endorsement ESS	
6603 pre-SESP GEF 7 Senegal Ferlo Biosphere Reserve and Thies Clean	Project PIF 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).

This project will contribute to the following Sustainable Development Goal (s):

- SDG1: End poverty in all its forms everywhere
- SDG 5: Achieve gender equality and empower all women and girls
- SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- SDG13: Take urgent action to combat climate change and its impacts
- SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world)

This project will contribute to the following country outcome (UNDAF/CPD)[1]:

STRATEGIC PRIORITY 1: INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH

- Outcome 2: By 2023, the most vulnerable populations, particularly women, benefit from economic opportunities to improve their food security and create wealth
- Outcome 3: By 2023, vulnerable communities strengthen their resilience to the effects of climate change and contribute to the protection of ecosystems.

STRATEGIC PRIORITY 2: ACCESS TO QUALITY BASIC SOCIAL SERVICES AND SOCIAL PROTECTION

- Outcome 5: By 2023, the most vulnerable populations have better access to integrated quality health, nutrition, water, hygiene and sanitation services.

	Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target
	(no more than a total of 20 indicators)			

Project Objective: Promote Ecosystem-Based Adaptation (EbA) in the Ferlo Biosphere Reserve (FBR), and in the Plateau and city of Thies to strengthen the resilience of biodiversity, ecosystem services and agropastoral communities to the impact of increasing climate change, and the associated risks of annual droughts and floods	Mandatory Indicator 1: # direct project beneficiaries disaggregated by gender (individual people)	0	40,000 of which 60% women	90,000 of which 60% women
			24,000 women	54,000 women
			16,000 men	36,000 men
	Mandatory Indicator 2: Terrestrial protected areas under improved management for conservation and sustainable use in the FBR (Hectares)	0	2,058,214	2,058,214
	Mandatory Indicator 3: Area of land restored (Hectares)	0	10,500	16,800
		0	500	800
	3.1 Area of forest and forest land restored in the Plateau of Thies (Hectares) 3.2 Area of natural grass and shrublands restored	0	10,000	16,000
Project component 1	Developing regional and local governance for climate resilience through Ecosystem Based Adaptation			

Project Outcome 1 <i>Stakeholders' capacities in planning and implementing EbA to maintain and/or create climate-resilient natural capital are strengthened</i>	<u>Indicator 4:</u> <i>Number of EbA decisions taken by governance structures supported by the project for land-use planning and management in the FBR and Thies</i>	0	5 EbA decisions per region	10 EbA decisions per region
Outputs to achieve Outcome 1	<p><i>Output 1.1. Participatory governance bodies of the FBR and the PCT are established/revitalized and strengthened through a gender approach for better overall coordination in response to climate change risks and the integration of women in decision making</i></p> <p><i>Output 1.2. Local skills and knowledge, in terms of decision making, planning, and implementation of EbA to maintain and/or create climate resilient natural capital, are enhanced</i></p> <p><i>Output 1.3. Land use and management plans in the FBR are updated and implemented to integrate the EbA approach within regional and local regulations, policies and decision-making systems, using a gender-sensitive approach.</i></p>			
Project component 2	Restoration and conservation management to increase resilience of natural assets and ecosystem services			
Outcome 2 <i>Agropastoralists' livelihoods, natural ecosystems and productive landscapes in project sites are more resilient to climate change through the adoption of EbA practices</i>	<u>Indicator 5:</u> % change in density of vegetative cover in FBR and PCT project sites ^[2]	0	+10%	+25%

Outputs to achieve Outcome 2	<p><i>Output 2.1 Regeneration of degraded areas and resilience of agropastoralists to climate change are improved through sustainable grazing management and a network of enclosure and no-take zones in the FBR</i></p> <p><i>Output 2.2. Natural resources in the FBR are protected against wildfires, monitored and sustainably used</i></p> <p><i>Output 2.3 EbA measures are implemented on the Plateau to reduce flooding in the city of Thies</i></p> <p><i>Output 2.4 Assisted Natural Regeneration experience is capitalized and promoted in the Plateau of Thies</i></p> <p><i>Output 2.5. A climate-resilient green belt is restored around the city of Thies</i></p>			
Project component 3	Investment in climate-resilient value chains			
Outcome 3 <i>Private sector investment in value-chains producing goods and services based on the sustainable use of natural resources in a climate change context is mobilized</i>	<u>Indicator 6:</u> number of NTFP products and related value chain improvements facilitated through PSP	0	3	6
Outputs to achieve Outcome 5	<p><i>Output 3.1. A private sector platform is set up to better coordinate value-chain activities that promote</i></p> <p><i>Output 3.2. Stakeholder forums are organized to catalyze private and public sector investments towards the creation of resilient natural capital</i></p>			
Outcome 4 <i>Local entrepreneurs and MSEs produce goods and services based on the sustainable use of natural resources</i>	<u>Indicator 7:</u> Number of MSEs providing adaptive goods and services contributing to EBA	Baseline study to establish number of MSEs in place at project start.	Increase by 20%	Increase by 50%

Outputs to achieve Outcome 4	<p><i>Output 4.1. The managerial and entrepreneurial capacity of local entrepreneurs, in particular women and youth, are supported to develop and commercialize products based on the sustainable use of natural resources, taking into account climate change</i></p> <p><i>Output 4.2. MSEs based on the sustainable use of natural resources are provided with equipment (i.e. for the establishment of nurseries, village multi-purpose gardens, fodder reserves and integrated model farms) and agriculture and forestry inputs</i></p> <p><i>Output 4.3. MSEs based on the sustainable use of natural resources are provided with training to access financing opportunities to promote the adoption of resilient practices that protect and conserve targeted ecosystems</i></p>			
Project component 4	Knowledge management and Communication			
Outcome 5 <i>Relevant local and national stakeholders incorporate climate-resilient EbA approaches into their land management activities, drawing on the experience from the FBR and Thies</i>	Indicator 8: <i>Number of EBA practices replicated in the project targeted areas</i>	<i>n/a</i>	<i>2 examples of EbA good practices replicated in the 2 project regions</i>	<i>5 examples of EbA good practices replicated in the 2 project regions or neighboring regions</i>
Outputs to achieve Outcome 5	<p><i>Output 5.1. Project monitoring system providing systematic information on progress in meeting project outcomes and output targets</i></p> <p><i>Output 5.2. A communication strategy aimed at the relevant local and national stakeholders is developed and implemented</i></p>			

[1] UNDP, 2018. Plan cadre des Nations-Unies d'assistance au développement du Sénégal, 201-2023.

[2] To be established at project start using for example AppEARS Application for Extracting and Exploring Analysis Ready Samples. AppEARS (usgs.gov). Work of the Centre de Suivi Ecologique (CSE) in this area should be duly considered.

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

Comments	Responses
<p>STAP commends the use of multiple climate scenarios in the planning of this project, as this will result in interventions that are robust in a range of conditions. STAP recommends the project map these future scenarios explicitly to project activities and outcomes to assess the possible impacts of such change on the durability of project results. STAP also encourages the project to employ a similar level of rigor to the development of its assumptions and causal pathways through a clearly-articulated theory of change. The diagrammatic theory of change is useful, but does not spell out the assumptions and causality needed to carefully interrogate and improve project design.</p>	<p>Climate models in the Sahel region provide different and inconsistent tendencies in terms of future rainfall patterns, making adaptation planning very uncertain when it comes to rely on one or another. The interventions planned in this project are exclusively no-regret options, valid and useful whatever the scenarios in the future are. Project design did take due consideration of most recent climate projections, using RCP 4.5 and RCP 8.5 scenarios, but using different scenarios did not appear as adequate, in addition to making things more complicated when working with stakeholders. In the local context of the BRD and the PCT, planning the restoration of ecosystemic services through EbA does not require the use of multiple climate scenarios.</p> <p>A completely revamped Theory of change was produced during project design, including assumptions made and causality links.</p>
<p>STAP also suggests the project carefully consider social challenges at the community and household level when designing this project, as gendered expectations of roles and responsibilities in livelihoods can, when challenged by project activities, produce conflict and exacerbate the vulnerability of women and other marginal groups</p>	<p>The project design phase including an in-depth gender analysis in the tow project zones, with household consultations in target sites. Social challenges at the community and household level were duly considered when designing the project.</p>
<p>Germany recommends reviewing the outcome and output level in the theory of change and formulating quantifiable outputs that allow measuring results. For example, Output 1.1.5. ?The EWS under the ANACIM is equipped to strengthen the observation and dissemination of climate data in the project areas? appears to be an outcome, not output, and should be reformulated.</p>	<p>Outputs where completely revamped under components 1 and 2, in order to improve the results framework and project intervtnion logic.</p>

Finally, Germany would like to suggest seeking synergies with the adaptation project ?Science-based support for National Adaptation Plan (NAP) processes in francophone Least Developed Countries (LDCs) of sub-Saharan Africa?, commissioned by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and implemented by GIZ. The project has recently conducted vulnerability analyses e.g. in the areas of agriculture and water resources, as well as developed a series of adaptation webinars in French. Senegal is one of the countries of focus.	The mentioned vulnerability analyses were reviewed during the PPG phase, and fed into the overall analysis conducted for designing the project. They are however focusing on different regions, with specific challenges in coastal areas, which are not directly relevant to the project.
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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: 200,000			
<i>Project Preparation Activities Implemented</i>	<i>GEF Agency</i>	<i>LDCF Amount (\$)</i>		
		<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Formulation of Technical Reports and annexes	IUCN	-	-	-
	UNDP	20,000.00	9,675.00	13,000
Formulation of the UNDP-NCE Project Document, CEO Endorsement Request	IUCN	60,500.00	49,554.00	10,946
	UNDP	90,000.00	70,272.00	17,053
Workshops	IUCN	29,500.00	2,105.26	27,394.74
	UNDP			
Total		200,000	131,606.26	68,393.74

ANNEX D: Project Map(s) and Coordinates

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

Due to technical issue, maps could not be saved here. Please refer to Annex 2 of Project Document (p.7-84).

ANNEX E: Project Budget Table

Please attach a project budget table.

Expenditure Category	Detailed Description	Component (USDeq.)								Responsible Entity
		Component 1	Component 2	Component 3	Component 4	M&E	Sub-Total	PMC	Total (USD eq.)	(Executing Entity receiving funds from the GEF Agency)
Equipment and Furniture	Acquisition of equipment for 100 MSEs (50 per region, @\$ 20,000);			2,000,000			2,000,000		2,000,000	ASERG MV

Equipment and Furniture	Acquisition of anti-poaching equipment @\$20,000; Procure equipment (balers, mowers, tools) for straw harvest and conservation @\$100,000; Aquisition of bush fire control equipment for local control comittees, and training to users, 3 @\$30,000; Acquisition of anti-poaching equipment @\$30,000; Tools and small equipment for RNA in Thies @\$20000; Acquisition of equipment for tree seedling production unit, gabions, sign posts, 1@\$40,000;		300,000				300,000	300,000	ASERG MV
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Equipment and Furniture	Meteorological equipment, including annual maintenance @\$200,000 each;	400,000					400,000	400,000	ASERG MV
Materials & Goods	Acquisition and installation of fencing material for 12 enclosure zones @\$100,000 each; Acquisition and installation of fencing material to reinforce the Katane enclosure @\$150000 ; Acquisition and installation of fencing material for 2 new large enclosures @\$250,000; Acquisition and installation of fencing material enlarged enclosure zone on the plateau of Thies @\$132,500;		1,872,500				1,872,500	1,872,500	ASERG MV

Information Technology Equipmt	Computers and office equipment;						-	8,000	8,000	ASERG MV
Contractual Services - Individual	Full time project manager @\$37,500 per year; Full time project administration & finance officer @\$24,000 per year; Full time project administration Assistant @\$12,000 per year;						-	361,500	361,500	ASERG MV
Contractual Services - Individual	PMU M&E and KM officer @\$26,500 per year;				132,500		132,500		132,500	ASERG MV
Contractual Services-Companies	Annual financial audits;						-	25,000	25,000	ASERG MV
Contractual Services-Companies	Contract a meteorological equipment company to establish a diagnosis of the Thies meteorological station and assess technical needs in the FBR (2* \$20,000);	40,000					40,000		40,000	ASERG MV

Contractual Services-Companies	Contractors for digging ponds, drill boreholes and install anti-poaching miradors @\$300,000; Building of 5 warehouses for hay storage, @\$10000 each; Opening and maintenance of firebreaks @\$350,000; Services of 50 Eco guards for 4 years, 50 @\$5000; MoU/LoA NGOs (e.g. GRAIM) to implement anti-erosion strategies prepared (and realize anti-erosion works) in 20 villages @\$10,000 each; Contractor s for digging ponds, trenches and other anti-erosion bigger infrastructure @\$100,000; Services of 6 Eco guards for 4 years @\$5000		1,593,000				1,593,000		1,593,000	ASERG MV
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Contractual Services-Companies	Translation of MTR and TE reports into English @\$2,000 each; Communication material development and dissemination @\$3,000 per year;				19,000		19,000		19,000	ASERG MV
International Consultants	International agropastoral expert, 100 days @\$700; International Consultant specialized in innovative financing systems for nature protection, 30 days @\$700;		80,500				80,500		80,500	ASERG MV

Internati onal Consulta nts	Internation al climate change expert for Baseline study at project start, 40 days @\$700; ESMF & ES plan consultant, 40 days@675 USD/day; KM and climate change expert, 50 days@700 USD/day				90,000		90,00 0		90,00 0	ASERG MV
Internati onal Consulta nts	Internation al M&E and climate change expert for MTR (US\$45,00 0); Internation al M&E and climate change expert for TE (US\$55,00 0);					100, 000	100,0 00		100,0 00	ASERG MV

<p>International Consultants</p>	<p>International Natural resources expert,30 days@700 USD/day; International planning and CC expert, 50 days@700 USD/day; International CC vulnerability and local development expert, 50 days@700 USD/day; International CC vulnerability and local development expert, 50 days@700 USD/day; International CC vulnerability and local development expert, 50 days@700 USD/day;</p>	<p>168,000</p>					<p>168,000</p>	<p>168,000</p>	<p>ASERG MV</p>
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[illegible]

Local Consultants	EbA and institutional Expert, 25 days@500 USD/day; Institutional expert, 25 days@500 USD/day; Gender/capacity development expert, 20 days @ \$500; Consultant for the institutional assessment of the strengths and weaknesses of existing governing bodies in the FBR and the Plateau de Thi's : 25 days@500 USD/day; Adaptation planning consultant, 67 days @\$500; National Gender consultant, 50 days @\$500; CC adaptation planning consultant to prepare awareness program on gender-sensitive EbA and lead its implementation, 50 days @\$500; Communication consultant	231,000					231,000	231,000	ASERG MV
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Local Consultants	National agropastoral expert, 100 days @ @\$500; Consultant for participatory identification and delineation of 12 exclosure/ no-take zones, 10 days per exclosure = 120 days @\$500; Consultant for participatory identification and delineation of 2 large exclosures as per the Katn? model, 30 days @\$500; Pastoralism expert to train pastoralists in silage and hay baling techniques and prepare a training booklet, 60 days@\$500; National Consultant to work with bush fires control committees in the villages of target zones, 50 days @\$500; National communication									
		282,500					282,500		282,500	ASERG MV

Local Consultants	National climate change expert for Baseline study at project start, 40 days @\$500; Communication expert over 5 years, 70 days@500 USD/day; KM and climate change expert, 50 days@500 USD/day				80,000		80,000		80,000	ASERG MV
Local Consultants	National M&E and climate change expert for MTR (SU\$20,000); National M&E and climate change expert for TE (US\$20,000)					40,000	40,000		40,000	ASERG MV

[illegible]

Training, Workshops and Conferences	Inception workshop (US\$ 10,000)					10,000	10,000		10,000	ASERG MV
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<p>Training, Workshops and Confer</p>	<p>Inception workshops of the coordination council of the FBR and the scientific and technical committee - 2 workshops \$2500 each; Meetings of the scientific and technical committee, twice a year @\$1000 each (10 in total); Training workshops (4 @ \$10,000 each); Capacity development workshop in each region (2 @ \$1000); Official launch with admin. Authorities , sensitization meetings with City of Thies and 3 target municipalities; Setting-up of local technical committees (2 meetings @\$2000 each); Meetings at local level: 6</p>	<p>127,000</p>					<p>127,000</p>		<p>127,000</p> <p>ASERG MV</p>
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Training, Workshops and Confer	Launch workshops and meetings of PSP in the two regions; Meeting facilities; Meeting facilities; Facilities and logistics for 2 forums per region, @\$10,000 each; Facilities and logistics for training workshops (3 per region @3000 each); Facilities and logistics for workshops and meetings @\$20,000;			100,000			100,000		100,000	ASERG MV
Training, Workshops and Confer	Project Steering Committee Meetings; Project terminal workshop;				20,000		20,000		20,000	ASERG MV

Training, Workshops and Confer	Series of workshops to establish anti-erosion strategies with 5 target villages @\$2000 each; Training workshops anti-erosion strategie @\$3000;		13,000				13,000		13,000	ASERG MV
Travel	Travel cost of the PMU project staff;						-	25,000	25,000	ASERG MV
Travel	DSA and travel costs EbA and institutional Expert; Travel costs of Institutional expert ; Travel costs of Gender/capacity development expert; DSA and travel : Int. Natural resousces Cons.; Consutlants DSA and travel International planning and CC expert; DSA and travel for National Socio-economic expert;	19,000					19,000		19,000	ASERG MV

Travel	KM and communication missions travel costs @5,500 per year (Y2 to Y4) and @US\$11,500 in Y5; travel costs for Baseline study at project start (US\$5,500); Travel costs for safeguards expert (@US\$3,000)				36,500		36,500		36,500	ASERG MV
Travel	MTR mission travel costs (US\$5,000); TE mission costs (US\$5,000); M&E of GEF core indicators and project results framework @5000 per year; GEF Project Implementation Report (PIR) @\$5000 per year; Safeguards management framework and gender action plan indicators @10000 per year;					110,000	110,000		110,000	ASERG MV

Travel	Travel costs of agropastoral experts; Travel costs of participatory identification consultant; Travel costs of Pastoralism expert; Travel costs of national Consultant to work with bush fires control; Travel costs of National communication expert; Travel costs of expert in natural resource monitoring ; Travel costs of expert in anti-erosion; Travel costs of expert in anti-erosion strategies; Travel international Consultant specialized in innovative financing systems;Travel costs ANR expert; Travel costs of Afforestation and urban		27,000				27,000	27,000	ASERG MV
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Travel	Travel Private sector development experts; Travel agro-processing equipment experts; Travel SME finance expert;			44,000			44,000		44,000	ASERG MV
Supplies	Office Supplies;						-	5,000	5,000	ASERG MV
Supplies	Provision of tree seedlings to enrich newly exclosed zones (12 @\$5000);		60,000				60,000		60,000	ASERG MV
Audio Visual&Print Prod Costs	Preparation and dissemination of a guide on EbA @\$20,000; Organisation of local radio programs on EbA (12@\$1500), Shooting and dissemination of a documentary film on EbA to protect ecosystems (1 @\$20000);	58,000					58,000		58,000	ASERG MV
Audio Visual&Print Prod Costs	Publish training booklet;		2,000				2,000		2,000	ASERG MV

Miscellaneous Expenses	Miscellaneous Expenses linked to land use and management plans in the FBR	3,533					3,533		3,533	ASERG MV
		1,046,533	4,230,500	2,610,000	378,000	260,000	8,525,033	424,500	8,949,533	

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.

N/A

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 Agencies 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.

N/A

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).

N/A