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1. [Home](#)

0. [RoadMap](#)

0. CEO Endorsement Form

Strengthening Trans-boundary Cooperation for Improved Ecosystem Management and Restoration in the Senegal delta (Mauritania and Senegal)



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- Project Identification Form
 - GEF Secretariat Reviewer
 - PIF Clearance
- CEO Endorsement Request
 - GEF Review
 - CEO Endorsed

CEO Endorsement (CEO) entry – Full Sized Project – GEF - 6



Part I: Project Information

GEF ID

9594

Project Type

FSP

Type of Trust Fund

GET

Project Title

Strengthening Trans-boundary Cooperation for Improved Ecosystem Management and Restoration in the Senegal delta (Mauritania and Senegal)

Countries

Regional, Mauritania, Senegal

Agency(ies)

IUCN

Other Executing Partner(s):

Ministries of Environment and Sustainable Development on Mauritania and Senegal

Executing Partner Type

Government

GEF Focal Area

International Waters

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Least Developed Countries, Climate resilience, Livelihoods, Disaster risk management, Ecosystem-based Adaptation, Biodiversity, Protected Areas and Landscapes, Terrestrial Protected Areas, Community Based Natural Resource Mngt, Mainstreaming, Agriculture and agrobiodiversity, Fisheries, Tourism, Species, Invasive Alien Species, Biomes, Mangroves, Wetlands, International Waters, Acquaculture, Coastal, Transboundary Diagnostic Analysis, Strategic Action Plan Implementation, Freshwater, River Basin, Learning, Land Degradation, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Ecosystem Approach, Sustainable Livelihoods, Integrated and Cross-sectoral approach, Community-Based Natural Resource Management, Influencing models, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Demonstrate innovative approach, Convene multi-stakeholder alliances, Stakeholders, Civil Society, Non-Governmental Organization, Community Based Organization, Communications, Public Campaigns, Education, Awareness Raising, Beneficiaries, Local Communities, Gender Equality, Gender results areas, Participation and leadership, Access to benefits and services, Access and control over natural resources, Gender Mainstreaming, Capacity, Knowledge and Research, Adaptive management, Enabling Activities, Innovation, Knowledge Exchange, Capacity Development

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 1

Duration

36

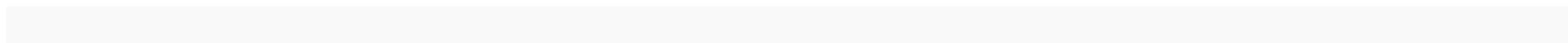
In Months

Agency Fee(\$)

275,491

A. Focal Area Strategy Framework and Program

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
IW-1_P1	Foster Cooperation for Sustainable Use of Transboundary Water Systems and Economic Growth	GET	1,225,000	2,150,000
IW-2_P3	Advance Conjonctive Management of Surface and Groundwater through Effective Institutional, Legal and Policy Measures	GET	611,009	2,800,000
IW-2_P4	Addressing the Water/Food/Ecosystem Security Nexus	GET	1,225,000	3,250,000
Total Project Cost(\$)			3,061,009	8,200,000



B. Project description summary

Project Objective

Improved governance, socio-economic development and ecosystem management in the Senegal Delta Transboundary Biosphere Reserve (SDTBR)

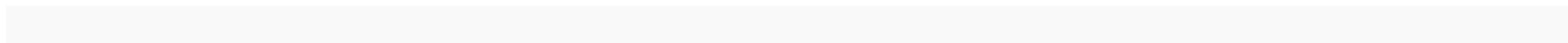
Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Governance of the SDTBR	Technical Assistance	<p>1.1: Governance and management structures and institutional planning processes established and functional</p> <p>1.2: Capacity building and training of key stakeholders has strengthened governance, management and actions on the ground</p>	<p>1.1.1 - The vision, mandate and legal framework of the SDTBR are reviewed and endorsed, and governance and management bodies are functional</p> <p>1.1.2 - The SDTBR Management Plan is produced and under implementation</p> <p>1.1.3 - Transboundary coordination between local platforms is</p>	GET	819,030	2,950,000

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
			<p>functional</p> <p>1.1.4 - Partnerships with the private sector support the objectives of the SDTBR</p> <p>1.1.5 - The annual budget of the SDTBR secretariat is agreed upon and resources are secured for the next 5 years (2024-2028)</p> <p>Output 1.1.6 - SDTBR Communication Strategy and Action Plan is produced and implemented</p>			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
			1.2.1 - Capacity Building Strategy and Action Plan is produced and implemented			
Component 2: Integrated ecosystem-based management and restoration in the lower Senegal River Delta	Investment	2.1: Critical ecosystems and key habitats are managed sustainably to protect water resources, forests and fisheries, and enhance ecosystem services 2.2: Stakeholders and SDTBR management mechanisms	2.1.1 - Knowledge gaps concerning key SDTBR management issues are identified, prioritized and used to inform an operational SDTBR Research Plan 2.2.1 - At least two management or sustainable use strategies for land, water resources or continental fisheries developed and implemented	GET	1,820,692	4,450,000

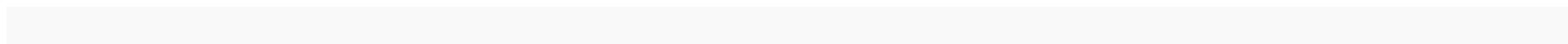
Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
		mobilized to achieve improved natural resource use and demonstrate sustainable practices	2.2.2 - At least three strategies for sustainable income generation that strengthen community engagement and resilience developed and implemented, and capacity of local user groups, including women, youth and other marginalized groups, improved to benefit from said strategies			
Component 3: Scientific cooperation, knowledge acquisition and sharing, and ecosystem monitoring and evaluation	Technical Assistance	3.1: Scientific cooperation is strengthened to enhance data collection, analysis and learning 3.2: The	3.1.1 - The transboundary information system and research network deliver up-to-date analyses that serve as the basis for participatory decision-making and management of the SDTBR 3.2.1 - The project	GET	275,525	800,000

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
		monitoring and evaluation system of the project is in place	monitoring and evaluation plan is developed and implemented 3.2.2 - Mid-term and Final Project Evaluations are completed			
Sub Total (\$)					2,915,247	8,200,000
Project Management Cost (PMC) □						
GET					145,762	
Sub Total(\$)					145,762	0
Total Project Cost(\$)					3,061,009	8,200,000



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	Amount(\$)	Evidence
Government	Government of Senegal	In-kind	3,000,000	
Government	OMVS	In-kind	1,900,000	
Others	MAVA	In-kind	1,000,000	
Government	Government of Mauritania	In-kind	2,300,000	
			Total Co-Financing(\$)	8,200,000



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	NGI	Amount(\$)	Fee(\$)
IUCN	GET	Regional	International Waters		No	3,061,009	275,491
Total Grant Resources(\$)						3,061,009	275,491

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

PPG Amount (\$)

150,000

PPG Agency Fee (\$)

13,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	NGI	Amount(\$)	Fee(\$)
IUCN	GET	Mauritania	International Waters		No	75,000	6,750
IUCN	GET	Senegal	International Waters		No	75,000	6,750
Total Project Costs(\$)						150,000	13,500

CEO Endorsement (CEO)

Core Indicators

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

Indicator 1 Terrestrial protected areas created or under improved management for conservation and sustainable use

[View](#)

Indicator 2 Marine protected areas created or under improved management for conservation and sustainable use

Indicator 3 Area of land restored

[View](#)

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

[View](#)

Indicator 5 Area of marine habit under improved practices to benefit biodiversity (excluding protected areas)

Indicator 6 Greenhouse Gas Emissions Mitigated

Indicator 7 Number of shared water ecosystems (fresh or marine) under new or improved cooperative management

[View](#)

Indicator 8 Globally over-exploited fisheries moved to more sustainable levels

Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

Indicator 10 Reduction, avoidance of emissions of POPS to air from point and non-point sources(grams of toxic equivalent gTEQ)

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

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

PART II: Project JUSTIFICATION

1. Project Description

- a. The global environmental and/or adaptation problems, root causes and barriers that need to be addressed;**
- b. The baseline scenario or any associated baseline projects;**
- c. The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project;**
- d. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing;**
- e. Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF);**
- f. Innovation, sustainability and potential for scaling up.**

a) The global environmental, root causes and barriers that need to be addressed

Global environment problem

Over the past several decades, the Senegal River Basin, and the Senegal River Delta more particularly, has undergone considerable alteration, and seen the progressive degradation and diminution of its natural resources due to climatic and anthropogenic factors. This degradation and diminution is an acute problem that has had a direct and negative impact on the aquatic, terrestrial and migratory species that depend on these areas as well as the vital ecosystem services they provide. As key determinants of local production systems, the changes to local ecosystems have also had direct socio-economic consequences.

Establishing functional, participatory governance and effective management of the SDTBR provides an important means to better integrate economic, social and environmental considerations across borders, while reconciling water resources management and biodiversity conservation with the sustainable use of natural resources over the long-term. Achieving these diverse objectives and establishing the SDTBR as a model for sustainable development and conservation is imperative to protect the globally significant high biodiversity value areas of the SDTBR and improve the well-being of people who depend on the water and other natural resources of the Senegal River Delta.

Recognizing the important impacts these changes that have taken place in the Senegal River Basin, a first TDA of the basin was undertaken from 2004 to 2007 in the framework of the GEF-supported Senegal River Basin Water and Environmental Management Program. The 2007 TDA was used to inform the 2008 Strategic Action Program (SAP) for the Management of Priority Environmental Problems in the Senegal River Basin, which was approved by the 59th Ordinary Session of the Council of Ministers of the OMVS in July 2008. In 2016, an updated TDA was completed by the OMVS and has been used to elaborate a SAP for the period from 2017 through 2037. In the context of the CCLME Project, a TDA of the marine ecosystem was also completed in 2016.

During the synthesis of the regional TDA for the Senegal River Basin in 2006-2007, a participatory process was undertaken to identify and evaluate environmental problems facing the basin. A total of sixteen problems and their associated consequences were identified (Table 15). Further assessment, relative to a set of four criteria (i.e., the extent and severity of the problem's impact on the Senegal River Basin's ecosystem; the extent and severity of the problem's impact on socio-economic activities and human and animal health; the degree of interaction between the problem and other environmental and socio-economic factors; and the difficulty in finding local and/or national solutions to the problem, and thus the relevance of a transboundary approach in solving the problem in question) (Table 16) were used to group the 16 identified problems under five priority environmental problems (PEP).

The assessment found that the problems that ranked highest in terms of their extent and the severity of their impacts on the Senegal River Basin's ecosystem were:

- **Modifications in estuarine hydrodynamics.** Rapidity and unpredictability of ongoing changes at the river's mouth following the construction of the Diama dam and the opening of the channel across the Langue de Barbarie.
- **Land degradation.** This includes deforestation, bushfires and desertification, which directly affect biodiversity and the stability of soils.
- **Degradation of wetlands.** These areas are often high value areas for biodiversity and important for the maintenance of ecosystem functions (including water quality).
- **Proliferation of invasive species.** Invasive species significantly affect the river ecosystem, including its biodiversity and the flow and quality of water.

- **Climate change.** The impacts of climate change and variability have the potential to intensify the other problems facing the basin.

The priority transboundary problems identified by the Preliminary TDA and subsequent consultations for the CCLME (Table 17), reflect many of the same concerns.

Recognizing the important role women play in the workforce of various production systems and their continued vulnerability as regards land security, the assessment also considered how women are affected by issues of water management and the PEP, and tried to identify women can be mobilized to participate in solutions. The environmental problems that were identified affect different parts of the Senegal River Basin to varying degrees and are the result of numerous immediate and root causes, but all have an impact the Delta and the area covered by the SDTBR.

Looking forward, the demands on the natural resources of the Delta and the rest of the Senegal River Basin ecosystem are only anticipated to grow as a result of demographic trends and the need to mobilize the resource base to combat poverty as well as the impacts of climate change. Concurrent demands for water, for consumptive and non-consumptive uses as well as to sustain the environment will also continue and are expected to increase (Table 18), making these demands harder to manage.

Priority environmental problems (PEP) identified in the Senegal River Basin and facing the Senegal Delta.

Priority environmental problem (PEP)	Environmental problem(s)	Immediate causes	Consequences	Notes on range
1. Land degradation	<ol style="list-style-type: none"> 1. Deforestation 2. Erosion / siltation (in general) 3. Erosion: riverbank degradation 4. Land salinization 5. Overgrazing 6. Bushfires 7. Desertification 	<p>Deforestation: clearing, bushfires, wood collection, overgrazing</p> <p>Erosion/siltation: unsuitable farming practices, high pressures on fragile areas, lack of land and water conservation practices, bushfires, overgrazing and intensive soil compaction, drought and wind activity</p> <p>Riverbank degradation: bedload increase from river, runoff from rainwater; high concentration of herds along riverbanks, devastating flooding and rainfall.</p> <p>Land salinization: capillary action of superficial salt layers</p> <p>Overgrazing: increase in livestock, degradation of vegetation cover and its animal load capacity; expansion of land for crop farming (reduction in pastures), expansion of irrigated land along the river (reduced river access for livestock), prolonged stays for herds, influx of transhumant livestock</p> <p>Bushfires: farming techniques, fires for livestock needs, hunting/poaching technique</p> <p>Desertification: deforestation; bushfires; erosion/siltation, rainfall deficits and depletion of water resources; increasingly long droughts</p>	<p>Formation of sand dunes; silting of stream beds; formation of islets and sand bars; loss and degradation of habitat; loss of biodiversity; recoil and/or gullyng of river banks; loss of economic investments; reduced navigability; salinization; degradation of high value biodiversity areas; reduction of water, grazing areas and arable land; increased conflicts; changes in floristic composition; soil degradation; water and wind erosion; rural exodus; loss of food security and livelihoods</p>	<p>Different environmental problems contributing to land degradation affect different areas of the basin to varying degrees.</p>
2. Water supply and	<ol style="list-style-type: none"> 8. Surface water supply 	<p>Siltation: degradation of fragile areas and upstream mountainous areas;</p>	<p>Decrease in rainwater and surface water flow;</p>	<p>Entire basin</p>

Priority environmental problem (PEP)	Environmental problem(s)	Immediate causes	Consequences	Notes on range
quality	9. Supply in aquifers 10. Water quality: pollution / siltation 11. Water quality: pollution/mining 12. Modifications in estuarine hydrodynamics	climate change, land degradation and erosion riverbank degradation; degradation of drainage basins (demographic pressures, demand for wood, expanding agriculture), high levels of solid transport, erosion, proliferation of invasive aquatic species Water quality and supply: drop in frequency and duration of flooding of alluvial plain; changes in the river regime by the dams; proliferation of invasive species, pollution from household wastewater, pollution from mining (gold) residues, untreated drainage water disposal from agriculture	lowering of the level of surface aquifers; suboptimal annual flooding; adverse effects on water-dependent fauna and flora; release of nutrients and pesticides increase eutrophication; decrease in environmental quality; invasive species; pollution; human and animal health problems; reduction of wetland area; decreased ecosystem function; increase in solid load; riverbank erosion	Critical areas include the Delta
3. Invasive species	13. Invasive species	Modification of the river's hydraulic regime (lack of/low tidal fluctuation), water softening (blockage of saltwater up-flow, development of irrigated crops and nutrient disposal in the river's water (nitrogen, phosphorous)	Rapid increase in areas colonized by invasive aquatic plants; clogging of waterways; hinderance to fishing; creation of sites favorable for vectors of waterborne diseases; decline in biodiversity	River valley downstream of Manantali Critical areas include Delta
4. Waterborne diseases	14. Waterborne diseases	Invasive aquatic plants, reduction in water salinity insufficient drinking water supply system and sources; insufficient access to sanitation; failed maintenance for infrastructure, lack of storm drains and refuse treatment centers water stagnation causing an increase in breeding sites of waterborne disease viruses	High prevalence of infectious diseases; high level of morbidity; lower labor productivity; drop in school performance of children; increase in malnutrition among small children and older adults; infant mortality	Entire basin Critical areas include the Delta
5. Conservation of biodiversity	15. Degradation of fish fauna 16. Wetlands degradation	Deforestation, bushfires, mining, poaching, degradation of habitats, encroachment, erosion, siltation, overuse of resources (fishing, hunting, overgrazing, agriculture)	Reduction of the diversity of species; declining productivity of fisheries; negative impacts on tourism; reduction of vegetation cover; degradation of wetlands; decreases in the functioning of wetlands; proliferation of invasive species, expansion of agriculture; reduction of flood plains and pastures	Entire basin Critical areas include protected areas in the Delta
6. Risk of flooding	17. Risk of flooding	Increased rainfall in the upper basin, deceleration in flows due to sedimentary deposits, expansion of dwellings, waterlogged soil, weak protection and sanitation infrastructure, heavy rains	Reaching or exceeding the critical flood level; flooding of the river bed; rupture of protection dikes; destruction of infrastructure, roads, dwellings, fields; destruction of natural ecosystems	Lower basin
7. Climate change	18. Climate change	Greenhouse gases emissions, increase in fossil energy consumption, changes in land use, unsustainable practices, deforestation	Rising temperatures; decrease in rainfall; decrease in flow; decrease in level of aquifers; greater frequency and magnitude of extreme events; sea level rise	Entire basin

Sources: OMVS TDA, 2007; OMVS TDA, 2016.

Assessment of environmental problems (PEP) facing the Senegal Delta.

Environmental problem(s)	Criteria 1: Extent and severity of the impact on ecosystems	Criteria 2: Extent and severity of the impact on socio-economic activities & human and animal health	Criteria 3: Degree of interaction with other environmental and socio-economic factors	Criteria 4: Difficulty of local/national solutions & relevance of a transboundary approach	Total score
1. Deforestation	3	2	3	1	9
2. Erosion / siltation (in general)	2	2	3	2	9
3. Erosion: riverbank degradation	2	3	1	3	9
4. Soil salinization	1	2	1	1	5
5. Overgrazing	2	3	2	2	9
6. Bush fires	3	2	3	2	10
7. Desertification	3	3	3	2	11
8. Surface water supply	2	2	3	2	9
9. Supply in aquifers	1	1	1	1	4
10. Water quality: pollution/siltation	2	2	2	2	8
11. Water quality: pollution/mining	1	2	2	2	7
12. Modifications in estuarine hydrodynamics	3	2	3	2	10
13. Invasive species	3	3	3	3	12
14. Waterborne diseases	1	3	1	3	8
15. Degradation of fish fauna	2	3	1	3	9
16. Wetlands degradation	3	3	2	2	10
17. Risk of flooding	2	3	2	2	9
18. Climate change	3	3	3	2	11

Sources: OMVS TDA, 2007; OMVS TDA, 2016.

Priority transboundary issues for the CCLME.

Declining marine living resources	Habitat degradation	Declining water quality
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- Decline and/or vulnerability of small pelagic resources;
- Decline of demersal resources (finfish, cephalopods & crustaceans);
- Threats to vulnerable species (sharks and rays, marine mammals, marine turtles); and
- Vulnerability of tuna resources.

- Destruction and disappearance of mangroves;
- Degradation and modification of benthic habitats; and
- Degradation and modification of wetlands (Ramsar: coastal zones, coral reefs, estuaries).

- Modified transport of sands and sediments;
- Exotic invasive species;
- Salinity changes upstream of river mouths;
- Increased levels of metals in fishery products notably cadmium; and
- Pollution (various types).

Source: CCLME Project, 2016.

Demand for water by sector.

Use	Sector	Demand in 2008 (Mm ³)	Projected demand in 2025 (Mm ³)
Consumptive uses	Irrigated agriculture	1,450.5	5,20.0
	Livestock rearing	61.0	84.0
	Drinking water	26.5	132.3
	Mining/Industry	13.0	235.0
Non-consumptive uses	Hydroelectricity	6,300.0	8,800.0
	Navigation	-	630.0
Environmental needs	Flood-recession agriculture	4,500.0	4,500.0
	Environmental needs	8,130.0	8,130.0

Source: OMVS TDA, 2016.

Threats, root causes and barriers analysis

Threats

The Senegal River Basin is under increasing impacted by a variety of human-induced and climate-induced pressures. These pressures and how they impact the basin's water resources, its biodiversity and its other natural resources were documented as part of the processes to develop the 2007 and 2016 TDA (Table 19).

Table 19. Principal threats to the ecosystems of the Senegal River Basin.

Natural resource	Threats		
	Upper Basin	Valley	Delta
Water resources (rain, surface water, groundwater)	Strong decline in annual rainfall over the long-term (40-50-year scale), with increasing frequency of deficit years Seasonal and interannual variability in rainfall Sharp decline in river water flow over the long-term High interannual and annual variability in mean river flows Alteration of river hydrologic regime due to dam construction		
Flora	Intense deforestation Net regression of flora, as a result of demographics and a significant increase in livestock Endemic plant species threatened with disappearance	Significant degradation of shrub savanna High levels of degradation of <i>Acacia nilotica</i> gallery forests	Steppes becoming sparser
Fauna	Faunal diversity threatened by anthropogenic interventions (expansion of settlements, cultivation, mining, poaching, bush fires)	Near-extinction of large fauna, due to degradation of natural habitats and anthropogenic and pastoral pressures	
Classified forests	Bush fires, deforestation	Woody and herbaceous strata strongly degraded	
Vulnerable ecosystems	Fouta Djallon Massif; wetlands, including the source of the Bafing, Bafing - Falémé and Magui Lake; Bafing Wildlife Reserve, Baoulé Loop Reserve: Rapid decline in the number of	Flood plain: Reduction in surface area that is submerged, due to the deterioration of hydroclimatic conditions and the construction of dams	Lakes (Guiers, R'Kiz); national parks, including Diawling, Djoudj and Langue de Barbarie; wildlife reserves, including Chatt Buol and Ndiael: Proliferation of aquatic plants

	<p>rare/threatened species (e.g. chimpanzees)</p> <p>Various other threats, including demographic pressure, expansion of human settlement, bush fires, deforestation, erosion, increase in pastoral activities, overgrazing, advance of the cotton front (Mali), poaching, and industrial and artisanal mining (panning)</p>	<p>Silting and obstruction of the channels feeding basins</p> <p>Regression of flood recession cultures</p> <p>Loss of spawning areas for fish</p> <p>Decrease in recharge of deep layer</p> <p>Loss of groves of <i>Acacia nilotica</i></p>	<p>Pollution and degradation of water quality</p> <p>Rise of the salt table; Expansion of agricultural infrastructure</p> <p>Sea level rise</p> <p>Breach of the Langue de Barbarie</p> <p>Transhumant pastoralism</p> <p>Siltation</p>
Artificial wetlands (dam reservoirs)	<p>Existing (Manantali) and planned dams (Koukoutamba, Bouréya, Lassa, Gourbassi, etc.):</p> <p>Deforestation</p> <p>Bush fires</p> <p>Expansion of agriculture areas, which can accelerate water erosion and thus siltation of reservoir dams</p>		<p>Existing dam (Diama):</p> <p>Invasive plants</p> <p>Risks of water pollution from agricultural discharges</p>

Sources: OMVS TDA, 2016; OMVS SAP, 2017.

Among threats that have been identified as particularly pertinent to the Senegal River Delta and the area comprising the SDTBR are the following:

- Changes in estuarine hydrodynamics.** The construction of a storage dam at Manantali in Mali and a salt-wedge dam downstream in the delta at Diama as well as the opening of an overflow channel on the Langue de Barbarie significantly changed the hydrodynamics of the Senegal River Delta, resulting in a drop-in surface water hydraulicity, the sinking of superficial aquifers, the degradation of water quality, negative effects on fauna and flora, increased eutrophication and an invasion of aquatic plants. These changes also had important effects on production systems and local livelihoods.
- Water supply and degradation of water quality.** The ecosystems of the Senegal River Basin and production systems within the basin are heavily dependent on rainwater. The variability in rainfall and the general tendency of decreasing rainfall contribute to increased vulnerability. In addition, the basin's surface water recharges the groundwater body. This means that any modification of the river regime or a low level of hydraulicity can affect this recharging, although according to the OMVS 2007 and 2016 TDA the full impact of the inter-annual variation in alluvial plain flooding on groundwater is still not fully defined. As demands for water increase, the issue of water supply is likely to become increasingly important. Water quality is affected in multiple ways, including chemical pollution (e.g., pesticides from agriculture), microbiological pollution, eutrophication, suspended solids (e.g., from erosion) and solid

waste. Pollution from products used in irrigated agriculture has been documented in the delta and increases in populations and industrial activities around the river have the potential to increase water quality issues stemming from human activities.

- **Agriculture.** Expansion of agriculture, including cash crops, affects the soils, biodiversity and water of the delta. The extension of cultivated surfaces makes land more vulnerable to wind and water erosion, and increases the solid load of surface water. It also contributes to loss of natural habitats. The expansion of irrigated agriculture and the subsequent loss of the annual flood regime have impacted the entire flow regime in the valley and delta, including the recharge of groundwater. They have also impacted the ability of fish species to reproduce and the persistence of Acacia forests. These changes have also contributed to a degradation of water quality, salinization of soils, eutrophication of water, proliferation of invasive plants and an increase in waterborne diseases.
- **Overgrazing.** The prevalence of pastoral activities and the increase in herd numbers have numerous impacts, including soil trampling, degradation of vegetative cover, wind and water erosion, siltation, riverbank degradation, increased pressure on surface water and groundwater and loss of natural habitats. These impacts can be especially damaging to wetlands. When the pressure from pasturing exceeds what the wetland can bear, soils become more exposed and sensitive to atmospheric agents. This causes sloughing and erosion, and can lead to downstream sedimentation. Livestock can also increase nutrient inputs to wetlands, physically changing habitats and slowing regeneration of vegetation. These threats are especially concerning for systems that are already very fragile due to climatic conditions. Finally, the expansion of agriculture and the increase in pastoralism can result in intense competition for land and conflicts.
- **Uncontrolled hunting and fishing.** These activities can be a major threat to many species, including birds and fish. Unregulated continental fisheries practices can deplete fish stocks, and lead to increasing application of unsustainable fishing techniques. These threats are even more of a risk for species that are also being impacted by other climatic and human induced changes.
- **Erosion and siltation.** Erosion in the delta has been graded as “serious” to “very serious”. Siltation has also been documented as a problem on some of the waterways on the left bank of the delta. The extension of cultivated surfaces has made land more vulnerable to wind and water erosion. Overgrazing and the subsequent intense soil compaction by herds have also increased the land’s vulnerability and compound the effects of drought and wind activity when it comes to erosion. The lack of adequate land management practices further contributes to this problem, which can result in sand dunes, loss of land fertility, loss of habitats and biodiversity, siltation of waterways and the formation of islets and sandbanks.

- **Salinization.** The arid climate, poor drainage associated with a rise in the water table, the application of certain irrigation techniques and the use of chemical fertilizers have all contributed to the deposition of salt at the surface of the soil in areas where evapotranspiration exceeds precipitation. These salts are toxic to many plants and can make the land unusable, contributing to habitat degradation and low agricultural yields. This problem is particularly acute on the left bank.
- **Habitat degradation, conversion and fragmentation.** The natural ecosystems of the Senegal River Delta (deltaic plains and dunes) have undergone significant changes due to the combined impacts of droughts and human interventions (dams). While dune habitats remains the least transformed, the deltaic plains have been radically changed by the installation of drainage and irrigation systems. Some areas have completely dried up and others have suffered from increasing soil salinity. The natural vegetation cover and pastures have largely disappeared, and raising the level of retained water to reduce irrigation pumping costs has resulted in the spread of *Typha domingensis* and other invasive aquatic plants. Since the 1990s, multiple projects aimed at restoring floodplain wetlands and their biodiversity, as well as traditional resource systems have been active in areas of the Delta. The areas that have persisted (or been restored) that are representative of the natural floodplain ecosystem are largely located in the protected areas that form the core of the SDTBR.
- **Introduced species.** The proliferation of harmful aquatic plants, in large part due to the creation of favourable hydro-ecological conditions (presence of nutrients, calm waters, low currents, prevention of up-flow of saltwater), is one of the most serious environmental problems in the Senegal River Basin and in particular the delta. The species concerned are mainly reeds (*Typha* and *Phragmites*), kariba weed (*Salvinia molesta*) and water cabbage (*Pistia stratiotes*). The spread of these species covers a vast extent and has had serious ecological and socio-economic impacts, altering waterways and wetlands ecosystems as well as the livelihood activities dependent on their resources. Eradication of these species is very challenging (in part due to rapid reinvasion) and costly.
- **Waterborne diseases.** Following changes in the water regime and hydro-ecological conditions, multiple waterborne diseases have developed or become more prevalent. These include malaria, bilharzia and diarrheal diseases. There are ongoing initiatives working to target this threat at scale. As such, direct mitigation of this threat is not the focus of this project, although addressing the overall health of the delta ecosystem is an integral component of the project.
- **Climate-induced threats.** The anticipated impacts of climate variability and change pose a serious threat to the ecosystems and habitats of the Senegal River Delta. Among the changes being observed are: declining and changing patterns of rainfall; increasing air temperatures; shifts in sea water temperatures; changes to sea level, current patterns, salinity and other physiochemical parameters; and increasing frequency and duration of extreme weather events (e.g. droughts, floods). These changes affect

productivity and degrade the quality and functioning of ecosystems, threatening biodiversity and the services upon which of socio-economic development depends. They also compound many of the other threats facing the delta.

Root causes

The principal underlying causes for the above-mentioned threats to the SDTBR include both climatic and non-climatic elements. They can be summarized as follows:

- **Demographic growth.** The population of the Senegal River Basin continues to grow and increase demands on the natural resource base. The density of people varies significantly across different areas, and patterns of demand are impacted by trends of urban population growth, rural exodus, sedentarisation, poverty and consumerism. Higher demographic pressure contributes to increased land degradation (deforestation, erosion, bushfires, desertification, siltation, salinization, overgrazing). Urban growth along the Senegal River also contributes to issues of water supply, water quality and the proliferation of invasive species.
- **Poverty.** Among the poorest countries in the world, Mauritania and Senegal both face growing populations with urgent economic needs. Their agrarian economies are centered on commodities whose production is heavily dependent on the availability of water and land as well as climatic conditions. As the SDTBR states continue to advance their development agendas, the demands on resources are anticipated to continue to increase. Given the regions climatic trends and variability, the SDTBR states have already invested heavily in developing irrigated agriculture. Other demands for water (i.e., flood recession agriculture, pastoralism, sanitation, potable water, mining/industries, hydroelectricity, navigation, sustaining the environment) are also projected to increase. Finally, given the pressure to advance poverty reduction, there is a high risk of resorting to unsustainable practices of natural resource management, including overuse, which can affect the quantity and quality of resources.
- **Weak compliance and application as regards environmental and natural resource management regulations.** Despite a legal and regulatory framework for natural resources, compliance remain weak. Insufficient resources, for both awareness-raising and enforcement, as well as limited knowledge on relevant laws and understanding contribute to this cause. Among the areas where there is a need for improved standards and harmonization of the legal framework, as well as more effective application, are water management (including water pollution management and control of river water quality), land tenure, forest management, wetlands management, species protection, bushfire management and soil conservation.
- **Poor spatial planning.** The lack of appropriate spatial planning, including the lack of a master land use plan and urban space management rules, is a root cause of multiple threats. This framework is critical to effectively planning water management techniques and infrastructure to control water (e.g., dams, means to drain water from irrigated areas) as well as to manage the impacts of human settlement patterns and production activities.

- ***A degraded natural resource base.*** The resource base for many important production systems in Mauritania and Senegal are constrained by environmental and climatic conditions (e.g., low and erratic rainfall pattern and droughts). This base has also been altered by human interventions, which have dramatically changed the volume and velocity of river flows and changed natural flooding patterns. Applying different agricultural methods (e.g., irrigation) provides a means of adapting to environmental and climatic conditions, but can also contribute to other environmental problems. The low density of pastoral water points also constrains pastoralism and, along with the increase in herd numbers, contributes to overgrazing. Finally, the biodiversity of the region has been affected by overexploitation.
- ***Rural poverty and dependence on primary sector.*** The rural populations of Mauritania and Senegal are nearly completely dependent on the exploitation of natural materials for their food security and livelihoods and lack sufficient economic alternatives. In years of drought, the reliance on resources can be even higher.
- ***Unsustainable natural resource management practices.*** Many of the practices for natural resource management in the Senegal River Basin are not sustainable in the face of climatic and human-induced threats. These include overuse, the extensive livestock farming system and increases in crop farming along river banks. These unsustainable practices have a negative impact on the country's resource base and economy, and contributes to the impoverishment of rural areas and vulnerable groups. Adapting practices requires improved knowledge on the state of resources, changes and alternative or adapted management techniques.
- ***Lack of knowledge on values of biodiversity conservation.*** In the management of the resources of the Senegal River Basin there have been misunderstandings about biodiversity issues and advantages of conservation. Although this has been acknowledged as a priority issue for the OMVS and both states have undertaken measures to protect biodiversity, including in wetlands, there is a need to improve knowledge about the values and functions of biodiversity and improve the means to manage and protect this biodiversity within and outside of designated protected areas.
- ***Regulation of fluvial flows on the Senegal River.*** Human interventions have significantly altered the natural flow of the Senegal River and its tributaries. These changes have transformed natural ecosystems and impacted the dynamics of the basin, including the suitability of land for different production systems. These changes have contributed to multiple environmental problems, including waterborne diseases and the proliferation of invasive species.
- ***Blockage of saltwater wedge.*** With the construction of the Diama dam, the Senegal River estuary underwent serious changes in its hydrological dynamic. Before the construction of the dam, the river estuary alternated between freshwater and seawater depending on the season. With the Diama dam, the saltwater wedge no longer flows upriver and the water upstream of the dam is permanently salty. The over 100 km long reservoir is filled with freshwater. These changes have contributed to environmental problems such as waterborne diseases and the proliferation of invasive species.
- ***Climate change and variability.*** Climate change and variability are root causes of many of direct and indirect threats contributing to the diminution and degradation of ecosystems in the Senegal River Basin. Among the effects of this threat are increasing temperatures, decrease in rainfall, reduced flow, sea level rise and greater frequency and magnitude of extreme events. These effects affect water supply and quality, water flow, land degradation (e.g., erosion), the viability of production

systems (e.g., arable land, production of pastureland) and species persistence as well as conditions for the proliferation of invasive species and waterborne diseases.

Barriers analysis

Promoting improved governance, socio-economic development and ecosystem management in the SDTBR. will require addressing numerous barriers. These include the following social and technical barriers to establishing more sustainable natural resource management.

- Lack of functional and empowered transnational governance and management systems to sustainably manage the natural resources of the SDTBR. Proposed governance and management systems are complex and demand significant resources in terms of time, financial and human and human resources. Some of the skills required to establish effective governance systems (e.g., facilitation, mediation, organization of stakeholders) are also difficult to identify.
- Insufficient transboundary cooperation to sustainably manage shared resources (e.g., fish stocks, pasture).
- Insufficient coordination of activities concerning natural resource management, including water management, and the degradation of the environment and climate change in the SDTBR.
- Weak representation of some groups in SDTBR governance systems, including decision-making and management bodies. These groups include local communities and civil society as well as the OMVS, with its associated technical departments and structures, rice farmers and agribusiness, and urban centers (e.g., Saint-Louis, N'Diogo).
- Lack of sufficient understanding of the role of gender in the PEP of the SDTBR and inadequate inclusion of this understanding in proposed solutions
- Lack of clear economic, social and environmental objectives and targets for the management of the SDTBR and the lack of a management plan to inform and monitor management activities. Clear objectives are critical to reconcile conservation and development goals and to allow for clear evaluation of management strategies.
- Lack of harmonization across legislation and associated texts concerning land use and natural resources in the SDTBR at the national and transboundary levels, and weak application of said texts. This lack of harmonization and weak enforcement contributes to land use conflicts and the degradation of natural resources.

- Lack of prioritization of ecosystem management and biodiversity conservation in decision-making regarding water management. Water management in the Senegal River Basin has historically prioritized agriculture and human consumption. This is true even though the OMVS has officially recognized the need to preserve and protect the environment and despite the negative impacts that are being accrued by not better balancing socioeconomic and ecological imperatives when it comes to allocating water resources.
- Complexity of natural resource management (including water) and land use issues. Not only are many of the SDTBR's resources transboundary in nature, they have also been heavily impacted by climate-induced threats as well as unprecedented development of agriculture and increased water control (i.e., dams and flow regulation). Open access policies for resources, multi-use systems and conflicts or confusion caused by the superposition of state and customary law also contribute to this barrier. Finally, there is significant differentiation in the roles of various social groups in production systems and the sharing of benefits.
- Lack of awareness on appropriate water management and natural resource management practices to address threats to ecosystems in the SDTBR. Additional research and dissemination of knowledge is especially important to manage threats such as the massive presence of invasive aquatic species (especially *Typha domingensis*).
- Insufficient technical and operational capacity at multiple levels and across numerous sectors.
- Lack of financial planning and sustainable financing mechanisms to support the governance and management of the SDTBR and the reliance of the SDTBR on partners for fundraising.
- Limited access to investment and working capital for local communities.

b. The baseline scenario or any associated baseline Project

Baseline analysis and gaps

Mauritania and Senegal have established national policy agendas that integrate decentralization, rural development, natural resource management and adaptation to climate change. The international community has provided support to national and local stakeholders to advance these agendas through a series of projects targeting different sectors and geographic areas.

The section below provides a summary of past, current and planned projects that have been, are being or will be implemented to address the environmental problems this project will address. Taking into consideration previous projects and close coordination with present and future projects will be crucial to make sure the present project capitalizes on results achieved and maximizes impacts by taking advantage of synergies with existing and planned projects.

There are numerous past and present national and regional projects that are relevant to the project area and its proposed interventions. These include projects to build the capacity and support the mandate of the OMVS; projects concerned with mitigating the impacts of PEP in the Senegal Delta; projects working to advance decentralized natural resource management; and projects to restore ecosystems, maintain wetlands and conserve biodiversity. Short summaries of the most closely related of these projects is provided below. It is important to note that in addition to these projects there are many other initiatives that have been undertaken in Senegal and Mauritania or at the regional level in the context of different sectors, including development, agriculture, poverty alleviation, food security, health and sanitation, energy, fisheries and other areas that are also relevant to the management of natural resources in the Senegal Delta. The OMVS is a critical framework for assuring that, on the one hand, these multi-sector considerations are integrated into the management strategies of the SDTBR and, on the other hand, that the objectives of the SDTBR are taken into consideration in broader decision-making on the water resources of the Senegal River Basin.

Past and planned national and regional actions and projects

The Senegal River Basin Multi-Purpose Water Resources Development (MWRD 1) – WB ID P093826 (Programme de Gestion Intégrée des Ressources en Eau et de Développement des Usages Multiples - PGIRE)

The World Bank-supported PGIRE or MWRD 1 program was approved in 2006 and ran through 2013. It worked in all four countries of the Senegal River Basin to enhance regional integration among the riparian countries of the basin through the OMVS for multi-purpose water resources development to foster growth, including improved community livelihoods. The project had three main components: (i) regional institutional development for water resources to reform OMVS and enhance its institutional capacities, establish effective membership of Guinea and rehabilitate the OMVS Regional Documentation Center; (ii) local level multi-purpose water resource development (e.g., small hydraulic infrastructure, sustainable and efficient traditional fisheries, collective planning and management of land and water resources at the community and sub-basin levels, reduction of five waterborne diseases at the community level, and the control of invasive aquatic species); (iii) regional multipurpose and multi-sectoral master planning, including the preparation of the Master Plan for Water Resources Management on the Senegal River (*Schéma Directeur d'Aménagement et de Gestion des Eaux - SDAGE*). The main beneficiaries of the program were regional and national institutions and rural populations living within the eight target regions of the basin, with over 90% of the budget being dedicated to the program's second component. The project had significant impacts as regards improving multi-sector (particularly across agriculture, fisheries and hydropower) planning and management and the use of water resources in the Senegal River Basin. It also contributed to developing agroforestry, watershed protection and expanding and rehabilitating small-scale irrigated agriculture. A second phase of the program is underway (see section on GEF projects below).

Stormwater Management and Climate Change Adaptation Project (PROGEP) – WB P122841

The PROGEP project was approved in 2012 and is anticipated to continue through 2019. The total project cost, including funds from World Bank and non-bank sources is US\$ 72.90 million. The project aims to reduce the risk of flooding in the peri-urban areas of Dakar and preserving household and business assets of those living in the flood prone areas. It includes components on: (i) institutional strengthening and capacity building in flood risk management and urban planning; (ii) development of priority primary drainage infrastructure; and (iii) participatory urban flood risk management.

Project for the Restoration of the Ecological and Economic Functions of Lake Guiers (Projet de Restauration des Fonctions Écologiques et Économiques du Lac de Guiers - PREFELAG)

The PREFELAG was implemented by the MHA-SN through the OLAC from 2013 through 2018. The project was funded through a loan from the African Development Fund (ADF) of the African Development Bank (AfDB) for an amount of XOF 11.2 billion, a grant

from the GEF for an amount of XOF 0.639 billion, and the participation of the MHA-SN in the amount of XOF 2.111 billion. The project aimed to restore the ecosystems of Lake Guiers in order to ensure the sustainable performance of production systems and their resilience to climate change. The project was considered of critical importance because of the roles the lake plays in the provisioning of water, including to Dakar, and as regards increasing the resilience of ecosystems and production systems. The project included components to (i) improve the hydrological conditions of the Lake Guiers system and (ii) build capacity (e.g., provisioning of the DEFCCS) and support efforts for economic initiatives. As part of the first component, the project specifically aimed to (i) rehabilitate the infrastructure for the management of the lake; (ii) to restore the Ndiael Special Bird Sanctuary (*Réserve Spéciale d'Avifaune du Ndiael* - RSAN), Tocc Tocc and Nieti Yone; (iii) put in place management tools; and (iv) maintain water quality. The project undertook significant efforts to put in place the infrastructure necessary to restore the functioning of the Lake Guiers system and led to the removal of the RSAN from the Montreux Record.

Saint-Louis Emergency Recovery and Resilience Project (SERRP) - WB ID P166538

The SERRP project was developed in response to a call for support by the Mayor of Saint-Louis in December 2017 to address immediate threats from coastal erosion and develop medium and long-term means to improve the resilience of the area. The project has secured US\$ 38 million of the total US\$ 53 million project cost from the World Bank and the Government of Senegal. The project's development objective is to reduce the vulnerability of populations to coastal hazards along the Langue de Barbarie and strengthen urban and coastal resilience planning of the city of Saint-Louis. Anticipated results include: (i) approximately 500 households successfully relocated from high risk areas to safe housing and satisfactorily compensated and (ii) development of an Urban Coastal Resilience Plan for Saint-Louis. An ongoing initiative, the project has instigated a multi-partner crisis response in which the World Bank is collaborating closely with the French Development Agency (*Agence Française de Développement* - AFD) and the Red Cross to advance implementation.

West Africa Coastal Areas Resilience Investment Project – WB ID P162337 (WACA ResIP)

The WACA is a multi-country regional project that provides support to six countries: Benin, Côte d'Ivoire, Mauritania, São Tomé and Príncipe, Senegal and Togo. It aims to strengthen the resilience of targeted communities and areas in coastal West Africa to climate change and other natural hazards, preserve and rehabilitate natural coastal resources and ecosystems, spur economic development, increase social welfare and support the sustainable development of key growth sectors. The project was approved in 2018 and is

anticipated to run through 2023. The total project cost is US\$ 221.7 million and includes support from multiple donors such as the GEF (in countries other than Senegal and Mauritania), the International Development Association (IDA) and the Nordic Development Fund (NDF). The GCF has also indicated interest in providing finance for the project and other parallel co-financiers are expected to provide additional support, including the French Fund for the Global Environment (*Fonds Français pour l'Environnement Mondial - FFEM*), the AfDB, and the AFD. The project has four components: (i) strengthening regional integration; (ii) strengthening the policy and institutional framework, which will help countries develop the adequate policy framework and the necessary tools for the development and or operationalization of their coastal management strategies and plans, both at the national and regional levels; (iii) strengthening national physical and social investments, which aims to finance coastal investments, or subprojects, to protect vulnerable areas from coastal erosion and flooding, to support pollution control and waste management operations, and to promote climate-resilient coastal development; (iv) national coordination, which aims to ensure that the project is implemented in accordance with the Project Appraisal Document (PAD) and the country-specific project descriptions, and that the WACA Multi-Sectoral Investment Plans (MSIP) or agreed alternative national strategies or plans continue to form the basis for coordinated support from technical and financial partners to address the most pressing needs for management of the coastal zone. The WACA Platform is proposed to include a mechanism for donor coordination in support of countries' MSIP. The vision is that with time, the WACA Platform will be housed at a suitable regional institution, and a mosaic of projects, financed by the World Bank and other development partners, and introducing innovative instruments, leveraging public finance, and engaging the private sector, will emerge in an effort to maximize the effect of development finance.

Typha Fuel Construction West Africa (Typha Combustible Construction Afrique de l'Ouest – TyCCAO)

The TyCCAO project is a € 17.2 million regional initiative working to transition the energy sector and combat climate change by promoting the use renewable fuels and energy efficiency in the construction industry, including through the massification and dissemination of products made from Typha. The project was launched in 2018 for a provisional duration of five years and benefits from the support of numerous partners. Among the anticipated results and impacts of the project are : (i) implementation of a concerted management plan for Typha at the scale of the transboundary area between Senegal and Mauritania that is threatened by the proliferation of Typha; (ii) improvement and mechanization of the preliminary phases of exploitation of Typha; (iii) structuring of a viable industrial sector for the production of Typha coal; (iv) progressive autonomy of the coal sector through degressive support of Senegalese and Mauritanian entrepreneurs; (v) continuation of the development process of Typha-based building materials; (vi) support for the finalization and implementation of Senegal's climate regulations and the development of similar regulations in

Mauritania; (vii) dissemination of practices for the use of bio-sourced materials based on Typha, in particular through the training of actors in the energy and sustainable construction sectors.

BACoMaB Trust Fund (Fonds Fiduciaire du Banc d'Arguin et de la Biodiversité Côtière et Marine – BACoMAB)

The BACoMaB Trust Fund is a sustainable financing mechanism created in 2009 to preserve the exceptional natural and human capital of the Mauritanian coast and sea. It is a Foundation under English law, recognized as a "Charity" in the United Kingdom, with a headquarters agreement allowing it to operate in Mauritania, where it has been recognized as a public utility since December 2010. BACoMaB's capital comes from the sectoral support of fisheries agreements between Mauritania and the European Union (EU), the German Financial Cooperation (KfW), the Swiss Foundation MAVa, the AFD and the FFEM. This capital is invested in ethical and socially responsible financial markets, generating profits that are used to sustainably finance conservation and sustainable development activities for the benefit of Marine Protected Areas in Mauritania. At beneficiary sites (e.g., PND, PNBA, other coastal and marine areas in Mauritania), the activities supported by the BACoMaB Trust Fund aim to: (i) promote the conservation, protection and improvement of the physical and natural environment; (ii) promote sustainable development; (iii) promote education in the fields of biodiversity, conservation and sustainable management; and (iv) promote transparency, financial accountability and governance of protected areas. As part of their work, the BACoMaB has provided multiple grants to DNP since 2015 to support sustainable management of the hydrological system; restoration and conservation of habitats, species and biodiversity through regular monitoring and surveillance; co-management and sustainable exploitation practices; and institutional support.

Reinforcing Expertise in Sub-Saharan Africa on Birds and their Rational Use in favor of their Communities and Environment (Renforcement d'Expertise au Sud du Sahara sur les Oiseaux et leur Utilisation Rationnelle en faveur de leur Communautés et de leur Environnement - RESSOURCE)

The RESSOURCE project is focused on management of migratory water birds and aims to significantly improve the state of natural resources of the large Sahelian wetlands to benefit local populations, particularly in terms of food security and local development. Water bird populations are the natural resource targeted by the project. The project is funded for approximately € 5 million over the 2017-2021 period by the Food and Agriculture Organization (FAO), the FFEM and other partners. The project is being implemented in cooperation with the Governments of the countries concerned and other key technical partners such as France's National Agency for Wildlife and Hunting Management (*Office National de la Chasse et de la Faune Sauvage - ONCFS*), the French Agricultural Research Centre for International Development (*Centre de coopération Internationale en Recherche Agronomique pour le*

Développement - CIRAD) and the Secretariat of the African-Eurasian Migratory Waterbird Agreement (AEWA). Among the anticipated impacts are: (i) the results of project-supported bird counts inform the development of public policies; (ii) the composition and functioning of wetlands benefiting from a management plan are not altered; (iii) monitoring and sampling of bird populations demonstrate either positive population dynamics or negative dynamics that are not related to hunting pressures in wintering areas; (iv) local actors initiate and/or implement conservation actions for wetlands and waterfowl; and (v) improvements in the legal and institutional frameworks result in more actions to manage and preserve water birds. The project recognizes the importance of the Senegal River Delta within the context of its objectives.

Co-management of Marine, Coastal and Terrestrial Resources (Co-Management des ressources marines, côtières et terrestres - CorMCT)

This project supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) is being executed by the MEDD-MR from 2018 to 2019. The objective of the program is to assure population groups that depend on marine, coastal and terrestrial resources are better prepared to deal with the impacts of climate change. The project focuses on the PNBA and PND, and on the dune belt along the country's coast. It focuses on three areas: (i) information-based decision-making processes; (ii) the promotion of climate-sensitive integrated management of marine and coastal resources; and (iii) climate-sensitive management of communally used forest, bush and grazing resources. The project builds on the extensive history of Mauritanian-German Cooperation on issues related to decentralized natural resource management and adaptation to climate change, including in the area of wetlands. Among the other major programs that have been supported through this partnership are the Integrated Natural Resources Management in Eastern Mauritania (*Projet Gestion Intégrée des Ressources Naturelles de l'Est Mauritanien* – GIRNEM) and the Program for the Management of Natural Resources (*Programme de Gestion des Ressources Naturelles* – ProGRN). Within the ProGRN program, implemented by the German International Cooperation Agency (GIZ), the third component of the project design was dedicated to the management of the PNBA and the BACoMaB trust fund. This component also included support to the SDTBR and PND, the creation of inter-professional associations and the monitoring of fishing activities in marine and coastal zones. Under the first component of the project, there was also an objective related to coastal zone biodiversity conservation. This component came out of concern regarding the potential for conflict between the fisheries and the oil sector because of environmental impacts and due to the potential future financial dependence of Mauritania on extractives and non-renewable industries. This part of the program, which was carried out by Environmental Resources Management (ERM) and GOPA Consultants in 2012-2013 worked with

partners to build the capacity to develop and implement adequate policies, rules, guidelines and measures which lead to the reduction of risks and help protect coastal biodiversity.

Project for the Preservation and Development of the Mangrove (Projet de Sauvegarde et de Mise en Valeur de la Mangrove)

The Project for the Preservation and Development of the Mangrove is focused on protecting the mangroves near Saint Louis. Since 2012, with the support of multiple partners (e.g., City of Lille, the metropolitan area of Lille, the ITANCIA Foundation) the project has brought together local actors to progress sustainable, integrated and planned management of the mangrove of Saint-Louis and its biodiversity. Among the local partners involved in implementation are local authorities, the regional development agency (*Agence Régionale de Développement - ARD*), and regional delegations of ministries responsible for forests, water and fishing.

MAVA (Fondation pour la Nature / Foundation for Nature)

The MAVA Foundation is actively engaged in coastal management and conservation in West Africa and is currently in the process of implementing its West Africa strategy for 2016 to 2022. In West Africa, MAVA focuses on sea turtles, coastal wetlands, seabirds, mangroves, seagrass beds and small pelagic fish. In particular, they support initiatives to (i) minimize disturbance and eradicate illegal harvesting in important green and loggerhead turtle breeding sites, as well as seabird breeding colonies in MPAs; (ii) end disturbance of breeding and wintering shorebirds in priority coastal wetlands; (iii) improve pollution risk management in offshore oil and gas activities; (iv) promote sustainability and regulation of infrastructure development in critical biodiversity sites; (v) promote conservation of seagrass beds at regional level; (vi) reduce bycatch of seabirds and sea turtles in specific fisheries; and (vii) significantly contribute to preserving small coastal pelagic fish stocks. They have established action plans that detail their means to contribute to these objectives. As co-financing to this project, MAVA's investment will be used to: (i) strengthen management of key protected areas within the SDTBR, including as regards habitat restoration, co-managed areas, livelihood alternatives, capacity building, education, awareness, policy and advocacy; and (ii) strengthen management of key sites of critical importance for small pelagic fish stocks.

Plan of Action for Wetlands and Coastal Birds in West Africa (Plan d'Actions Zones Humides et Oiseaux Côtiers – PAZHOC)

The regional PAZHOC aims to improve the management and monitoring of coastal wetlands that are important from both an economic and biodiversity perspective, notably as regards significant bird populations that migrate along the Atlantic coastline and

bird colonies that reproduce in mangroves and on neighboring islands. The plan of action is funded by the MAVA Foundation for Nature for € 5.5 million over the 2018-2020 period and is being implemented by the Regional Partnership for Coastal and Marine Conservation (*Partenariat Régional pour la Conservation Côtière et Marine* - PRCM). Among the anticipated results of the PAZHOC are: (i) strengthened research and monitoring capacities at national and site level; knowledge on population dynamics, ecological interactions and their relevance to conservation available; (iii) strengthened cooperation among the world heritage sites of migration routes; and (iv) management plans are implemented and regulations enforced. The Senegal River Delta is one of four priority sites being targeted by the implementation of this plan of action.

ECOTOUR

The ECOTOUR project aims to enhance the natural and cultural heritage of coastal areas and protected areas of the Canary Islands, the Azores, Cape Verde, Mauritania and Senegal. The project is funded through the EU interregional program (2014-2020) for Madeira-Azores-Canarias, and brings together different partners such as the Centre for Marine Science Technology (CETECIMA), the University of Las Palmas of Gran Canaria, the Association of the Azores of Regional Tourism and the PRCM.

The project is centered around a number of strategic outputs, which include: (i) inventories of natural and cultural areas with touristic potential, assessments of infrastructure and services available for tourists, and the identification of tour options and potential companies; (ii) the production of ecotourism plans, including assessments of risks in terms of water quality, with feasibility studies, and an economic analysis of possible products; (iii) support for the development of sustainable practices to increase tourism potential, in existing protected areas and in areas with good restoration potential; and (iv) dissemination of lessons and best practices in coastal tourism development, including the development of training programs and an on-line training platform.

The PND and the PNLB are among the sites targeted by the ECOTOUR project. As co-financing to the project, ECOTOUR's investment will support efforts to strengthen opportunities for sustainable eco-tourism in the SDTBR and the establishment of public-private partnerships within this sector.

Support Project for the Senegal Delta Transboundary Biosphere Reserve

This project which had two phases that ran from 2004 to 2008 was implemented by the IUCN with support from the MAVA Foundation (through its Project to Support the Management of Wetlands in the Lower Delta of the Senegal River) the and the

Directorate-General for International Cooperation (DGIS) of the Netherlands. With a total budget of € 1.1 million the project worked to: create the SDTBR; establish the Transnational Steering Committee (*Comité Transnational d'Orientation* - CTO); support the development of ecological monitoring and ecotourism; and raise the awareness of ministries, local stakeholders and technical and financial partners on the SDTBR and its vision.

GEF interventions

The proposed transboundary project will intervene in the GEF focal area of international waters (IW), and responds to the following IW objectives and programs:

- IW 1: Catalyze sustainable management of transboundary water systems by supporting multistate cooperation through foundational capacity building, targeted research and portfolio learning.

Program 1. Foster Cooperation for Sustainable Use of Transboundary Water Systems and Economic Growth

- IW 2: Catalyze investments to balance competing water-uses in the management of transboundary surface and groundwater and to enhance multi-state cooperation.

Program 3. Advance Conjunctive Management of Surface and Groundwater through Effective Institutional, Legal, and Policy Measures

Program 4. Addressing the Water/Food/Energy/Ecosystem Security Nexus

Given the nature of freshwater systems management, the project will also touch on climate change, biodiversity and land degradation. The GEF has supported a series of other past and present projects that address these same focal areas and associated global environmental problems in the same geographic area as this project (Table 6). The present project will build on and be closely coordinated with these interventions.

Among the most relevant of these projects are:

Senegal River Basin Water and Environmental Management Program – GEF ID 1109

This US\$ 6,898,136 project was implemented by the OVMS between 2003 and 2008. It was conceived to scale up institutional capacity building for environmental management at regional, national, and local levels, strengthen the regional data and knowledge base, and institutionalize local stakeholder participation in water resources management. Designed to generate global benefits through sustainable transboundary water resources management and comprehensive participation of local stakeholders in land and water management in the Senegal River Basin, the project's objective was to ensure the sustainable management of the basin's water resources, biodiversity and environment. The project had four main components: (i) establishing effective institutional structures and mechanisms for the correct management of the Senegal Basin, both at regional and national level; (ii) a thorough inventory of the socio-economic and bio-physical conditions, and the establishment of easily accessible databases in each country and at the OVMS; (iii) the Priority and Opportunities Analysis Component, involving the identification of priority transboundary issues, the definition of mitigation measures, the identification of priorities and opportunities perceived by the public in the Basin; and (iv) the Action Program for the Global Environment, including the integration of measures identified under the third component in an action program featuring both national and regional/global components, and the implementation of necessary reforms. Among the key achievements of the program were: the Guinea's hydrology network in the upstream portion was upgraded and fully integrated into the existing OMVS hydrology network; a fully operational and compatible framework for transboundary information exchange and knowledge sharing on the environmental and water resources status of the Senegal River Basin was established; a comprehensive TDA was produced, and a Strategic Action Plan for the Senegal River Basin was completed based on the findings of the TDA and following an impressively participatory and qualitative process.

Senegal River Basin Climate Change Resilience Development Project - GEF ID 5133 / Senegal River Basin Multi-Purpose Water Resources Development Project 2 (IDA) - WB ID P131323

This US\$ 16 million Senegal River Basin Climate Change Resilience Development Project is funded through the GEF's Least Developed Countries Fund (LDCF) and is part of a much larger US\$ 228.5 million Senegal River Basin Multi-Purpose Water Resources Development (MWRD2) Project being supported by the World Bank's IDA. The MWRD2 is the second phase of a 10-year program which aims to enhance regional integration among the countries of the Senegal River Basin for multi-purpose water resources development that fosters improved community livelihoods. The project's Development Objective is to improve coordinated management of water resources for socially, environmentally and economically sustainable development in the Senegal River Basin. The project aims to strengthen the capacity of the OMVS and has three main components: (i) institutional development to build capacity for cooperative management; (ii) local level multi-purpose water resources development, including initiatives to promote

income-generation and improve livelihoods; and (iii) infrastructure planning and management to advance climate resilient water resources planning and development.

The MWRD2 was approved for funding on December 5, 2013 and is slated to continue until June 30, 2021. Its areas of intervention include the wilayas of Gorgol (Region of Kaedi) and Trarza (Region of Rosso) in Mauritania and the Departments of Dagana (Region of Saint Louis) and Matam (Region of Matam) in Senegal. The project incorporates multiple initiatives to build capacity to adapt to climate change and improve resilience to climate change.

Promoting Innovative Finance and Community Based Adaptation in Communes Surrounding Community Natural Reserves (Ferlo, Niokolo Koba, Lower Senegal River Delta & Saloum River Delta), Senegal - GEF ID 5867

This US\$ 33 million project being implemented by the MEDD-SN includes US\$ 5.46 million in support from the LDCF of the GEF. The project objective is to “promote sustainable community financing and adaptation mechanisms in communes surrounding RNC”. The project is based on (i) establishing innovative finance mechanisms that bring regular additional incomes at local level dedicated to finance climate change adaptation actions and (ii) bringing investments and increasing capacities of communities (in particular women and young people) in order to provide them with more long-term solutions to adapt climate change and variability. Four sites have been identified for project implementation because of their vulnerability towards climate change and the presence of RNC. One of the sites is the Senegal River Delta, in the communes of Gandon and Ndiébène.

Towards Sustainable Management of the Canary Current Large Marine Ecosystem (CCLME) – Initial Support to SAP Implementation – GEF ID 9940

The concept for this proposed medium-sized, regional project has been approved. This US\$ 8.43 million project is seeking US\$ 1.83 million of support from the GEF under the IW focal area. Among the aims of the project will be (i) strengthening partnerships and fostering investment for CCLME SAP implementation and (ii) strengthening knowledge, management and capacity of fisheries institutions and communities for the sustainable use of transboundary fisheries resources and associated ecosystems.

Cities-IAP: Sustainable Cities Initiative – GEF ID 9123

The US\$ 8.72 million Sustainable Cities Initiative aims to improve capacity to plan and implement sustainable city management practices, including climate resilience, in selected urban areas. It includes three cities in Senegal: Saint Louis, Dakar and Diamniadio. It also has a component dedicated to national coverage. The initiative represents an important opportunity for collaboration to address risks associated with climate change in the Saint Louis urban area.

Small Grants Programme and COMPACT

Mauritania and Senegal have both been recipients of support from the GEF's Small Grants Programme, which finances community-led initiatives to address global environmental and sustainable development issues and has a strong focus on capacity development and learning. The program is implemented by the United Nations Development Programme (UNDP) on behalf of the GEF Partnership; its sixth Operational Phase (OP) ran from 2015 to 2018. Since 2001, Mauritania has benefited from 250 small grants projects representing a total grant amount of over US\$ 6.77 million. Thirty-two percent of the projects focused on biodiversity, 28% land degradation, 21% climate change mitigation, 14% international waters, 3% community-based adaptation and 2% chemicals. Since 1993, Senegal has benefited from 284 small grants equalling a total grant amount of over US\$ 9.65 million. Sixty-one percent of these have been in the area of biodiversity, 17% land degradation, 10% climate change mitigation, 7% community-based adaptation, 4% international waters and 1% chemicals. In the early 2000s, the SGP began supporting a number of local initiatives in the SDTBR to address threats to the Djoudj Bird Sanctuary, in particular the fight against *Salvinia molesta*.

The Community Management of Protected Areas Conservation (COMPACT) program is a joint initiative of the UNDP-implemented SGP and the United Nations Foundation (UNF). Launched in 2000, it aims to replicate the existing SGP delivery mechanism to strengthen biodiversity conservation and community empowerment in natural UNESCO World Heritage Sites and overlapping Biosphere Reserves. In 2007, the SDTBR became one of the eight sites that have been the focus of the program. As part of a comprehensive landscape level planning process, COMPACT developed a baseline analysis, conceptual model of key threats, and site strategy involving SDTBR stakeholders. The program subsequently issued small grants focused on (i) the rehabilitation of wildlife habitat, (ii) reducing pressure on natural resources, (iii) ecological monitoring, and (iv) capacity-building. These grants covered numerous types of interventions, including: removal of *Typha australis*; establishment of greater ecological connectivity for fish; restoration of bird habitat; setting up of community-run nurseries; support for women's cooperatives; an anti-erosion dam to protect bird nesting and reproduction sites; monitoring and protection of nesting sites for marine turtles; promotion of alternative sources of

energy; promotion of forage species, improved agricultural, agroforestry and sustainable fisheries practices; and capacity building of numerous stakeholders, including volunteer eco-guards, women's associations and others.

The list of small grants that have been issued in the SDTBR area is extensive. It includes among others: *Projet de réhabilitation de l'habitat de l'avifaune du parc national de la Langue de Barbarie* ; *Projet communautaire de restauration de la biodiversité dans la réserve spéciale de faune de Gueumbeul et sa périphérie*; *Projet participatif de restauration de la biodiversité dans l'aire marine protégée de Saint-Louis*; *Projet d'appui à la mise en œuvre de la réserve naturelle communautaire de Tocc Tocc* ; *Projet de conservation et de valorisation de la mangrove de Diele Mbame*; *Projet d'appui à l'APAC du Lac de Guiers*; *Projet de réhabilitation de la forêt classée de Mpal*; *Projet de restauration et de conservation de la biodiversité dans la forêt classée de Rao et des forêts communautaire de Gandon*; *Pisciculture d'espèces menacées et de repeuplement de la Taouey*; *Projet d'amélioration de la biodiversité de la réserve spéciale de faune du Ndiael par la réhabilitation du réseau hydrographique*; *Projet de restauration de la biodiversité en zones Arides*; *Projet de protection du parc national des oiseaux de Djoudj*; *Projet de lutte contre une plante envahissante dans les eaux du fleuve Senegal et au parc national des oiseaux de Djoudj*; *Projet de lutte contre la prolifération du Typha domingensis et de la valorisation de sa biomasse à Ziré Takhredient*; *Projet de gestion pastorale et de conservation de la biodiversité dans le site de Mbalal*; and *Récupération de terres agricoles dégradées par Prosopis juliflora à Keur Macène*.

A full list of GEF interventions in Mauritania and Senegal is provided in Appendix 4 of the Project Document.

c) The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the Project

This project will strengthen cooperation for improved ecosystem management and restoration in the Senegal River Delta of Mauritania and Senegal. Specifically, the project will work to improve the governance and management effectiveness of the Senegal Delta Transboundary Biosphere Reserve (SDTBR). In achieving this goal, the project will build on the findings of the 2007 and 2016 TDA for the Senegal River Basin and directly respond to priority measures laid out in its 2017 SAP, including Measure 3 of LTEQO 5: Support efforts for the sustainable management of the SDTBR (Section 4.5).

Designated in 2005, the SDTBR covers 641,768 hectares of the Senegal Delta and encompasses a set of core protected areas, along with buffer and transition zones. It was established as a means to integrate environmental, social and economic considerations

while reconciling biodiversity conservation with the sustainable use of natural resources over the long-term. As a transboundary initiative, the SDTBR was also created to foster dialogue and the application of scientifically sound means to conserve ecosystems across national boundaries.

Assuring common understanding and official recognition of a contemporary vision, mandate, and legal framework for the SDTBR, building on propositions first made in 2005, will establish a clear foundation for the operationalization of the SDTBR. Support will also be provided to strengthen and render functional the governance and management bodies of the SDTBR, including: a Transnational Steering Committee (*Comité Transnational d'Orientation* - CTO), a Scientific and Technical Commission (*Commission Scientifique et Technique* - CST), a Transboundary Management Unit (*Unité de Gestion Transfrontalière* - UGT), two National Committees (*Comité National* - NC) and a framework for transboundary coordination between local platforms. These bodies, which have not previously had the means to be fully operational or effective, are critical to assure representational participation of key stakeholder groups in the governance of the SDTBR and its natural resources. They also provide an essential means of establishing transboundary dialogue around issues of water and environmental management, and will facilitate the implementation of coordinated actions across the multiple land use areas of the SDTBR.

A Management Plan for the SDTBR will be produced via a participatory process to provide the direction necessary to deliver on the vision of the reserve. The plan will include explicit objectives, targets and priority actions to conserve biodiversity, assure the sustainable functioning of ecosystems and support sustainable development. As such, the plan will integrate the findings of the Senegal River Basin TDA on PEP in the Delta and contribute to numerous priority measures that have been identified for this area within the 2017 SAP. The gathering and analysis of information during the process to develop the management plan, and subsequent research and monitoring undertaken in the context of managing the SDTBR, will contribute to improved understanding on transboundary environmental problems in the lower Senegal Delta and facilitate more detailed transboundary diagnostic analyses and the identification and prioritization of priority actions in the future.

The SDTBR Management Plan will be accompanied by a series of supporting documents, including a SDTBR Monitoring and Research Master Plan. The plan will take into careful consideration the objectives laid out in the SDTBR Management Plan and will make explicit links between the management objectives of the SDTBR and research priorities. Recognizing the importance addressing capacity gaps as part of the SDTBR management, the project will also support the development and implementation of a capacity building strategy and action plan. Finally, to increase the organizational and financial resilience of the SDTBR, a business

plan for the 5 years following project implementation will be produced. This plan will reflect the ambitions of the SDTBR Management Plan and will consider multiple means of generating revenue, including partnerships with the private sector and potential funders such as the states of Mauritania and Senegal as well as interested donors.

Simultaneously, the project will work to progress integrated ecosystem-based management and restoration in the lower Senegal River Delta. In accordance with the priorities identified in the SDTBR Management Plan, the project will build local capacity and collaborate with local communities to develop, implement and track local action plans for ecosystem restoration, adaptation, and support to livelihoods and biodiversity conservation. During the PPG phase of project development, a preliminary set of proposed areas of strategic intervention were identified based on a series of criteria; however, the final sites and specific actions for inclusion in local action plans will be determined in the course of project implementation based on additional expert analysis and consultation with relevant stakeholder groups. These interventions are important to assure critical ecosystems and key habitats are restored and managed sustainably to protect water resources, forests and fisheries, and enhance ecosystem services. They will increase the resilience of local ecosystems and communities, and provide important co-benefits for biodiversity. Without the project's interventions, degradation of these areas will continue, having a direct and negative impact on the aquatic, terrestrial and migratory species that depend on the lower Senegal River Delta as well as on the ecosystem services which are vital to human well-being.

As part of its approach to restore and maintain ecosystems in the Delta, the project will also work to address unsustainable use practices. Approximately 400,000 people live within the SDTBR. While much of this population is concentrated in urban areas, farming, livestock, inland and coastal fisheries, and harvesting remain vital to food security and rural livelihoods. Recognizing the needs and ambitions of local stakeholders, the project will mobilize mechanisms to improve natural resource use and demonstrate practices that contribute to sustainable land, water resources and coastal/inland fisheries management. Specifically, technical expertise and a participatory process will be used to i) elaborate natural resource management and sustainable use strategies that contribute to the conservation and sustainable development objectives of the SDTBR and ii) to identify inclusive and sustainable income generating initiatives that contribute to the development ambitions of communities within the SDTBR. The sustainable use and income generating strategies that are elaborated will build on both community knowledge and scientific understanding, and will be adapted to respond to changing conditions, including as regards water management, climatic variability and anthropogenic pressures. Following a transparent prioritization process, the project will build capacity and support efforts to pilot and monitor a set of these strategies and initiatives. In the case of income generating initiatives, innovative financing mechanisms will be developed to encourage the sustainability of impacts. Without the intervention of this project, anthropogenic pressures will continue to negatively

impact and degrade the ecosystems of the SDTBR. These negative impacts will put at risk the ecological and livelihood systems upon which local communities directly depend and will increase the stressors confronting thousands of households.

In alignment with the objectives of a biosphere reserve, the project will ensure that scientific cooperation is strengthened to enhance data collection, analysis and learning. The project will support a transboundary research network to deliver up-to-date analyses that respond to priorities identified in the SDTBR Monitoring and Research Master Plan. In conjunction with the project's monitoring and evaluation system, these analyses will ensure the approaches tested through this project are evaluated. They will also serve as the basis for participatory decision-making and management of the SDTBR. The project will work at multiple levels to assure the lessons learned through the project are shared.

Finally, the project is well aligned with national priorities and policies in Mauritania and Senegal (Section 4.5), and the five Strategic Action Areas of the MAB Strategy 2015-2025 and its associated Lima Action Plan (2016-2025). This alignment includes, among many aspects, a commitment to helping build equitable and sustainable societies. Throughout the implementation of its three components, the project will progress this particular aim by:

- Promoting and facilitating the participation of women and marginalized groups in decision-making processes, including as regards the governance and management of the SDTBR;
- Ensuring that project strategies promote equitable access to and control of resources and benefits;
- Assuring strategies take into consideration the gender division of labor;
- Monitoring whether proposed interventions will limit the rights or access of women, youth and marginalized groups and developing appropriate mitigation measures;
- As feasible, capitalizing on opportunities to build on any existing equitable practices that promote the rights of women, youth and marginalized groups;
- Assuring a gender balance in efforts to build capacity (e.g., trainings, grants); and
- Assuring equitable benefit sharing with any income associated with project interventions.

Project goal and expected impact

The goal of this project is to improve ecosystem management, socio-economic development and governance in the SDTBR. As part of achieving this goal, the governance and management mechanisms for the transboundary SDTBR will become effectively functioning and the development of a SDTBR Management Plan based on conservation and development objectives will be accomplished. Through the implementation of the management plan, the project will develop and test actions to reduce the diminution and degradation of ecosystems, progress ecosystem restoration and support the sustainable management of biodiversity and natural resources. These actions will give rise to a multiplication of co-benefits, including enhanced options to mitigate and adapt to climate change.

By instituting functional governance and management mechanisms for the SDTBR, the project aims to establish accountable, efficient and resilient transboundary cooperation for the management of the Senegal Delta. This framework will foster dialogue to address and develop solutions to priority environmental problems and should help prevent conflicts over the management of resources. It will directly feed into broader initiatives to manage the Senegal River Basin. The project will also provide a valuable means for stakeholders to build their capacity to explore and promote innovative approaches for ecosystem restoration, natural resource management and economic development that are both appropriate and sustainable. Targeted scientific research, systematic monitoring and opportunities for learning will help to address capacity gaps and ensure that the approaches promoted are scientifically sound and fully evaluated.

The project is aligned with the national strategies of both Senegal and Mauritania, as detailed in Section 4.5. It builds off of previous transboundary planning exercises concerning the establishment of the SDTBR and its governance framework and will contribute to the MAB Strategic Objectives for 2015-2025 and the Lima Action Plan. The project also takes into consideration the experiences of previous and planned initiatives and projects implemented to support integrated water resource management and sustainable natural resource management in the Senegal River Basin (Section 3.5), including notably the significant projects supported by the GEF to ensure multi-purpose water resources development that conserves biodiversity and fosters improved community livelihoods.

The project has six main outcomes:

- Governance and management structures and institutional planning processes established and functional;

- Capacity building and training of key stakeholders has strengthened governance and actions on the ground;
- Awareness raising and communications contribute to advancing SDTBR objectives;
- Critical ecosystems and key habitats are managed sustainably to protect water resources, forests and fisheries and enhance ecosystem services;
- Stakeholders and SDTBR management mechanisms mobilized to achieve improved natural resource use and demonstrate sustainable practices; and
- Scientific cooperation is strengthened to enhance data collection, analysis and learning.

These outcomes will collectively deliver the environmental benefits described in Section 4.1.

Project components, their expected outcomes and outputs and planned activities

To attain the project goal, the project will be implemented through three (3) main components as presented in the following table. More detailed descriptions of each component as well as their associated outcomes, outputs and activities can be found below.

Project objective, components, outcomes and outputs

Project: Strengthening transboundary cooperation for improved ecosystem management and restoration in the Senegal River Delta (Mauritania and Senegal)		
Project Objective: Improved governance, ecosystem management and socio-economic development in the Senegal Delta Transboundary Biosphere Reserve (SDTBR)		
Component	Outcomes	Outputs
Component 1: Governance of the SDTBR	<u>Outcome 1.1:</u> Governance and management structures and institutional planning processes established and functional	<i>Output 1.1.1 - The vision, mandate and legal framework of the SDTBR are reviewed and endorsed, and governance and management bodies are functional</i>

		<i>Output 1.1.2 - The SDTBR Management Plan is produced and under implementation</i>
		<i>Output 1.1.3 - Transboundary coordination between local platforms is functional</i>
		<i>Output 1.1.4 - Partnerships with the private sector support the objectives of the SDTBR</i>
		<i>Output 1.1.5 - The annual budget of the SDTBR secretariat is agreed upon and resources are secured for the next 5 years (2024-2028)</i>
		<i>Output 1.1.6 - SDTBR Communication Strategy and Action Plan is produced and implemented</i>
	<u>Outcome 1.2:</u> Capacity building and training of key stakeholders has strengthened governance, management and actions on the ground	<i>Output 1.2.1 - Capacity Building Strategy and Action Plan is produced and implemented</i>
Component 2: Integrated ecosystem-based management and restoration in the lower Senegal River Delta	<u>Outcome 2.1:</u> Critical ecosystems and key habitats are managed sustainably to protect water resources, forests and fisheries, and enhance ecosystem services	<i>Output 2.1.1 - Knowledge gaps concerning key SDTBR management issues are identified, prioritized and used to inform an operational SDTBR Monitoring and Research Master Plan</i>
		<i>Output 2.1.2 - At least four local site or catchment action plans for ecosystem restoration, adaptation, and support to livelihoods and biodiversity conservation produced and implemented</i>
	<u>Outcome 2.2:</u> Stakeholders and SDTBR management mechanisms mobilized to achieve improved natural resource use and demonstrate sustainable practices	<i>Output 2.2.1 - At least two management or sustainable use strategies for land, water resources or continental fisheries developed and implemented</i>
		<i>Output 2.2.2 - At least three strategies for sustainable income generation that strengthen community engagement and resilience developed and implemented, and capacity of local user groups, including women, youth and other marginalized groups, improved to benefit from said strategies</i>
Component 3: Scientific cooperation, knowledge acquisition and sharing, and ecosystem monitoring and evaluation	<u>Outcome 3.1:</u> Scientific cooperation is strengthened to enhance data collection, analysis and learning	<i>Output 3.1.1 - Transboundary data collection processes, information management system and research network deliver up-to-date analyses that serve as the basis for participatory decision-making and management of the SDTBR</i>
	<u>Outcome 3.2:</u> The monitoring and evaluation system of the project is in place	<i>Output 3.2.1 - The project monitoring and evaluation plan is developed and implemented</i>

d) Incremental cost reasoning

1.1 Incremental cost reasoning (for GEF projects)

The baseline for this project is defined by the numerous ongoing projects and previous interventions in the Senegal River Basin, and more particularly within the Senegal River Delta. The project will build on efforts to establish IWRM in the Senegal River Basin. It will apply the experiences and lessons learned of other projects that have endeavored to restore and protect ecosystems in the Delta; mitigate the PEP facing the Delta; and establish decentralized sustainable natural resource management, which contributes to poverty alleviation and development. It will integrate existing traditional and scientific knowledge in its application of best practices for IWRM, ecosystem restoration and the establishment of sustainable production practices.

As detailed in Section 3.5, the baseline projects primarily target establishing a framework and capacity for IWRM at the level of the basin, providing support to address the impacts of PEP, or progressing decentralized natural resource management; the value added by the three components of this project are significant (Table 24). The baseline projects will primarily invest in managing water resources for multiple uses at the level of the Senegal River Basin and investing in large initiatives to mitigate the impacts of PEP. This IW project is additional as it represents a targeted response to address the lack of functional transboundary governance and management systems at the level of the Senegal River Delta. By establishing functional governance and management systems, the project will foster transboundary dialogues and promote the identification of innovative means to integrate socio-economic development, ecosystem management and biodiversity conservation. The ecosystems targeted by this project are critical to sustain resources and services upon which local and national communities depend and to protect globally significant biodiversity. These ecosystems have already undergone significant modification and are under increasing pressure from both climate change and anthropogenic stressors. Establishing a means to engage and build the capacity of stakeholders in the governance and management of these ecosystems is imperative to restoring and maintaining their values, as evidenced by the fact that establishing a functional SDTBR is included in the Senegal River Basin SAP. Without the specific response proposed by this IW project, the potential to establish effective transboundary management of the resources of the Senegal River Delta and to build the resilience of local ecosystems and communities will be decreased. There will also be an increase in the potential for conflicts over resources at the national and transboundary levels. Finally, the negative impacts of PEP on natural ecosystems, livelihoods and the capacity of the region to support sustainable development are likely to increase in the absence of this effort.

The project is also additional in that it will support the realization of commitments by the governments of Mauritania and Senegal to establish an effective biosphere reserve in the Senegal River Delta. As such, the project will contribute to the advancement of the five

Strategic Action Areas of the MAB Strategy 2015-2025 and its associated Lima Action Plan (2016-2025). The project will provide an important learning and exchange opportunity to progress sustainability science, and the progress innovative solutions that can be replicated at other sites.

Detailed incremental reasoning

<u>Business as usual scenario</u>	<u>Alternative scenario with the GEF resources</u>
Component 1: Governance of the SDTBR	
<p>The governments of Mauritania and Senegal have committed to the establishment of a functional biosphere reserve in the Senegal River Delta. Proposed structures for the governance and management of the SDTBR were elaborated in 2005, although the legal framework for these structures was not clearly established. Since their initial creation, these bodies have only functioned intermittently and there has been insufficient administrative or institutional capacity to develop and implement a management strategy for the SDTBR. This lack of sustained capacity weakens transboundary coordination and collaboration between Mauritania and Senegal (and other stakeholders, partners) at the level of the Delta, and limits opportunities to avert conflicts and find transboundary solutions to issues pertaining to ecosystem restoration and management, the use of natural resources, and sustainable development. It also limits the means to coordinate strategic approaches across the different core, buffer and transition areas of the SDTBR.</p> <p>Previous and ongoing projects have established a strong framework for the management of water resources at the scale of the Senegal River Basin through the OMVS and demonstrated positive impacts as regards addressing some PEP. Within this context, supporting the sustainable management of the SDTBR has been recognized as an important measure to address LTEQOs of the Senegal Basin SAP.</p> <p>National and local stakeholders generally acknowledge the importance of the SDTBR, but the reserve has not had the capacity to implement a strategic communications program that would raise awareness on the SDTBR or support its vision and objectives among various stakeholders, including local communities, national governments or the private sector. The SDTBR also has had no strategy to assure its financial sustainability and while some activities have been implemented in the context of the SDTBR, these have not been supported by a strong framework to assess and mitigate social and environmental impacts associated with the management of the SDTBR.</p> <p>The states of Mauritania and Senegal, and the international community, have recognized the importance of the natural values of the Senegal River Delta, as evidenced by the many established protected areas that form the core of the SDTBR. These areas have established regulations as regards the use of resources and have benefited from targeted support. Continued restoration and protection of these areas remains important to sustain or improve their associated values.</p> <p>More broadly, the states of Mauritania and Senegal have committed to a process of decentralization and have established a legal and regulatory framework to operationalize this process in various sectors of natural resource management. Current capacity and management systems in the buffer and transition zones of the SDTBR are unable to</p>	<p>Component 1 is designed to strengthen and render functional the governance and management of the SDTBR. Under this component, a current vision, mandate and legal framework for the SDTBR will be established to ensure a common and clear foundation for operationalization of the SDTBR. A critical set of SDTBR governance and management bodies will also be formed based on the structure proposed in 2005. These bodies will provide important platforms for stakeholder engagement, transboundary coordination, and collaboration at multiple levels to advance the objectives of the SDTBR. This will help to avert conflicts and provide important opportunities to collectively develop solutions on how to address PEP and ensure environmental protection, while also meeting the development objectives of the area.</p> <p>Through a transparent and participatory process, a technically and scientifically sound SDTBR Management Plan with explicit objectives, targets and actions will be produced. The plan will consider climate change and variability as well as the trends as regards resource needs in the SDTBR (and beyond). The plan will build on the experiences of previous and ongoing project and provide clear direction for the management of the SDTBR. It will also allow for the development of strategic approaches to address PEP and advance the objectives of the SDTBR across national borders and different zones of the SDTBR. The realization of the objectives in this plan, will be supported by a communications strategy and action plan, which will raise awareness on the SDTBR and inform decision-makers as regards issues pertaining to the management of resources within the SDTBR. Business planning and exploring opportunities to partner with the private sector will help to improve the sustainability of the SDTBR.</p> <p>Under this component, the technical capacity of different user groups to implement, monitor and adapt strategies for ecosystem restoration, natural resource management and sustainable income generation (as prioritized in the SDTBR Management Plan) will be improved. A capacity building strategy and action plan will integrate significant technical, operational and financial capacity building to ensure local stakeholders are enabled and have the necessary technical understanding and means to implement priority actions and strategies of the SDTBR. Specific training and other capacity building measures will be proposed for groups that are vulnerable to social and economic marginalization.</p> <p>Under this scenario, the SDTBR will be rendered functional and will benefit from a sound management plan. Stakeholders, including vulnerable groups, will also have improved means to participate in the governance and management of the SDTBR, including through transboundary dialogues. Stakeholders will also have improved capacity to implement strategies for ecosystem restoration and sustainable use. Finally, the sustainability of the</p>

<u>Business as usual scenario</u>	<u>Alternative scenario with the GEF resources</u>
<p>address all PEP and without this project, will most likely continue to be degraded and their resources overexploited. This will have negative impacts to biodiversity and local livelihoods.</p>	<p>SDTBR will be improved through strategic financial planning and engagement with partners, including national governments, the private sector and other potential donors.</p>
<p><u>Co-financing:</u></p> <p>- USD 2,350,000</p>	<p><u>GEF funds:</u></p> <p>- USD 819,030</p>
<p>Component 2: Integrated ecosystem-based management and restoration in the lower Senegal River Delta</p>	
<p>Ecosystems in the SDTBR have been and continue to be heavily impacted and transformed by climate change and variability and anthropogenic modifications. Large numbers of people inside and outside of the SDTBR are dependent on its resources, including as regards water, energy and food production. Looking forward, the demands on these resources are anticipated to increase.</p> <p>In addition, rural populations within the SDTBR remain dependent on the primary sector for their livelihoods and food security. While many of the anthropogenic modifications to the hydrologic systems of the Senegal River Basin have had positive impacts, the negative environmental impacts have been significant, resulting in considerable degradation of natural ecosystems and contributing to significant changes as regards production practices. The list of environmental problems is extensive and includes modifications in estuarine hydrodynamics, land degradation, degradation of wetlands, the proliferation of invasive species and climate change. A TDA and SAP at the level of the Senegal River Basin assess the problems and identify priority actions to respond.</p> <p>Within Mauritania and Senegal, numerous projects have worked to improve productivity and advance development. A subset of these projects has incorporated aspects designed to strengthen decentralized natural resource management, improve local income generation and build the resilience of communities and ecosystems. Numerous restoration projects, including within the core protected areas of the SDTBR, have also demonstrated positive social and environmental impacts. Finally, multiple previous and ongoing projects have been designed to target impacts of the PEP which affect the region. Many of these projects have positive impacts, but there has not been a means to capitalize on their experiences in the context of the SDTBR. This prevents more strategic efforts to address the degradation of the resource base and other negative impacts.</p> <p>At present, current levels of technical, operational and financial capacity of various</p>	<p>Component 2 of this project will progress ecosystem restoration and integrated ecosystem-based management in the lower Senegal River Delta.</p> <p>A SDTBR Monitoring and Research Master Plan will review existing data, identify important information gaps and prioritize needs for applied research that would strengthen the management effectiveness of the SDTBR. The focus will be on identifying areas of research that are problem driven and solution oriented, and thus able to directly inform the management practices of the SDTBR, including transdisciplinary research that considers the dynamic interactions between natural ecosystems and society.</p> <p>Priority sites for ecosystem restoration within the SDTBR will be identified and local plans for restoration will be developed. Appropriate strategies for restoration will be developed based on traditional knowledge, science and the experiences of other previous or ongoing projects. The capacity of stakeholders to implement these plans will be established and their implementation will be supported and monitored. As a result, there will be an increase in the number of hectares restored and a multiplication of co-benefits.</p> <p>The project will work with partners, including local stakeholders, to develop and implement a series of natural resource management and sustainable use strategies. These strategies will contribute to IWRM and mitigate the impacts of PEP in the Delta, in accordance with the management objectives of the SDTBR. The project will also undertake activities to strengthen community engagement and increase their resilience, including inclusive and sustainable income generating activities that are compatible with the sustainable use of natural ecosystems and biodiversity.</p> <p>The project will assure the capacity to implement and monitor natural resource management and income generating initiatives. In the case of the latter, this will include financial support in the form of small grants. As a result, local communities and administrations, and other</p>

<u>Business as usual scenario</u>	<u>Alternative scenario with the GEF resources</u>
<p>stakeholders are insufficient to develop and implement restoration, sustainable use and income generating strategies that are compatible with the sustainability of natural ecosystems. There is an ongoing need to build this capacity.</p>	<p>stakeholders will benefit from significant technical, operational and financial capacity building. Improved understanding of the causes of PEP, the effects of climate change, the effects of anthropogenic modifications and management solutions, will be raised among key stakeholders.</p> <p>All the initiatives will build on existing traditional and scientific knowledge and foster additional transboundary learning. They will also be selected in part based on their potential for replicability and scaling up of impacts. The impacts of these strategies will be evaluated for their effectiveness and strengthened through applied research and transboundary collaboration.</p> <p>Under this scenario, additional hectares of natural ecosystems in the SDTBR will be restored providing multiple co-benefits. The maintenance of productive multi-use systems will also be improved through the application of more sustainable use and management strategies. Local communities will also benefit from a diversification of income-generating activities being implemented using sustainable practices which are adapted to climate variability and cover several production systems: fisheries, non-timber forest products, agriculture and livestock. Other ongoing or planned projects dealing with IWRM, the PEP affecting the Delta, and natural resource management more generally will also benefit from the project's focus on advancing and integrating sustainability science.</p> <p>Undertaking the activities proposed under Component 2 within the framework of the SDTBR and official mechanisms for local and decentralized management remains important to improve appropriation of the SDTBR and improved natural resource management strategies and to motivate stakeholders to change behaviors.</p> <p>The overall impact will be a reduction in the diminution and degradation of natural ecosystems, an increase in restored ecosystems and a multiplication of co-benefits. Local communities will also benefit from improved sustainability of their resource base and their use practices, and increased income generation.</p>
<p><u>Co-financing:</u></p> <p>- USD 4,950,000</p>	<p><u>GEF funds:</u></p> <p>- USD 1,820,692</p>
Component 3: Scientific cooperation, knowledge acquisition and sharing, and ecosystem monitoring and evaluation	
<p>At present, existing environmental, social and economic data from the SDTBR has not been compiled. Without gathering and analyzing this information and making it accessible to decision-makers, it is impossible to develop high-quality management strategies.</p> <p>There are multiple national and international academic and research institutions working (i) within the project area and/or (ii) on issues relevant to its management (e.g., water quality and management, natural resource management, socio-economic development); however, there is no framework for coordination, prioritization or application of this work at the level of the SDTBR or the Senegal River Delta. This lack of a solid framework for collaboration and sharing of knowledge affects the effectiveness of this work and its ability to be applied and shared efficiently. It also makes it impossible for the SDTBR to effectively contribute to the MAB objective of facilitating sustainability science. In addition, there is no established mechanism to promote transboundary knowledge exchange at the level of the Delta.</p>	<p>Through Component 3 of this project, existing data from the SDTBR will be compiled and analyzed. This information will inform the identification and prioritization of SDTBR management objectives and strategies, and contribute to the adaptive management of the SDTBR.</p> <p>A transboundary research network made up of existing research bodies, academic institutions and key individuals will be established and supported to undertake collaborative, applied research and monitoring in accordance with the SDTBR Monitoring and Research Master Plan. These efforts will be used to monitor environmental, economic and social trends and inform SDTBR management. They will also be used to build the capacity of stakeholders and inform a wide body of decision-makers. Finally, in accordance with the priorities of the MAB program, they will contribute to advancing key areas of sustainability science and developing transformative solutions that simultaneously address the threats</p>

<u>Business as usual scenario</u>	<u>Alternative scenario with the GEF resources</u>
<p>Without this project this status would not change.</p> <p>Finally, clear data and information on the impacts of different management strategies is inconsistent across the SDTBR. This weakens the appropriation and motivation of stakeholders to adopt improved and adapted practices and contributes to continuing degradation of natural resources.</p>	<p>facing the ecosystems of the SDTBR and promote sustainable development. By establishing a simple and open data sharing and management mechanism, the project will further promote collaboration and assure the sustainability of the system beyond the duration of the project.</p> <p>Under this component, the project will also support transboundary knowledge exchange to foster collaboration, eliminate knowledge gaps and expediate the development of successful solutions for the effective management of the SDTBR. The project will also actively contribute to initiatives that promote exchange and learning among different levels of stakeholders, including at the national, regional and international levels.</p> <p>Finally, the project will work to document the project's degree of achievement based on results-based monitoring. This monitoring, and the associated dissemination of results is important to evaluate the appropriateness of interventions, and sustain stakeholder motivation. Fully integrated with other components of the project, this monitoring will provide an important opportunity for stakeholders to self-assess progress and establish formal tracking tools to evaluate progress towards establishing effective management of the SDTBR and its resources. It will also assure the systematic application of standards to manage and mitigate any environmental and social impacts during the course of the project.</p>
<p><u>Co-financing:</u></p> <p>- USD 900,000</p>	<p><u>GEF funds:</u></p> <p>- USD 275,525</p>

e) Global environmental benefits

The project seeks to deliver benefit to both the environmental and human well-being at multiple scales. Among the anticipated benefits are the following:

- **562,470 hectares of the Senegal River Delta comprising the SDTBR are under improved integrated water resource management.** The project will support the establishment of shared governance and management bodies for the SDTBR, as well as the completion and implementation of a transboundary SDTBR Management Plan. This will provide an important framework for stakeholders to consider water needs and how the conservation of water resources and the maintenance of the water cycle can be managed within the SDTBR. These efforts should feed into the broader framework for managing the Senegal River Basin, including the SAP developed by the OMVS by helping to improve water quantity and quality for local use.

- **Effective transboundary governance and management reduces threats from priority environmental problems to the ecosystems of the SDTBR and contributes to their restoration.** Strengthening of transboundary dialogues, the establishment of a functioning governance and management framework, the implementation of joint actions and targeted capacity building will be used to reduce threats to the ecosystems of the SDTBR and contribute to their restoration. These efforts will directly respond to PEP and priority actions identified in the SAP for the Senegal River Basin, and should also foster learning and reduce conflicts over the use and exploitation of natural resources in the SDTBR.
- **Fight against and reduction of the degradation of natural ecosystems, including deltaic plains and dunes.** The project will work to reverse where possible negative patterns of use and support the restoration of ecosystems. By enhancing ecosystem integrity, the project should improve properties of natural ecosystems (e.g., soil and water quality through improved land management practices) and also reduce risks associated with food security, rising temperatures, unpredictable rainfall patterns, sea level rise and storm surges.
- **Improved protection of approximately 58,440 hectares of wetlands.** The project will support the protection of natural and artificially-maintained wetlands within the SDTBR. These wetlands are found within different land use areas, including protected areas. The area of wetlands has been estimated based on available land cover information, but will be further detailed in the course of project implementation.
- **Up to 4 areas (approximately 2,000 to 5,000 hectares) benefit from restored habitat, including wetlands.** The project will support measures to restore critical habitats in the SDTBR. These efforts will build on the lessons learned from previous efforts within the SDTBR, and will include interventions to control invasive species, maintain the water regime and address unsustainable practices.
- **Up to 2 areas (up to 2,000 hectares) benefit from reduction in invasive species.** Among the restoration strategies the project will apply are strategies to control invasive species.
- **Local communities of the SDTBR benefiting from improved or alternative livelihoods.** The project will support the development of sustainable value chains. These activities will build the resilience of local communities and progress development objectives.
- **Restored and sustained ecosystems goods and services.** The project will generate sustainable co-benefits due to a reduction in the diminution and degradation, as well as the restoration, of ecosystems and their functions. This will improve the persistence of aquatic, terrestrial and migratory species; contribute to maintaining species richness and trophic dynamics; help

maintain the ecosystems' capacities to ensure multiple ecosystem services; and provide increased opportunities for food security and livelihoods.

- **Reduced vulnerability to climate variability and climate-related risks.** Transboundary cooperation, integrated water resource management, the restoration of ecosystems, the introduction of climate-resilient livelihood options, increased awareness and capacity building will together improve the resilience of natural ecosystems and local communities in the SDTBR to climate change.
 - **Improved understanding and increased awareness on the many benefits of integrated water resource management as well as on the linkages between the environment and lifestyle (food, energy, economy, culture), the impacts of climate change and the importance of biodiversity and ecosystem services.** The project will work to raise the awareness of stakeholders at multiple levels on issues affecting the integrity of ecosystems, the delivery of the goods and services they provide, and human well-being in the SDTBR. The project will also support targeted scientific investigations and other learning opportunities and experiences to better understand how the issues that affect the social and environmental systems of the SDTBR can be appropriately and sustainably managed. Finally, the project will work to ensure the approaches tested through this project are evaluated and lessons learned are shared.

f) Innovation, Sustainability and potential for scaling-up

Sustainability refers to the ability of a project to maintain an acceptable level of benefit flows through its economic life, that is the continuation of project-derived benefits and impacts (i.e., institutional, environmental, social, economic and financial) beyond the project. In order to achieve sustainability, this project builds on: (i) an established political commitment from the governments of Mauritania and Senegal to establish a functional transboundary biosphere reserve, (ii) an assurance that governance and management systems for the SDTBR will be participatory and representative, (iii) an existing transnational management and monitoring framework at the level of the Senegal River Basin, (iv) a strong understanding of the environmental problems facing the SDTBR, (v) a commitment to use the SDTBR to foster dialogue and test practical means to conserve ecosystems beyond national boundaries, (vi) a dedication to building the capacity of stakeholders and (vii) a guarantee to support research and promote knowledge exchange and learning at multiple levels.

1.1.1 Financial and economic sustainability

The economic context of the SDTBR is extremely vulnerable due to its near complete reliance on natural resources and the vulnerability of this resource base to (i) anthropogenic interventions and pressures and (ii) climate change and variability. The region's environment and socio-economic has already seen major changes from prolonged droughts and human interventions (i.e., construction of dams and associated other infrastructure) and the area now faces a series of PEP. These changes have also contributed to significant social changes in the Delta (e.g., rural exodus, shifts in agricultural and pastoral practices). The demands for water and pressures on the broader resource base are expected to continue to increase in the face of demographic pressure, economic development and climate change. Finding ecosystem-based solutions to many of the PEP facing the Delta requires engaging stakeholders in an approach that transcends national borders. This project will work to address PEP of the Delta and build the resilience of its ecosystems by establishing a transboundary framework for dialogue, coordination and implementation. Establishing functional governance and management systems for the SDTBR will provide a framework to integrate economic, social and environmental considerations while reconciling biodiversity conservation with the sustainable use of natural resources over the long-term. It will also address the degradation of the resource base and promote the adoption of sustainable production practices through coordinated interventions at the local level. Project interventions will be founded on traditional knowledge and science, and will be supported by additional research and impact monitoring to advance learning and assess their financial and economic sustainability. The lessons learned will be shared via local, national and international networks.

The project also incorporates a specific component aimed at business planning for the SDTBR. This component is key to assuring there is a clear strategy to sustain the post-project governance and financing of the SDTBR. In accordance with the concept of a biosphere reserve, the planning will take into consideration the financial needs of the SDTBR and consider a series of different funding sources, including national commitments and other secured financial contributions. These could be donor contributions, income generation or effective partnerships. In particular, the project will support the establishment or reinforcement of public-private partnerships that support the objectives of the SDTBR.

1.1.2 Institutional sustainability

The sustainability of the project has been taken into consideration since the inception of the project concept, and stakeholders at multiple levels have been involved in the project design process. The project builds on the commitments by the governments of Mauritania and Senegal to establish a biosphere reserve in the Senegal River Delta. This high level political support and the will of participating ministries to make the SDTBR more functional through the creation of participatory governance and management

systems will be important factors in sustaining the longevity of the project's outputs. The project is also fully aligned with the national priorities of the two states, and fully integrated within the transboundary framework already established to manage water resources across the Senegal River Basin. The project interventions are designed to strengthen the framework for dialogue and coordination at the Delta level and directly support the priority actions identified by the OMVS to address PEP in the Delta. The project will also contribute to increased understanding of PEP at the level of the Delta, and support the development, implementation and assessment of potential transboundary solutions.

Project interventions to advance the objectives of the SDTBR at the local level will employ a community-driven, participatory approach. This approach is fully aligned with Mauritania and Senegal's national priorities and will be implemented within the countries' frameworks for decentralization and other relevant national policies and regulations. The project will invest heavily in building awareness on the SDTBR and issues related to ecosystem management. It will also build the capacity of local stakeholders to engage in advancing the objectives of the SDTBR, through the implementation of activities to restore or protect critical ecosystems, improve the sustainability of natural resource use, and strengthen community resilience through sustainable income-generation. The project will provide local stakeholders a framework to develop simple action plans, apply new practices, work in cooperatives, and monitor and manage small projects and funds. It will also provide local stakeholders in both countries opportunities to gain and share knowledge, by promoting exchanges and linking interventions to the SDTBR's applied research network. These interventions are intended to deliver results, while being owned and sustained by local stakeholders. Future evaluations will be required to ascertain whether these interventions continue to deliver impacts over the long-term.

The SDTBR is part of the World Network of Biosphere Reserves. This project will build the capacity of the SDTBR to fulfill its role in this network and establish itself as a model for sustainable development, while increasing its capacity to explore, establish and demonstrate innovative approaches for the conservation for biodiversity and its sustainable use. This will improve the SDTBR's ability to contribute to the vision and mission of the MAB Programme, as defined for 2015 to 2025. As part of its efforts to strengthen the SDTBR, the project will also support the establishment of effective partnerships among a wide range of internal and external stakeholders. These efforts will lay the foundation for long-term coordination and cooperation. Finally, the project will also help to build sustainability by encouraging transboundary dialogue at multiple scales dialogue.

1.2 Replication

A top objective of a biosphere reserve is to serve as a model for sustainable development. The environmental and social issues this project will address are not unique to the Senegal River Delta and the project has great potential to serve as a model for replication in other parts of Mauritania and Senegal, as well as many other countries where valuable terrestrial or coastal ecosystems face the same types of PEP and/or warrant transboundary management with the same type of shared governance systems.

An effectively functioning SDTBR will promote science, education and capacity building and offers an important learning opportunity for different groups of stakeholders at multiple levels (i.e., local, national, regional and global). This project will enable the establishment of the SDTBR's research program, based on the principles of sustainability science, which promotes problem-driven, cross-disciplinary approaches that advance understanding of human-environment interactions and systems, and of how those interactions affect the challenge of sustainability. The research program supported through the project will not only inform participatory decision-making and the management of the SDTBR, it will also provide a framework for practitioners, researchers and other stakeholders from Mauritania and Senegal to pool their knowledge and collectively examine issues of IWRM, biodiversity management and sustainable development. The project will provide a unique means to pilot innovative transboundary actions to address the PEP of the Delta. These actions will be closely monitored and adapted as necessary, providing an important opportunity to develop effective and replicable means to mitigate numerous types of environmental change, including climate change.

- **International Waters Learning Exchange and Resource Network (IW-LEARN):** A GEF network established to strengthen transboundary water management by collecting and sharing best practices, lessons learned and innovative solutions to common problems.
- **World Network of Biosphere Reserves:** The MAB Programme is committed to communicating the experiences and lessons learned from biosphere reserves and facilitate the global diffusion and application of these models.
- **SenegalWet, Initiative:** A platform for partnerships between national and sub-regional institutional actors, conservation NGOs, organizations for conservation and the wise use of wetland ecosystems in the coastal zone of the Senegal River Basin from Mauritania to the Republic of Guinea. This regional network endorsed by the Ramsar Convention on Wetlands provides a platform for collaboration between a wide range of stakeholders and provides support for the improved implementation of the Ramsar Convention's objectives and its Strategic Plan 2016-2024.
- **Regional Marine and Coastal Conservation Programme for West Africa (*Partenariat Régional pour la Conservation des Zones Côtières et Marines d'Afrique de l'Ouest* - PRCM):** A platform that brings together actors and programs working on West African coastal issues from seven countries.

- **Great Green Wall for the Sahara and Sahel Initiative:** An initiative that brings together numerous African countries and partners to restore degraded landscapes.

1) The global environmental problems, root causes and barriers identified at PIF stage were confirmed during site visits and consultations at local and national level during the PPG stage. These sections have been further detailed in sections 3.2 and 3.3 of the Project Document.

2) The baseline scenario remains consistent with the description in the PIF. Additional details on the baseline scenario and projects can be found in sections 3.5 and 4.7 of the Project Document.

3) The proposed alternative scenario and GEF focal area strategies remain the same as those proposed at the PIF stage. Apart from some minor re-wording, the components also have not changed since the PIF stage. Expected outcomes and outputs have been refined within each component. The changes introduced reflect the additional information gathered through stakeholder consultations and site visits during the PPG stage. In particular, stakeholders were consulted on the on-the-ground strategies and activities proposed under Output 2.1.2, 2.2.1 and 2.2.2. These consultations resulted in the identification of a preliminary set of strategies and activities; however, additional discussions with stakeholders and targeted assessments to systematically evaluate the potential impacts of said strategies is required (and has been integrated into the program design) to identify the definitive strategies and investment activities that will be implemented. This approach was agreed to by stakeholders at the final technical workshop to review the project design. Please refer to sections 4.1, 4.2 and 4.3 of the Project Document for further details.

4) The incremental reasoning remains globally consistent with the one proposed in the PIF, having been refined based on additional information from the baseline and co-financing projects. See Section 4.7 of the Project Document.

5) The global environmental benefits of the project have been refined based on additional information gathered during the PPG stage. See Section 4.1 of the Project Document.

6) See sections 4.8 and 4.9 of the Project Document.

A.2. Child Project?

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

A.3. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

During project design, efforts were made to meet with stakeholders to gather information, discuss the project concept and risks, and debate strategies for intervention. These consultations helped to improve understanding on the status of Senegal Delta Transboundary Biosphere Reserve (SDTBR) governance and management; ecosystems within the SDTBR and the priority environmental problems facing these ecosystems; current production systems; and the level of engagement of local, national and regional stakeholders. Particular attention was made to identify and gather information on vulnerable groups, including through consultations when feasible. These consultations figured directly in the design of the project, which will support measures to restore ecosystems, promote sustainable use of resources and establish income-generating activities that align with SDTBR conservation and development objectives.

During project design, consultations were held with in both Mauritania and Senegal (Table 30). These consultations included meetings with the government ministries responsible for the management of protected areas that form the core of the SDTBR and other stakeholders at the national and regional levels, as well as discussions with local stakeholders at a series of sites within the SDTBR. The objective of stakeholder consultations and site visits was to improve understanding of numerous aspects of the

SDTBR site, including: the status of the governance and management systems; the values of natural ecosystems and priority environmental problems; characteristics of the current production systems; the identification of vulnerable groups that would potentially be impacted by the project; and the level of engagement of key stakeholders in the SDTBR process. During consultations, stakeholders were invited to share their thoughts on the environmental and social issues they face and discuss key barriers to tackling these issues through the SDTBR. The PPG consultants also made efforts to discuss the project concept and risks with relevant groups, and explained the project's strategies for intervention. The information collected during stakeholder consultations was used to refine the project's stakeholder analysis and informed the design of the project's intervention strategy, logframe and activities.

The resulting logframe and proposed activities were further shared and discussed with partners during a transnational level workshop in Saint Louis in December 2018. Recognizing that not all stakeholders were able to be consulted, the process of stakeholder consultation and engagement should be continued from the onset of project implementation.

Overview of stakeholder consultations

Geographic location	Locality	Number of people consulted	Number of women consulted (%)	Stakeholder group
SDTBR	Nouakchott, Mauritania	1	0 (0)	Ministry of the Environment and Sustainable Development (DAPL)
Senegal River Delta	Nouakchott, Mauritania	2	0 (0)	Academic institution (UNA)
Diawling National Park	Keur Macene, Mauritania	1	0 (0)	State government (Hakem)
Diawling National Park	Ziré Taghridient, Mauritania	18	0 (0)	Local communities and producer groups (fisherman)
Diawling National Park	Sbeikha, Mauritania	40	40 (100)	Local communities and producer groups (farmers, artisans)
Saint Louis region	Saint Louis, Senegal	3	0 (0)	State government (Governor)
Djoudj National Park	"Le Njagabaar" tourist camp, Senegal	11	1 (9)	Local communities and producer groups (community-based tourism, farmers, pastoralists), Protected area administrators
Ndiael Special Wildlife Reserve & Gandon Community Nature Reserve	Ross-Béthio tourist camp, Senegal	6	2 (33)	Local communities and producer groups (community-based tourism, farmers, pastoralists), Protected area administrators
Senegal Basin	Diama, Senegal	1	0 (0)	OMVS (SOGED)
Saint Louis urban center	Saint Louis, Senegal	5	1 (0)	Urban centers and administrations (Saint Louis)
Senegal River Delta	Saint Louis, Senegal	1	0 (0)	Academic institution (University of Gaston Berger)
Senegal River Delta	Saint Louis, Senegal	3	1 (33)	Private sector (tourism)
Gueumbeul Special Wildlife Reserve & Langue de Barbarie National Park	Ndiébène Gandiol tourist camp, Senegal	11	5 (45)	Local communities and producer groups (community-based tourism, farmers, pastoralists), Protected area administrators

Senegal River Delta	Dakar, Senegal	2	2 (0)	OMVS (DEED)
SDTBR	Dakar, Senegal	2	1 (50)	Ministry of the Environment and Sustainable Development (DEEC)
Senegal River Delta	Dakar, Senegal	1	0 (0)	Ministry of the Environment and Sustainable Development (<i>Typha</i> project)
SDTBR	Dakar, Senegal	2	1 (50)	Ministry of the Environment and Sustainable Development (DPN & CT)
Ndiael Special Wildlife Reserve	Dakar, Senegal	1	0 (0)	Donor (AfDB)
Senegal River Delta	Dakar, Senegal	2	1 (50)	Donor (WB)

Stakeholder engagement and participation during project implementation

An overview of key stakeholders and stakeholder groups and their means of engagement in the project are presented below (Table 31). A more detailed analysis of stakeholders is included in Appendix 3.

Overview of project stakeholders and their engagement in the project

Stakeholder	Engagement in project	Engagement means	Responsible party
<ul style="list-style-type: none"> State government and decentralized authorities of Senegal and Mauritania 	<ul style="list-style-type: none"> National stakeholders Recognize official transboundary mandate of SDTBR Coordination of transnational and national activities 	<ul style="list-style-type: none"> Will figure in governance structures established for the SDTBR Participate in national or transboundary meetings Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> Transboundary Management Unit (TMU) and Steering Committee (SC) MEDD (facilitation)
Ministries of the Environment and Sustainable Development (MEDD-MR, MEDD-SN)	<ul style="list-style-type: none"> National stakeholders Lead institutional and executing partners, as such several directions of MEDD-MR and MEDD-SN will be involved at various levels of project management, and lead outreach with other ministerial departments, public institutions, academic or research institutions, NGOs, etc. Will partner with the project on implementation of activities and actively collaborate on monitoring and research, including data collection, management and analysis. Important role in replication and institutional sustainability In Mauritania, the DAPL and DPN will provide technical direction and be actively involved in project planning and implementation. The DREDD is also anticipated to be an active stakeholder in advancing the objectives of this project. Finally, the GEF Operational Focal Point within the MEDD-MR will support project implementation. In Senegal, the DPN will be the lead executing partner for the project and provide technical direction. DPN staff outposted in the protected areas forming the core areas of the SDTBR, the PNOD and the PNLB, will be engaged in project implementation (see below). DEFCCS and the DAMCP will also be closely associated to the planning and implementation of project activities given 	<ul style="list-style-type: none"> Will figure in governance and/or management structures established for the SDTBR Participate in national or transboundary meetings Will lead process to make official SDTBR framework Participate in SDTBR governance and management meetings, workshops, etc. Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> TMU and SC

Stakeholder	Engagement in project	Engagement means	Responsible party
	<p>their respective mandates for the management of some key areas of the SDTBR, with specific responsibilities as regards: participating in consultations and negotiations with stakeholder groups; the development of local ecosystem restoration plans; and monitoring the environmental impacts of the project on the environment as well as its contributions to improving the resilience and adaptive capacity of communities. DEEC will be engaged to provide support as regards to climate change. GEF Operational Focal Point in the DEEC will facilitate project implementation. The BIPRAMP provides an opportunity to host communication activities supporting the SDTBR.</p>		
<p>Other ministerial departments and other public institutions</p>	<ul style="list-style-type: none"> • National stakeholders • Define agenda for and represent different sectors 	<ul style="list-style-type: none"> • May figure in governance and/or management structures established for the SDTBR (depending on mandate and influence) • May participate in SDTBR meetings, workshops, etc. 	<ul style="list-style-type: none"> • TMU and SC • MEDD (facilitation)
<p>Regional delegations, including DREDD</p>	<ul style="list-style-type: none"> • National stakeholders • Work with authorities to establish NRM • Work in collaboration with stakeholders to develop and implement resource regulations • Provide technical assistance in multiple fields of NRM 	<ul style="list-style-type: none"> • Will figure in governance and/or management structures established for the SDTBR • Participate in SDTBR governance and management meetings, workshops, etc. • Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC
<p>OMVS (Senegal River Basin Development Authority / <i>Organisation pour la Mise en Valeur du fleuve Sénégal</i>)</p>	<ul style="list-style-type: none"> • Regional stakeholder • The OMVS HC will be represented in the relevant SDTBR governance body (i.e., the CTO) and will be closely involved in project coordination, planning and implementation. • The Direction of Environment and Sustainable Development (<i>Direction de l'Environnement et du Développement Durable</i>) of the OMVS HC will be the main interlocutor with the project management team for day-to-day coordination. The project will collaborate with initiatives by the OMVS to gather and manage data in order to foster monitoring, learning and inform decision-making, including within the frame of the management SDTBR. • The on-going close exchanges and collaboration existing between the administration of the PND and the SOGED, which aim to manage in a concerted fashion the hydraulic infrastructure regulating the seasonal flooding of the protected area's wetlands, will be pursued, strengthened and scaled-up within the frame of the project. 	<ul style="list-style-type: none"> • Will figure in governance and/or management structures established for the SDTBR • Participate in SDTBR governance and management meetings, workshops, etc. • Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC • MEDD (facilitation)
<p>UNESCO National Committees in Senegal and Mauritania</p>	<ul style="list-style-type: none"> • National stakeholders • Agency of consultation for information, guidance and support on advancement of SDTBR objectives and the Man and the Biosphere (MAB) Programme • Promotion of partnerships, at regional, national and local levels 	<ul style="list-style-type: none"> • Will figure in governance and/or management structures established for the SDTBR • Participate in SDTBR governance and management meetings, workshops, etc. • Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC

Stakeholder	Engagement in project	Engagement means	Responsible party
Non-governmental organizations, including IUCN Members and commissions	<ul style="list-style-type: none"> • Stakeholders (various levels) • Sources of knowledge • Partners for implementation of certain activities • Provision technical support • Potential beneficiaries of capacity building activities (local) • Represent interests of members 	<ul style="list-style-type: none"> • May figure in governance and/or management structures established for the SDTBR (depending on agenda and influence) • Engaged through communication materials, written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC
Urban centers and administrations (i.e., Saint Louis, N'Diogo)	<ul style="list-style-type: none"> • Local stakeholders • Local administrations represent interests and concerns of constituents in SDTBR decision-making 	<ul style="list-style-type: none"> • Will figure in governance and/or management structures established for the SDTBR • Participate in SDTBR governance and management meetings, workshops, etc. • Engaged through communication materials, written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC • MEDD (facilitation)
Local governance bodies	<ul style="list-style-type: none"> • Local stakeholders • Represent interests and concerns of communities in SDTBR decision-making • Promote sustainable natural resource management strategies 	<ul style="list-style-type: none"> • Will figure in governance and/or management structures established for the SDTBR • Participate in SDTBR governance and management meetings, monitoring and research network, workshops, etc. • Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC •
Management bodies of protected areas within the SDTBR	<ul style="list-style-type: none"> • National stakeholders • Participate in SDTBR governance bodies • Partners on implementation of certain activities • Collaborators on research, data collection and analysis 	<ul style="list-style-type: none"> • Will figure in governance and/or management structures established for the SDTBR • Participate in SDTBR governance and management meetings, monitoring and research network, workshops, etc. • Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> • TMU and SC •
Community-based organizations/Civil society organizations	<ul style="list-style-type: none"> • Local stakeholders • Sources of knowledge • Partners for implementation of certain activities • Mobilize local community members • Provision technical support • Potential beneficiaries of capacity building activities (i.e., trainings, equipment, small grants) • Represent interests of members 	<ul style="list-style-type: none"> • May figure in governance and/or management structures established for the SDTBR (depending on area of production, interest, influence) • Engaged in process to elaborate management objectives and strategies, partners on implementation, targets for capacity building, etc. • Engaged through communication materials, written communications, emails, face-to-face meetings, workshops, trainings, etc. 	<ul style="list-style-type: none"> • TMU and SC

Stakeholder	Engagement in project	Engagement means	Responsible party
Local communities and producer groups	<ul style="list-style-type: none"> Local stakeholders Sources of knowledge Partners on implementation of local activities Participants in discussions to determine NRM strategies Responsible for adhering to natural resource regulations and implementation of production "best practices" Beneficiaries of capacity building activities (i.e., trainings, equipment, small grants) 	<ul style="list-style-type: none"> May figure in governance and/or management structures established for the SDTBR (depending on area of production, interest, influence) Engaged in process to elaborate management objectives and strategies, partners on implementation, targets for capacity building, etc. Engaged through communication materials, written communications, emails, face-to-face meetings, workshops, trainings, etc. 	<ul style="list-style-type: none"> TMU and SC
Training centers (e.g., CIFA, ISRA, CFPRB, ISET, ENVFA)	<ul style="list-style-type: none"> Regional stakeholders Participate in development and implementation of capacity building activities 	<ul style="list-style-type: none"> Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> TMU and SC
Academic institutions (i.e., UNA, UGB)	<ul style="list-style-type: none"> National stakeholders Participate in the development and execution of the SDTBR's scientific and technical program Support monitoring of SDTBR Opportunities for capacity building 	<ul style="list-style-type: none"> Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> TMU and SC
Ecological Monitoring Centre (CSE)	<ul style="list-style-type: none"> Regional stakeholder (located in Dakar) Collaborate on the SDTBR database Coordinate on establishment of the SDTBR's GIS and its monitoring and assessment system. 	<ul style="list-style-type: none"> May figure in governance and/or management structures established for the SDTBR (depending on interest and influence) Will figure in transboundary monitoring and research network Engaged through written communications, emails, face-to-face meetings 	<ul style="list-style-type: none"> TMU and SC MEDD (facilitation)
Private sector	<ul style="list-style-type: none"> Regional stakeholders The aim of any partnerships will be to leverage financial or other benefits for the SDTBR itself and/or the communities involved. Project will also explore the potential of private partners to participate in the establishment of participatory certification schemes, to develop joint activities in the framework of green business and corporate social responsibility (CSR); and the potential for more formal public-private partnerships that would contribute to the financial sustainability of the SDTBR. 	<ul style="list-style-type: none"> Project will hold a forum that brings together members of the private sector to discuss the objectives of the SDTBR and explore opportunities for collaboration and partnership. Engaged through private sector platform, communication materials, written communications, emails, face-to-face meetings. 	<ul style="list-style-type: none"> TMU and SC Administrations of urban centers, NC (facilitation)
Other projects	<ul style="list-style-type: none"> Regional, national and local stakeholders Providing important opportunities for collaboration and learning 	<ul style="list-style-type: none"> Engaged through written communications, emails, face-to-face meetings Recipients of communication materials 	<ul style="list-style-type: none"> TMU and SC

Documents

Title

Submitted

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.

Stakeholders consultations will be held as part of the project implementation. All components include workshops and capacity building, which will involve all stakeholders to be consulted as the project implementation is being rolled out. The objective of the project is to ensure that the Senegal Delta Biosphere reserve comes operational again and therefore, it is essential that all relevant stakeholders (civil society, private sector, local communities including vulnerable groups) are part of the implementation. The GCF project activities are all framed under the IUCN environmental and social management system and the framework related to this project.

To assure stakeholders remain engaged and participate in project implementation, numerous aspects of stakeholder involvement are integrated into the key components of the project design. These include: a participatory process to review, consolidate and endorse the vision of the SDTBR; making SDTBR governance and management bodies operational; participatory development of explicit SDTBR objectives and strategies on the management of ecosystems and natural resources; sustainable development and local livelihoods; and mitigation and adaptation to climate change; building understanding on the vision, mandate, objectives and strategies of SDTBR among key stakeholders and participants of the transboundary coordination platforms; developing and implementing a communication strategy and action plan to raise awareness on the SDTBR vision, objectives and management strategies among target audiences; developing and implementing a capacity building strategy and action plan to address the needs of SDTBR stakeholders (including transboundary exchange); the establishment of mechanisms for grievance mediation and conflict resolution linked with the implementation of the SDTBR management plan; a participatory process to identify and prioritize (based on established criteria) sites within the ecosystems of the SDTBR that require restoration or appropriate management to sustain or improve benefits; a participatory process to identify (based on established criteria) inclusive and sustainable income generating initiatives that contribute to the conservation and sustainable development objectives of local communities within the SDTBR; the elaboration of simple community action plans; supporting the participatory monitoring of progress and the impacts of project initiatives, and using results (lessons learned) to adapt strategies and assess their potential to be scaled up within the SDTBR; establishing and supporting a transboundary research network and supporting functional data

management; and promoting transboundary knowledge exchange and learning exchanges. In addition, given the overall importance of stakeholder engagement and the appropriation of the SDTBR by stakeholders, the PMU will include a staff member dedicated to coordinating the engagement of stakeholders throughout project implementation.

No indigenous groups will be affected by the project

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier;

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

Executor or co-executor;

Other (Please explain)

Several activities will have to be rolled out at the local level and local institutions, such as NGOs will be encourage to participate in the competitive hiring of the service providers that will be required in this project.

A.4. Gender Equality and Women's Empowerment

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

The project recognizes the importance of mainstreaming gender equality and women's empowerment in project design, implementation and monitoring. As part of the PPG design phase, an assessment of the legal framework regulating land tenure and access to natural resources and the rights of vulnerable groups, including women, in both Mauritania and Senegal was undertaken (See sections 3.1 and 3.4). This assessment found that the land and regulatory frameworks in Mauritania and Senegal do not differentiate users by gender or ethnic group; however, customary systems in which social differentiation plays a significant part in determining who controls land as well as the roles of various groups in production systems and in the sharing of benefits, remain prevalent. In these systems, gender can also play a role as regards representation in governance systems.

Documents

Title

Submitted

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

Yes

If yes, please upload document or equivalent here

Overall the project is designed to align with national priorities and policies in Mauritania and Senegal as regards gender equality and equity (Section 4.5) and is committed to helping build equitable and sustainable societies. Throughout the implementation of its three components, the project will progress this particular aim by: promoting and facilitating the participation of women and marginalized groups in decision-making processes, including as regards the governance and management of the SDTBR; ensuring that project strategies promote equitable access to and control of resources and benefits; assuring strategies take into consideration the gender division of labor; monitoring whether proposed interventions will limit the rights or access of women, youth and marginalized groups and developing appropriate mitigation measures; as feasible, capitalizing on opportunities to build on any existing equitable practices that promote the rights of women, youth and marginalized groups; assuring a gender balance in efforts to build capacity (e.g., trainings, grants); and assuring equitable benefit sharing with any income associated with project interventions.

In addition, the proposed strategies for ecosystem restoration, natural resource management and income generation take into consideration the findings of consultations with women and representatives of other vulnerable groups during the PPG phase, including the roles these groups play in different production systems as well as their priorities, needs and concerns. The project integrates opportunities and activities to benefit vulnerable groups, mitigate their risks and address their political and economic marginalization. Under Component 1, the project design encourages the establishment of governance and management bodies that are representative, and includes targets for their participation. Component 1 also includes numerous participatory processes to develop the management priorities and strategies for the SDTBR, as well as associated targeted social assessments and the establishment of a grievance mediation and conflict resolution. The Capacity Building Strategy and Action Plan will also consider the needs of different groups individually and include interventions designed to build the capacity of women and vulnerable groups.

Under Component 2, the project will support activities aimed at restoring ecosystems and putting in place natural resource management strategies that contribute to the conservation and development goals of the SDTBR. Targeted social assessments will be applied to ensure the process to develop strategies involving the use of natural resources has involved relevant user groups (including women and vulnerable groups). They will also assure that any strategies that involve restrictions of access or use rights are developed on a consensual basis and that the impacts of these strategies on all users, including women and vulnerable groups, have been evaluated. Under Component 2, the project will also support adapted, sustainable income-generating activities. The project will promote the inclusion of women and vulnerable groups in these activities and assure they benefit equitably from this aspect of the project.

Finally, under Component 3, the project will assure women have equal opportunities to benefit from project-supported learning and knowledge exchange activities.

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

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

Improving women's participation and decision making

Generating socio-economic benefits or services or women Yes

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

Yes

A.5. Risks

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.

A limited number of risks have been identified in the course of project design and stakeholder consultation (Table 22). They include political, organizational, operational (project management), technical, financial, human capital, reputational, external and environmental risks. The probability and potential impact of each risk has been assessed; the described risk levels represent the residual risks having taken into consideration the planned mitigation measures that have been integrated into the project design. The Project Manager will monitor the risks and report to the GEF on their status and any planned management responses as part of annual PIR.

Project risks and mitigation measures

Risk description	Risk category	Probability	Impact	Mitigation measures
Complexity of proposed governance and management model and transboundary nature of the project	Political / Organizational	Medium	High	The project proposes to build on model which has been agreed upon by stakeholders (A.1.3). The mandate of each governance and management body will be reviewed and endorsed A.1.1) to ensure it meets current needs.
Securing key partnerships or	Operational	Medium	Medium / High	Among the key roles of the project SC and PMU is to coordinate and

government endorsement delays project execution				communicate regularly with partners, including the government (A.1.3). The IUCN will also work to keep stakeholders engaged in the project. Partners and the government will be represented in the governance and management bodies of the SDTBR (A.1.3). To facilitate coordination and assure a common and solid foundation for the project, the vision, mandate and legal framework for the SDTBR will be reviewed and endorsed at the start of the project (A.1.1 & A.1.2).
Limited capacity, willingness or commitment among institutional stakeholders	Technical / Operational	Low	High	During the PPG phase, institutional stakeholders expressed their strong commitment to establishing a functional SDTBR and the objectives of this project. To assure they remain engaged, they will be represented in the governance and management bodies of the SDTBR (A.1.3), and thus be integral to developing and advancing its objectives. To keep all stakeholders informed, a SDTBR Communication Strategy and Action Plan will be developed and implemented (A.16 & A.17). As part of the process to develop the SDTBR Capacity Building Strategy and Action Plan (A.19 & A.20), the capacity needs of different stakeholder groups will also be assessed and actions will be developed to address any gaps that are critical to advancing the objectives of the SDTBR.
Limited capacity of local or technical institutions to support communities in implementing ecosystem restoration, adaptation and natural resource management activities	Technical / Organizational	Low	Low	Given the importance of the resources of the Senegal River Basin, the environmental and social challenges that have existed in the Senegal Delta for a considerable period of time, and the large number of past and on-going initiatives that have worked to build capacity and progress IWRM, ecosystem restoration, adaptation and natural resource management (Section 3.5), there is considerable existing capacity for working on these issues. As part of the SDTBR Capacity Building Strategy and Action Plan (A.19 & A.20) any additional gaps will be addressed. Also, the project will work to further build capacity by supporting the establishment of a transboundary research network (A.3.1) and the advancement of applied research in the field of sustainability science (A.3.3). Finally, the project will support transboundary knowledge exchange (A.3.5) and promote learning exchange (A.3.6). These efforts will be applied to collectively address any capacity gaps.

<p>Limited capacity, willingness or commitment among communities targeted for ecosystem restoration or sustainable use of natural resources</p>	<p>Technical / Operational</p>	<p>Low</p>	<p>Medium</p>	<p>The project will implement a participatory approach to the development of the SDTBR management objectives and strategies (A.1.4, A.2.3, A.2.5 & A.2.9). Consultations through the framework for transboundary coordination (Output 1.1.3) and transboundary workshops will also be important instruments used to animate a participatory approach and engage with local communities during the process to elaborate the SDTBR Management Plan (A.1.6). The plan will take into consideration both the environmental problems facing communities as well as their socio-economic development aspirations. This approach should establish willingness and commitment to the project. Within the framework of the SDTBR Capacity Building Strategy and Action Plan (A.19 & A.20), and in direct relationship to the participatorily elaborated and agreed upon restoration (A.2.6), sustainable use and management (A.2.10) and income-generating (A.2.15) pilot projects, the skills needed to implement these projects will be assessed and capacity gaps (technical, equipment, financial) will be addressed.</p>
<p>Low uptake of methods, techniques and tools for the management of natural resources</p>	<p>Technical / Operational</p>	<p>Low</p>	<p>Medium</p>	<p>The strategies that will be supported by the project will respond to recognized PEP, which are impacting the resource base upon which stakeholders depend (A.1.4). They will be designed to achieve a common vision for the SDTBR (A.1.1), and a participatory approach will be employed to develop SDTBR management objectives and management strategies (A.1.4, A.2.3, A.2.5 & A.2.9) and select sites. Targeted assessments of potential social impacts from the SDTBR management strategies will also be carried out to ensure the process to develop the strategies has involved relevant user groups and assure appropriate mitigation measures (A.1.5). These activities will build ownership of the process. In addition, the project will work with local stakeholders to monitor the impacts of project interventions at the site level (A.2.8, A.2.12 & A.2.17) and adapt them as appropriate. Finally, the SDTBR Communication Strategy and Action Plan (A.16 & A.17) will be used to further encourage uptake.</p>
<p>Management of water flows (by OMVS) and their seasonality are not compatible with needs and objectives of the SDTBR</p>	<p>Organizational</p>	<p>Medium</p>	<p>Medium</p>	<p>The management of water flows is a key issue in the SDTBR. It is at the root of many of the changes that have occurred to natural ecosystems. At the same time, a strong framework for managing water flows has been established (Section 3.5). In addition, through previous and ongoing</p>

				<p>projects, a strong working relationship has been established between key stakeholders in the SDTBR (e.g., management of protected areas in the context of ecosystem restoration and artificial flooding). The OMVS recognizes the environmental problems and associated social issues facing the Delta; they also recognize the importance of the SDTBR in mitigating some of these issues (Section 4.5). As such, they are engaged in the project. They will be formally involved through the governance and management bodies of the SDTBR (A.1.3). This will provide the best opportunity to collectively design management approaches that recognize the different needs as regards water resources and the management priorities for water flows.</p>
Planned interventions are not effective due to rapid and sustained degradation of ecosystems	Technical / Operational	Low	Medium	<p>The project will invest in participatory planning and prioritization to assure the objectives and strategies of the SDTBR are relevant to addressing the degradation of ecosystems (Output 1.1.2). By rendering the SDTBR functional, the project will establish a framework for transboundary dialogue. Transboundary dialogue and applied research and monitoring (A.3.3 & A.3.4) will facilitate the development of solutions to address issues of ecosystem degradation. Finally, critical ecosystems will be targeted for restoration through Output 2.1.2.</p>
Adaptation measures are insufficient to address climate variability or strong climate variability during project lifetime negate positive effects of project interventions	Environmental	Medium	Medium	<p>Climate change and variability are recognized as serious environmental problems in the Delta, as are expected to continue to impact the area. As part of the process to elaborate the SDTBR Management Plan (A.1.4) vulnerability and climate scenario planning exercises will be used to assure management strategies are strategic and well-adapted to changing conditions. Efforts to restore ecosystems (A.2.7), implement adapted sustainable use and management strategies (A.2.11) and increase income generation (A.2.16) will also help to build the resilience of local ecosystems and communities.</p>
Financial sustainability of the SDTBR cannot be secured	Financial	Medium	High	<p>The project recognizes that steady funding is critical to the sustainability of the SDTBR and the results of this project. As such, Output 1.1.5 is dedicated to building the financial sustainability of the SDTBR. A business plan (A.1.13) will be elaborated. In addition, efforts will be made to strengthen national financial contributions (A.1.14) and strengthen financial contributions through income generation and effective partnerships, including donors and the private sector (A.1.15).</p>
Non alignment between Mauritania & Senegal on project governance	Organizational	Medium	High	<p>The success of the project will depend in large part on the ability of Mauritania and Senegal to be in alignment as regards project governance and implementation. Outcome 1.1 is dedicated to assuring the establishment of functional governance and management structures. The project will also support regular coordination for the implementation of the SDTBR Management Plan (A.1.8).</p>
SDTBR management is not well coordinated by stakeholders	Operational	Medium	High	<p>Under Component 1, the project will work to establish functional management bodies and their coordination (Activity 1.8). Efforts will also</p>

				be made to assure transboundary coordination between local (Output 1.1.3) and the project will use a participatory approach to develop SDTBR management objectives and strategies (A.1.4, A.2.3, A.2.5 & A.2.9). Finally, transboundary dialogue and applied research and monitoring (A.3.3 & A.3.4) will be used to track progress and make adjustments as necessary.
Government processes delay project	Operational	Medium	High	The project recognizes the importance of assuring formal recognition of the SDTBR governance and management frameworks to enable project success (A.1.2). This process will need to build on the commitments made by the governments of Mauritania and Senegal. Additional support will be dedicated to developing and implementing a SDTBR Communication Strategy and Action Plan to support the project goal (Output 1.1.6).
Executing agencies corruption/fraud	Financial	Medium	Medium	The executing agencies will be supported by IUCN to ensure implementation of administrative and financial matters in accordance with the rules and procedures of IUCN and the GEF.
Lack of resources	Human Capital	Low	Low	Significant capacity exists in Mauritania and Senegal on water and natural resource management issues concerning the Senegal River Basin. In conjunction with numerous partners that have been identified, the project will also support building additional capacity, notably through Outcome 1.2 and Component 3.
Failure to deliver on time/ budget	Operational	Low	Low	The executing agencies will be supported by IUCN to ensure implementation of administrative and financial matters in accordance with the rules and procedures of IUCN and the GEF. Transboundary dialogue and applied research and monitoring (A.3.3 & A.3.4) will also be used to track progress and make adjustments as necessary.
Private sector engagement	Reputational	Low	Low	Under Output 1.1.4, the project will evaluate the potential of partnerships with private sector actors. This process will build on previous discussions and be developed to align with the objectives of the SDTBR. When required more detailed screening will be performed.
Political situation	External	Low	High	While a deterioration of the political situation has the potential to have a high impact, the risk is considered to be low given the current level of stability. This project will aim to support further transboundary collaboration within the project area.
Micro credit failure	Financial	Low	Medium	Under A.2.16, the project will support the establishment of a small grants mechanism. Significant experience exists within Mauritania and Senegal as regards such processes and lessons learned from these experiences will be applied in the context of this project.
Sanitary situation linked to the COVID 19 Pandemic	Operational	Medium	Medium	The project will ensure that all staff and communities are protected according to national rules and recommendations. In addition, the project team will make sure to anticipate as much as possible the consequences linked to the operations of the project due to the effects of the pandemic and the restrictions this may imply. Specific monitoring of the situation

				linked to the evolution of the pandemic will be done and reviewed by the partner agency during yearly supervision missions and reviews in order to ensure appropriate measures are taken and applied to mitigate effects on the project advancement and ensuring security of staff and communities involved.
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A.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.

The proposed institutional set-up to implement the project activities is described in the following sub-sections.

National and local decision making and planning

The execution of the project will be under the joint-responsibility of the Direction des Parcs Nationaux (DPN) within the Ministère de l'Environnement et du Développement Durable (MEDD) in Sénégal and the Diawling National Park (PND) within the Ministère de l'Environnement et du Développement Durable (MEDD) in Mauritanie. These two national government entities will oversee the Project Management Unit (PMU) of the project, as part of their role in the project steering committee..

The Steering Committee (SC): The SDTBR Comité Transnational d'Orientation (CTO) will serve as the SC in an advisory role for the implementation of the project. The final list of CTO members will be completed based on the outcomes of the review under Activity 1.1, during year one of the project. A temporary set-up will be designed during the project inception phase, but no later than three months after project kick off. Chaired by the Wali of Trarza Willaya and the Governor of Saint-Louis Region, proposed SC members would include representatives of the relevant MEDD-MR and MEDD-SN directorates, local authorities, OMVS, partners in the project area (e.g., protected area managers), NGOs and scientific and technical institutions, private sector and the co-financiers (i.e., MAVA Foundation). IUCN will participate, as an observer. The SC will meet annually to review past progress in project execution, and to review and approve annual work plans and budgets. Key members will meet as needed for activity-specific guidance and will:

Align the project with other regional and national initiatives;

- Oversee project progress and take timely actions to resolve implementation constraints;
- Receive and review annual substantive and financial reports on project activities;
- Review and approve annual work plans; and
- Ensure monitoring and evaluation of project activities.

During the inception phase, the Steering Committee will designate the representatives of the two countries in charge of the recruitment of the Project Management Unit team with the assistance of IUCN. When the PMU team will be recruited, the SC will establish the PMU on the site agreed by the two countries and give him the mandate to act on and behalf the two countries, under the supervision of the SC.

Implementing Agency: IUCN is the implementing agency for the project. IUCN will provide oversight to the two executing agencies of this project, the DPN and DAPL, including the PMU, to ensure execution of administrative and financial matters and will assist in key technical and scientific issues, always as part of its oversight function role. Its role will also be to consolidate results through the annual Project Implementation Report (PIR), and potentially support the two Governments in securing national financial resources to complement project activities. Wherever possible, the project will take advantage of the opportunities for synergy and complementarities with other projects or other GEF Agencies. Opportunities will be explored during project implementation to secure partnerships for follow up investments for on-the-ground activities.

The Implementing Agency will be the primary entity responsible to:

- Supervise project implementation;
- Monitor and evaluate project performance, and prepare implementation review;
- Provide technical backstopping to executing agencies at national and regional levels; and
- Ensure quality control of the project workplans, budget and reports.

Project coordination and management

The project coordination and management will comprise national implementing and executing agencies as well as local partners.

The Project Management Unit (PMU) will be established with the help of the Implementation Agency (IUCN) under the joint auspices of the two executing agencies (DPN for Senegal and PND for Mauritania) and will provide a management structure for the development and implementation of the project, in accordance with the rules and procedures of GEF/IUCN and consistent with directions provided by the Steering Committee. The PMU will be hosted by the country agreed by the two Ministries (MEDD-MR and MEDD-SN) and will be based either in the PND Headquarters or the DPN office in Saint Louis. The final location of the PMU will be the subject of a decision of the SC prior to project kick off.

It will consist of 2 permanent staff:

- A Transboundary Project Coordinator jointly hired and appointed by the MEDD-MR and MEDD-SN, with an expertise in natural resource management and the environment;

- A Project Administrative and Finance Officer;

The PMU will include two part-time (30%) National Deputy-Coordinators. These positions will be appointed by the MEDD-MR and MEDD-SN from among their staff. They will closely assist the Transboundary Project Coordinator in project planning and implementation. They will be responsible for coordinating national components of project planning and implementation with the MEDD-MR and MEDD-SN. They will also be responsible for the overall oversight of the implementation of activities in their respective countries. This function complements on a day to day basis the one carried out by the National Committees.

The PMU will be supported by the following technical experts.

- A Stakeholder Engagement Officer (Activity 1.4);

- A Wetland and Natural Resources officer (Activity 2.7);

- M&E and Knowledge Management officer (Activity 3.7); and

- Two Drivers (Activity 2.7 and Activity 2.11).

The PMU will be the primary responsible to:

- Ensure proper annual Planning, Monitoring & Evaluation, and communication of the project achievements;

- Ensure proper financial management and reporting of the project resources;

- Ensure fluid communication between the executing and implementing agencies;

- Ensure compliance with GEF and IUCN project management procedures and standards;

- Prepare bid documents;
- Procure any necessary equipment and supplies;
- Administer contracts;
- Consolidate reports;
- Provide reimbursements for expenses (e.g., daily allowance for participation to meetings, transport costs, etc.); and
- Other duties as defined.

Additional Information not well elaborated at PIF Stage:

A.7. Benefits

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

The project will establish functional governance and management of the SDTBR. The SDTBR project area is a multi-use system that is essential to the food security and livelihoods of the approximately 400,000 people who live within the reserve. The ecosystems of the SDTBR are also vital to a much larger number of people in Mauritania and Senegal who rely on the Senegal River Basin for water provisioning, food production, energy, transportation and many other services. Over numerous decades, the environmental and socio-economic conditions within the project area have been heavily impacted by human interventions and climate change and variability. Today, the SDTBR area is facing numerous environmental problems that affect socio-economic conditions. The changes that have happened and their negative environmental impacts have significantly affected production systems (e.g., fisheries, some forms of agriculture) and resulted in increased conflicts, including at the transboundary level, over natural resources.

Establishing effective transboundary governance and management of the SDTBR will provide an improved means for stakeholders to dialogue and develop solutions to priority environmental problems. The project will also build off traditional knowledge and scientific

evidence to develop climate-proof restoration, management and natural resource use strategies that are sustainable and can be adapted to respond to changing conditions. The application of these strategies will contribute to maintaining or improving the values and functions of the SDTBR's ecosystems, improving their resilience, their ability to supply critical services and their ability to support multiple production systems. In turn this will build the adaptive capacity and resilience of local communities and the broader stakeholder community in the face of growing anthropogenic pressures and climate variability.

In addition, the project will improve the capacity and resilience of local communities through the adaptation and diversification of income-generating activities. Without the intervention of this project, unsustainable practices and anthropogenic pressures will continue to negatively impact and degrade the area targeted by this project. These negative impacts will put at risk the ecological and livelihood systems upon which local communities directly depend and will increase the stressors confronting thousands of households across the region. These households will also have reduced flexibility to respond to the impacts of climate change.

A.8 Knowledge Management. Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

During the design of the project, contact was established with representatives of different stakeholder groups to compile information on their experiences. The lessons learned from these experiences, including in the context of the SDTBR and the transboundary management of natural resources have been reviewed and incorporated into the project design as applicable. Notably, the project design builds on the efforts of the OMVS and its partners to understand environmental problems in the Senegal River Delta and identify priority actions to address said problems across national borders. It also builds on the experiences of projects that successfully progressed ecosystem restoration and adapted and decentralized natural resource management in Mauritania and

Senegal. The strategies that will be implemented by the project, will integrate the knowledge of best practices for IWRM, ecosystem management and the sustainable adaptation of production practices attained through other partners and projects working in these thematic areas. The project will remain in contact with partners to assure a sharing of lessons learned and knowledge that could assist other initiatives working in these same areas.

The project integrates numerous outcomes and outputs that are designed to assure the project is well communicated, and that knowledge generated by the project is shared, openly accessible and applied to achieve project objectives and facilitate replication. Output 1.1.6 of the project focuses on the production and implementation of an SDTBR Communication Strategy and Action Plan. The strategy will target numerous stakeholders, including local communities and various levels of administration in Senegal and Mauritania and will be designed to support the successful realization of other project outcomes. It will apply a variety of means and tools to share information and communicate on issues pertaining to the SDTBR, including water management; sustainable use strategies; maintaining and restoring the natural values and functions of ecosystems; and mitigating the impacts of stressors, such as climate change. The strategy will also consider how to assure the impacts and the lessons learned from this project can be used to scale up and institutionalize successful measures and best practices developed during this project at the national, transboundary and international levels.

Component 3 of this project is aimed at scientific cooperation, knowledge acquisition and sharing, and ecosystem monitoring and evaluation. The project will support the establishment of a functional information management system at the level of the SDTBR/Delta. This open data sharing and management mechanism will be designed to provide timely and accurate information to stakeholders and decision-makers, promote collaboration, and assure its sustainability beyond the duration of the project. It will also be designed to complement and feed existing systems for information management at national levels and at the level of the Senegal River Basin, within the framework of the OMVS. Furthermore, a transboundary research network comprised of existing research bodies and academic institutions will be established and supported to undertake collaborative and applied research and monitoring in accordance with the SDTBR Research Plan. Numerous partners will be engaged to participate in this initiative (Section 4.3). Under Component 3, the project will also promote transboundary knowledge exchange to foster collaboration, eliminate knowledge gaps

and expediate the development of successful solutions for the effective management of the SDTBR. Learning exchange at the national, regional and international level will also be supported.

A.8. Knowledge Management □

Elaborate on the Knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user- friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

The project will establish functional governance and management of the SDTBR. The SDTBR project area is a multi-use system that is essential to the food security and livelihoods of the approximately 400,000 people who live within the reserve. The ecosystems of the SDTBR are also vital to a much larger number of people in Mauritania and Senegal who rely on the Senegal River Basin for water provisioning, food production, energy, transportation and many other services. Over numerous decades, the environmental and socio-economic conditions within the project area have been heavily impacted by human interventions and climate change and variability. Today, the SDTBR area is facing numerous environmental problems that affect socio-economic conditions. The changes that have happened and their negative environmental impacts have significantly affected production systems (e.g., fisheries, some forms of agriculture) and resulted in increased conflicts, including at the transboundary level, over natural resources.

Establishing effective transboundary governance and management of the SDTBR will provide an improved means for stakeholders to dialogue and develop solutions to priority environmental problems. The project will also build off traditional knowledge and scientific evidence to develop climate-proof restoration, management and natural resource use strategies that are sustainable and can be adapted to respond to changing conditions. The application of these strategies will contribute to maintaining or improving the values and functions of the SDTBR's ecosystems, improving their resilience, their ability to supply critical services and their ability to support multiple production systems. In turn this will build the adaptive capacity and resilience of local communities and the broader stakeholder community in the face of growing anthropogenic pressures and climate variability.

In addition, the project will improve the capacity and resilience of local communities through the adaptation and diversification of income-generating activities. Without the intervention of this project, unsustainable practices and anthropogenic pressures will continue to negatively impact and degrade the area targeted by this project. These negative impacts will put at risk the ecological and livelihood systems upon which local communities directly depend and will increase the stressors confronting thousands of households across the region. These households will also have reduced flexibility to respond to the impacts of climate change.

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During the design of the project, contact was established with representatives of different stakeholder groups to compile information on their experiences. The lessons learned from these experiences, including in the context of the SDTBR and the transboundary management of natural resources have been reviewed and incorporated into the project design as applicable. Notably, the project design builds on the efforts of the OMVS and its partners to understand environmental problems in the Senegal River Delta and identify priority actions to address said problems across national borders. It also builds on the experiences of projects that successfully progressed ecosystem restoration and adapted and decentralized natural resource management in Mauritania and Senegal. The strategies that will be implemented by the project, will integrate the knowledge of best practices for IWRM, ecosystem management and the sustainable adaptation of production practices attained through other partners and projects working in these thematic areas. The project will remain in contact with partners to assure a sharing of lessons learned and knowledge that could assist other initiatives working in these same areas.

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to share information and communicate on issues pertaining to the SDTBR, including water management; sustainable use strategies; maintaining and restoring the natural values and functions of ecosystems; and mitigating the impacts of stressors, such as climate change. The strategy will also consider how to assure the impacts and the lessons learned from this project can be used to scale up and institutionalize successful measures and best practices developed during this project at the national, transboundary and international levels.

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B. Description of the consistency of the project with: □

B.1. Consistency with National Priorities

Describe the consistency of the project with nation strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

The project is highly consistent with national priorities, plans, and policies (Table 23).

Alignment of the project with key national priorities, plans and policies

Area	Priorities	Project Consistency
Regional	IWRM, Senegal River Basin	The project falls within the established framework for the governance of water resources in the Senegal River Basin. This framework is well established through national and transboundary policies and institutions, including the OMVS and the 2002 Water Charter of the Senegal River Basin. In accordance with the Water Charter, this project builds on concepts of IWRM and promotes the conservation of ecosystems and the sustainable management of the basin. The project design integrates the findings of the OMVS TDA and falls within the LTEQOs of the Senegal Basin SAP. Specifically, the project directly responds to Measure 3 of LTEQO - 5: Support efforts for the sustainable management of the SDTBR. It will also contribute to many of the other priority measures identified in the 2017 SAP.
Mauritania	Water management	In addition to efforts being coordinated through the OMVS, the project takes into consideration and will support national policies on water management, including as presented in the Water Code of 2005. As appropriate, the project will work with the national and decentralized authorities responsible for different aspects of water management, including the DH, DA and the DHB.
Senegal	Water management	The project will take into consideration national policies on water management, including Senegal's Water Code of 1981. As appropriate, it will also work with the national and decentralized authorities responsible for different aspects of water management, including the DGPRE and the MHA-SN. More specifically, at the level of the project area, the project will engage with the OLAC and SOGED.
Mauritania	National Strategy for the for the Environment and Sustainable Development (SNEDD) and the National Action Plan for the Environment and Sustainable Development (PANEDD), 2017-2021	All the project's actions are in line with the SNEDD and the PANEDD. First, the project responds to the orientations supported within the frame of the first strategic axis of the SNEDD / PANEDD "integrated environmental governance adapted to the challenges" through the promotion of intersectoral coordination and partnerships, support to capacity building of stakeholders, and investments in scientific cooperation. The project will directly contribute to the second axis of the SNEDD / PANEDD "integrated and sustainable management of natural resources and terrestrial biodiversity" through a range of activities, including supporting local management of natural resources, rehabilitation of wetlands and high value ecological ecosystems, strengthening the resilience of vulnerable populations in the face of climate change, and supporting the effective management of protected areas. Finally, the project contributes to the "sustainable management of the marine and coastal environment" as outlined in the third axis.
Senegal	Emerging Senegal Plan (PSE) and its 2014-2018 Priority Action Plan (PAP)	The project is fully within the framework of the PSE. First, among the sectoral objectives associated within the PSE's second axis dedicated to "human capital, social protection and sustainable development", this project is relevant to the following: (i) improve the knowledge base of the environment and natural resources; (ii) intensify the fight against environmental and natural resource degradation in compliance with the relevant conventions; (iii) strengthen the institutional and technical capacities of stakeholders in the implementation of environmental and natural resource conservation actions; (iv) preserve biosphere reserves (parks, nature reserves), promote a green economy and attract funding for green jobs. The project is also built to respond to the promotion of gender equity and equality as developed in the second axis of the PSE. Second, the project will contribute to the sustainable management of fisheries resources and restoration of marine habitats through the development and implementation of management plans, the promotion of co-management, the continued efforts to conserve and protect spawning grounds (e.g., establishment of marine protected areas, restoration of mangrove ecosystems), and the operational objective of the fisheries and aquaculture component the PSE's first axis "structural transformation of the economy and growth". Finally, the project also contributes to the objectives dealing with land-use planning and local development component of the PSE's third axis "governance, institutions, peace and security", which aim to promote the viability of the territories and strengthen the capacities of local communities.
Mauritania	National Strategy and Action Plan for Biodiversity for 2011-2020 (SPANB)	Among the objectives that relate directly to the project are the following: protect species and their diversity; preserve ecosystems and their functioning; develop and sustain financial and human resources for biodiversity; reduce pressures on biodiversity; guarantee sustainable use of biological resources; assure coherence of policies; reinforce governance as regards biodiversity; and develop research, analysis, knowledge sharing and dissemination. The strategy also recognizes the importance of different stakeholders (i.e., State, communities, civil society, donors) playing their roles in a coordinated fashion.

Senegal	National Strategy and Action Plan for Biodiversity 2015-2020 (SPNAB)	The project responds to a large set of the ten specific objectives associated with the four strategic axes of the SPNAB. The project components 2 and 3 will contribute to the first axis by strengthening efforts to collect information on biodiversity, developing of research on biodiversity and the capitalization and dissemination knowledge on biodiversity. Components 1 and 2 will support the implementation of activities that will support the second axis through the strengthening of ecosystem resilience and improving the level of biodiversity conservation. Component 1 is in line with the specific objective of promoting good governance of biological diversity, as developed in the third axis. Finally, Component 2 will contribute to the enhancement of the value of goods and services provided by ecosystems and the promotion of sustainable production and consumption patterns as planned in the fourth axis.
Mauritania	National Strategy for the Conservation of Wetlands (SNCZH)	The project design will directly contribute to all of the strategic objectives of the SNCZH, specifically: (i) establishing good governance systems and legal framework for wetlands, (ii) preserving and restoring wetlands; (iii) regulating access to wetland resources; (iv) improving the management and development of watersheds; (v) developing sustainable cultivation and farming practices in wetlands; (vi) animating and implementing the wetland conservation strategy; (vii) strengthening institutional and human capacities; (viii) strengthening technical and scientific capacity; (ix) promoting sustainable techniques for the exploitation of natural resources (ix) developing income-generating activities compatible with the sustainable management of wetlands; and (x) establishing sustainable financing.
Senegal	Politique Nationale de Gestion des Zones Humides (PNGZH)	The project will contribute to the PNZH's aim to promote the conservation and rational use of wetlands, including specific considerations on biodiversity conservation, applying wetland resources to sustainably support development and establishing good governance of wetlands. The project will work with stakeholders to identify opportunities for complementarity between the project and the findings of the PNZH regional action plan for the Senegal River area.
Mauritania	Climate change and adaptation	Mauritania ratified the UNFCCC in 1994 and the Kyoto Protocol in 2005; the national framework for the country's politic on climate change and adaptation is articulated through the SNEDD and the PANEDD. The MEDD-MR serves as Mauritania's focal point for the UNFCCC and has coordinated the preparation of three NC submitted to the UNFCCC in 2002, 2008 and 2014. As detailed in the INDC published in the lead up to the 2015 United Nations Climate Change Conference, Mauritania's national agenda of ambitions for adaptation through 2030 include cross-sector initiatives to reduce the vulnerability of natural and socio-economic systems in the face of climate change. Among the initiatives for which the country is seeking support and which are directly relevant to this project are: the reinforcement of the resilience of vulnerable populations; the reinforcement of institutional and technical capacity of national and local structures in the areas of planning, finance and implementation of adaptation measures; the reinforcement of resilience of natural ecosystems in the face of the effects of climate change; and the rehabilitation and integrated and sustainable management of humid zones to combat the effects of climate change; the restoration of natural pastures; capacity building for the monitoring and management of the continental fisheries; and the implementation of desalination projects for coastal and other areas. The countries adaptation strategy has been developed in consideration of their participation in the UNFCCC, the United Nations Convention to Combat Desertification (UNCCD) and the CBD.
Senegal	Climate change and adaptation	Senegal ratified the UNFCCC and created the COMNACC in 1994. At the institutional level, the issue of climate change is managed the MEDD-SN. As such, the MEDD-SN manages the mechanisms responsible for monitoring and developing responses to trends in climate change and the state of the environment. The INDC conducted as part of the 2015 Paris Agreement demonstrates high vulnerability of Senegal with high risks in several key sectors of the national economy, in particular agriculture, which is mainly rainfed, water resources and coastal areas that are already fragile. This project will take into consideration climate change projections as well as national priorities as regards adaptation and climate change mitigation, and support these efforts by building the resilience of ecosystems and communities in the SDTBR.
Mauritania	Decentralization	The Government of Mauritania committed to a process of decentralization approximately 30 years ago, and has since established a system of decentralized administration with Wilayas, Moughatâas and Communes. Different levels of decentralized administration have been considered during the stakeholder analysis and will be engaged in the project. The commitment to decentralization is also reflected in the legal framework governing rights and conditions for access to resources, including the Water Code, the Forest Code and the Pastoral Code. The actions proposed in this project, will support the implementation of natural resource management activities that will align with this legal framework.

Senegal	Decentralization	The Government of Senegal committed to a process of decentralization over 40 years ago, and has established a system of decentralized administration including regions, departments, districts and communes. Different levels of decentralized administration have been considered during the stakeholder analysis and will be engaged in the project. The commitment to decentralization is also reflected in the legal framework governing rights and conditions for access to resources, including the Environment Code of 2001 and the Forest Code of 1998. The actions proposed in this project, will support the implementation of natural resource management activities that will align with this legal framework.
Mauritania	National Strategy for the Institutionalization of Gender Equity (SNIG, 2011)	The project has been designed and will be implemented to support the equity and gender equality objectives of the SNIG. Specific principles and activities have been integrated in the project design to reflect this commitment.
Senegal	National Strategy for Gender Equity and Equality (SNEEG, 2015)	The project has been designed and will be implemented to support the objectives of the SNEEG to eliminate inequalities between men and women by ensuring their participation in decision-making bodies and equitable access to resources and benefits of development. Specific principles and activities have been integrated in the project design to reflect this commitment.

C. Describe The Budgeted M & E Plan: □

Monitoring and evaluation (M&E) of the proposed project will be conducted in accordance with established IUCN and GEF procedures/guidelines. The standard M&E reports and procedures required for all IUCN/GEF projects will apply to the M&E plan for the proposed project, including the following:

Inception Workshop and Report. The Inception Workshop gathering the stakeholders involved in the project, and resulting Inception Report are the venue and means to finalize preparations for the implementation of the proposed project, involving the formulation of the first annual work plan, detailing of stakeholder roles and responsibilities, and of reporting and monitoring requirements. As the Project Document was developed based on a consultative process that integrated both scoping and field missions as well as stakeholder workshops, it is anticipated that the inception workshop and the resulting report would result in only minor adjustments to the provisions in the original Project Document.

Strategic Result Framework. Monitoring and evaluation begins with preparation of the Project Document, including a logical framework matrix based on indicators of implementation progress and means of verification. This Log Frame will underpin a results-based M&E system for the proposed project.

Quarterly Progress Report. Each quarter, the PMU will prepare a summary of the project's substantive and technical progress towards achieving its objectives. The summaries will be reviewed and cleared by IUCN before being sent to the IUCN/GEF Coordinator.

The Annual Project Report (APR) / project implementation review is designed to integrate the independent views of the main stakeholders of a project on its relevance, performance and the likelihood of its success. The APR covers performance assessments on project outputs and outcomes, major achievements, evidence of success, constraints, lessons learned and recommendations as well as an overall rating of the project. The APR will be prepared by the Project Coordinator after consultation with the relevant stakeholders, and will be submitted to IUCN. The stakeholder review will be framed by the logical framework matrix and the performance indicators. A Terminal Project Report will be prepared for the terminal meeting.

Tripartite Review (TPR) (Steering committee). The Tri-Partite Review (TPR) is a policy-level meeting of the parties directly involved in the implementation of a project. The same parties involved in the prior Inception Workshop will participate in the TPR (i.e., the members of the Steering Committee, including the national executing agencies, IUCN, local partners, direct beneficiaries and other stakeholders). It will assess the progress of the project and make decisions on recommendations to improve the design and implementation of the project in order to achieve the expected results. On these occasions, the Project Coordinator will submit an updated workplan (if required) and the latest Annual Project Report (APR), and formulate recommendations for eventual adjustments of strategies and activities. A draft APR shall be prepared at least two months in advance of the TPR to allow for review by IUCN prior to the meeting. The Executing Agencies make sure that the recommendations of the TPR are carried out. Annual TPRs are not required as the Steering Committee meetings are expected to address many of the issues that would normally be addressed in a TPR.

Independent External Evaluation at mid-term and termination of the project. A mid-term project evaluation will be conducted during the third implementation year, focusing on relevance; performance (effectiveness, efficiency and timeliness); issues requiring decisions and actions; and initial lessons learned about project design, implementation and management. A final evaluation, which occurs three months prior to the final TPR meeting, focuses on the same issues as the mid-term evaluation but also covers impact, sustainability, and follow-through recommendations, including the contribution to capacity development and the achievement of global environmental goals.

Budget Revisions. Project budget revisions will reflect the final expenditures for the preceding year, to enable the preparation of a realistic plan for the provision of inputs for the current year. Other budget revisions may be undertaken as necessary during the course of the project. It is expected that significant revisions will be cleared with the IUCN/GEF Coordinator for consistency with the GEF principle of incremental and GEF eligibility criteria before being approved;

Corresponding budget. The corresponding budget for the M&E plan is USD 117,275. The detailed budget of the M&E plan is provided within the detailed budget of the overall GEF project (Appendix 6).

The overall monitoring and evaluation plan is summarized in Table 32 below.

M&E activity	Frequency	Responsible	Budget (GEF funded)
1. Project Planning Documents: PRODOC, Logframe (including indicators), M&E Plan	During project design stage	Project proponent together with RCU Staff and consultants and other stakeholders	PPG grant
2. Quarterly Progress Report	Quarterly	Project coordinator and M&E and knowledge management officer	Activity 3.7 & Activity 3.8 (Total activity budget USD 95,975)
3. Annual Project Progress Report	Annually	Project coordinator M&E and knowledge management officer in consultation with project stakeholders	
4. Tripartite Review / Project Implementation Review (PIR)	At 18 months	DAPL / MEDD-MR, DPN / MEDD-SN (National Executing Agency), National Project Coordinator, PMU, IUCN, etc	Activity 3.7
5. Independent External Evaluation	At the mid-point and end of project implementation	Implementing agency to hire MTR and Terminal Evaluation experts	Activity 3.9 (Total activity budget USD 29,800)
6. Budget revisions	When necessary	Project team, IUCN headquarters	

PART III: Certification by GEF partner agency(ies)

A. GEF Agency(ies) certification

GEF Agency Coordinator	Date	Project Contact Person	Telephone	Email
Sheila Aggarwal-Khan	5/28/2019	Bechir Ndiath		bechir.ndiath@iucn.org

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). □

See Section 2. in the Project Document

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). □

Annex B of the CEO endorsement request -

Please find below responses to the questions raised by the **STAP**.

1. STAP welcomes this well-researched project which, at the downstream end of the Senegal River, consolidates the Senegal River basin-wide transboundary work that resulted in completion of a GEF supported TDA/SAP by the OMVS. That foundation project significantly informs the baseline and proposals made in the present PIF.

During the PPG phase of project development, continued effort was made to assure the project builds on the impressive body of transboundary work at the level of the Senegal River Basin.

2. The management of the fresh water resources within the proposed project area is largely dependent upon the upstream regime under the jurisdiction of the OMVS; therefore, the proponents are to be commended for having reached agreement with OMVS to coordinate their interests within the project. In addition, the proposal recognizes that the *Observatoire de l'Environnement de l'OMVS* will be an essential partner to the Observatory of the Senegal Delta Transboundary Biosphere Reserve.

The OMVS will be a key partner in the implementation of the project, and will be integrated into the governance and management bodies of the SDTBR. The project will directly address priority actions identified by the OMVS for the Senegal River Delta and will generate information that will inform work by OMVS at the level of the delta and broader basin.

3. STAP recommends additional attention to the following aspects of the project design during its further development.

4. The PIF recognizes that one of the main constraints affecting the management of the Biosphere Reserve is competition for land between farmers and livestock owners, and acknowledges that this is not an easy conflict to manage. It will be important see some indication of how this conflict could be managed, and what kind of alternative livelihoods could be conceived of for the affected communities to reduce the external pressure on the Biosphere reserve. The challenge is similar, albeit of somewhat different nature, in fish stocks and fishing. Another issue is excessive illegal exploitation of natural resources. What are the root causes and how would legislation mitigate them?

Competition for land is a serious issue within the SDTBR, a large multi-use system. This competition has been exacerbated by the expansion of agricultural activities, notably irrigated agriculture. This expansion is the result of a concerted effort and reflects national priorities as regards the development and intensification of the agricultural sector and food security. Among the impacts of these

changes have been a disappearance of transhumant routes, reduced pastureland and prolonged concentrations of herds around permanent water points. At the same time, herd numbers have grown.

As recommended by the STAP, it will be critical that the process to develop management strategies for the SDTBR considers carefully and creatively how conflicting use patterns can be managed. Establishing a functional SDTBR governance structure is the first step in establishing a means for dialogue on these issues. It will also provide a critical framework to consider options and evaluate their impacts, including as necessary through applied research. These issues are not easy to resolve, and will require commitments at multiple levels to address. The SDTBR will provide a platform to engage stakeholders, build their understanding and advocate for the changes necessary. The particular management strategies that are applied (e.g., restoration of pastureland, strengthening of regulatory frameworks, development of alternative livelihoods) will be dependent on opportunities, constraints and local conditions.

5. Both the management and technical master plan work say that climate change will be considered (e.g. in component 1). However, the challenges due to climate change and insufficient adaptation are nevertheless substantive risks that should be stated in the risks table, relevant to management of the marine/saline and freshwater dependent components of the Reserve. Additionally, the proponents are advised to evaluate the emerging results of the World Bank/GEF project (GEF ID 5133) Senegal River Basin Climate Change Resilience Development Project, and more generally its IDA counterpart, the Senegal River Basin Multi-Purpose Water Resources Development Project (WB ID P131323).

The project design recognizes the risk posed by climate change and variability. As part of the process to elaborate the SDTBR Management Plan vulnerability and climate scenario planning exercises will be used to assure management strategies are strategic and well-adapted to changing conditions. The management plan is intended to inform management of the SDTBR in an adaptive format beyond the three-year project period, and therefore should consider the longer-term implications of challenges due to insufficient adaptation and climate change. Efforts to restore ecosystems, implement adapted sustainable use and management strategies and develop alternative income opportunities undertaken during the course of the project will help to build the resilience of local ecosystems and communities.

The results of the World Bank/GEF projects mentioned by the STAP were well integrated into the project design. Most notably, the project considered the results for the most recent (2016) TDA coordinated by the OMVS in the context of these projects. In addition, the project directly contributes to multiple priority actions that have been identified in the 2016 SAP elaborated in the context of these projects.

6. The OMVS facilitation of water flows and their seasonality and the reconciliation of the needs of wider Senegal River basin users and the Reserve need to be elaborated further. It is clear that the project itself will explore closer integration and use of observatory data across the Senegal basin with regard to the needs of the Reserve, however, the risk table should also reflect these challenges explicitly, and state whether the proponents consider mitigating these risks to be within the control of the project itself.

The project recognizes that the management of water flows is a key issue in the SDTBR. It is at the root of many of the changes that have occurred to natural ecosystems. At the same time, a strong framework for managing water flows has been established (See Section 3.5 of the Project Document). In addition, through previous and ongoing projects, a strong working relationship has been established between key stakeholders in the SDTBR (e.g., management of water flows to protected areas in the context of ecosystem restoration and artificial flooding). The OMVS recognizes the environmental problems and associated social issues facing the delta; they also recognize the importance of the SDTBR in mitigating some of these issues (See Section 4.5 of the Project Document). As such, they will be actively engaged in the project, including formal involvement through the governance and management bodies of the SDTBR. This will provide the best opportunity to share information and collectively design management approaches that recognize the different needs as regards water resources and the management priorities for water flows.

7. Regarding ecosystem management, IUCN's earlier review (Hamerlynck, O. and Duvail, S., 2003) of the Mauritanian part of the Senegal River delta highlights the relatively precise regime of water flow, quality and seasonality necessary to maintain sustainably the ecosystem services derived from the key wetland habitats of the Reserve. The present project appears to implicitly accept that trade-offs will be necessary, which underlines the need to define clear minimum standards of service and accountability across the many agencies involved at local, national and regional level. To this end, the description for Output 1.1.2 Management Plan for the SDTBR needs to be more precise regarding what criteria the proponents will use to measure the effectiveness of the Plan: especially in terms of the claimed global environmental benefits, including 'stop the degradation of ecosystems, habitats and natural resources, and to invest in sustainable management, restoration, protection and maintenance of the ecosystem services in this environment'. Preparation of the comprehensive Management Plan involves complex scientific issues. Any action in one part of the system may trigger a range of direct and indirect impacts in several other components. These linkages are imperfectly understood and need to be thoroughly assessed.

The project recognizes the complex nature of the management issues facing the SDTBR. As pointed out in the STAP, the direct and indirect impacts of all of these issues are not thoroughly understood. This is evidenced by the fact that many stakeholders consulted during the PPG phase suggested management approaches and then qualified their suggestions by acknowledging that while they think that a certain approach may work, they are not certain. Given these high levels of complexity and uncertainty, the SDTBR provides a unique opportunity to establish dialogues around some of these issues, develop well-thought-out, evidence-based strategies to address them (e.g., based on clear results chains) and monitor the impacts. Recognizing that not all the impacts are well understood, the project will try to prevent and mitigate negative social impacts by undertaking targeted social assessments. The project also includes a grievance mediation and conflict resolution mechanism to assure stakeholders have a means to have their concerns addressed. In addition, the strong commitment of the project to applied research provides a further means to investigate the environmental and social impacts of SDTBR management strategies more thoroughly and contribute to better understanding.

8. More generally, the project component descriptions and output table contain very few suggested outcome indicators regarding measurable results leading to the proposed outcomes. STAP looks forward to seeing specific targets defined in the full project brief.

As part of the project design process, additional outcome indicators have been integrated into the project results framework (See Section 2 of the Project Document). Under Component 1, it is envisioned that the project will establish a means to assess the

management effectiveness of the SDTBR based on (i) the established Periodic Review (PR) process, which focuses on assessing whether a biosphere reserve is fulfilling required governance arrangements and adequate implementation plans and programs of work are in place and (ii) a set of qualitative and quantitative indicators designed to more frequently track progress and impacts relative to SDTBR objectives. The latter set of indicators will be informed by established frameworks for protected area management effectiveness evaluation (PAME). In addition to the objectives laid out in the SDTBR Management Plan, these indicators will also take into consideration the objectives of complimentary strategies and plans that are designed to support SDTBR management, i.e., the Research Plan, the Capacity Building Strategy and Action Plan, and the Communication Strategy and Action Plan.

The M&E system will also include a component dedicated to assessing impacts to the target ecosystems and their services. The newest version of the PR framework has introduced a section to examine the ecosystem services dimension of biosphere reserves as well as their role in adapting to and mitigating the impacts of climate change. In addition to this reporting requirement for all biosphere reserves, the project will identify appropriate qualitative and quantitative indicators to assess the impact of restoration, maintenance and management strategies implemented under Outcome 2.1 based on the target ecosystems and services the project aims to influence.

Please find below additional comments related to the comments received during the **PIF review process**.

Comment: Please indicate where management structures, PPPs, or activities will cooperate with the city of St Louis as indicated in the text and also with the aim stated to leverage co-finance.

During the PPG phase, efforts were made to explore more thoroughly the potential for public-private partnerships in the context of the SDTBR. Stakeholders that were consulted expressed interest in having the private sector get more involved more in the SDTBR, but feel there is a need to first establish some basic enabling conditions related to the management of the SDTBR. As such, it remains too preliminary to enter into specific details on what partnerships will be developed. Instead as part of Activity A1.12 the project proposes that once some essential aspects of the SDTBR governance and management are established, and as part of the SDTBR management planning process, the appropriate SDTBR bodies engage systematically with the private sector (i.e., through a forum) and examine opportunities to develop more formal partnerships.

Comment: Please indicate how issues of sustainability regarding data collection are envisioned.

Under Component 3, the project will support the establishment of a functional information management mechanism at the level of the SDTBR/Delta. The CST will be responsible for developing clear guidelines for the safeguarding and sharing of data, with the understanding that the public repository will also serve as a long-term archive for the information. This information management system will be designed to complement and feed existing systems for information management at national levels and at the level of the Senegal River Basin, including within the framework of the OMVS.

Comment: During project design please include a plan for long term financial sustainability of the SDTBR.

The project design includes an output (i.e., Output 1.1.5 - The annual budget of the SDTBR secretariat is agreed upon and resources are secured for the next 5 years) that is specifically concerned with establishing the long-term financial sustainability of the SDTBR. To realize this output, the project will support the development of a business plan for the SDTBR. This business plan will be elaborated as part of a broader process of management planning for the reserve and will reflect the management objectives and strategies of the SDTBR. The project will also support efforts to strengthen national contributions to the SDTBR as well as financial contributions through income generation and effective partnerships that aligns with the SDTBR Management Plan as well as sustainable financing mechanisms (e.g., payment for ecosystem services such as water provisioning).

IUCN responses to comments from Germany

Comments	IUCN response
<p>In addition, we thought it could be interesting for you to get in touch with the WACA team : Dahlia Lotayef dlotayef@worldbank.org and Gayatri Kanungo gkanungo@worldbank.org in particular with regards to the work planned on Saint-Louis, the coastline.</p>	<p>IUCN Senegal is hosting the WACA (West Africa Coastal Areas Management Programme) regional coordination team in the Dakar Office. The WACA programme is funded by the World Bank. A collaboration is being developed with the Senegal WACA team in order to build synergies during the implementation of the SDTBR project.</p>
<p>The project documents should incorporate the implementation of the FAO Code of Conduct for Responsible Fisheries (CCRF) as well as the FAO-Voluntary Guidelines on Small Scale Fisheries (VGSSF) in their component 2 project design.</p> <p>A strong collaboration with the Commission Sous-Régionale des Pêches (CSR) about any coastal fisheries intervention in this transboundary context is advised.</p>	<p>IUCN has also established strong relationships with the CSR that resulted in developing and implementing projects : Renforcement des Capacités Régionales de Gestion des Pêches en Afrique de l'Ouest (RECARGAO) and Réseau des Aires Marines Protégées de l'Afrique de l'Ouest (RAMPAO) to foster integration of national policies on fisheries and marine protected areas management. This experience will be useful to build partnerships with the SDTBR during the implementation phase.</p>
<p>The project design should be prepared to also enable investments into cold-chains and higher value processing as well as marketing for fisheries products where feasible.</p> <p>The project should actively seek for more synergies with other interventions to identify alternative livelihoods for local fishing communities.</p>	<p>This has been taken on board during the project preparation, in particular under the component on livelihoods. The WACA Senegal chapter gives a good opportunity to address these issues and build synergies as well as with interventions from other donors such as the MAVA Foundation, which is very active on these matters in the coastal areas impacted by the project.</p>

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS. □

A. Provide detailed funding amount of the PPG activities financing status in the table below: □

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount (\$)		
	Budgeted Amount	Amount Spent Todate	Amount Committed
1. <u>Consultants</u>	130,913	81,138	49,775
<u>1.1. Firm contract (incl. ESMS, Travels, Meeting cost, Translation)</u>			
2. IUCN Support (travel cost and DSA) - Missions	3,087	3,892	
3. Workshops (lancement et validation)	16,000	13,190	
Total	150,000	98,220	49,775

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

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

ANNEX E: GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, Table G to the extent applicable to your proposed project. Progress in programming against these targets for the program will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Attached to the submission

ANNEX F: Project Taxonomy Worksheet

Use this Worksheet to list down the taxonomic information required under Part1 by ticking the most relevant keywords/topics//themes that best describes the project

See inserts and annex attached

ANNEX G: Project Budget Table

Please attach a project budget table.

Back

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