International Union for Conservation of Nature

Country: Mauritania

PROJECT DOCUMENT

Final version

Continental wetlands adaptation and resilience to climate change

Brief Description of the project

The proposed GEF-funded project "Continental wetlands adaptation and resilience to climate change" will be implemented by the National Agency for the Great Green Wall of Mauritania (ANGMV) in close coordination with the International Union for the Conservation of Nature (IUCN). The project's goal is "to increase the resilience to climate change of three inland wetlands ecosystems and adjacent communities through an ecosystem-based management approach". It will work to achieve this goal at the three wetlands of Tâmourt Bougary, Gâat Mahmoûda and Tâmourt en Na'âj in south-eastern Mauritania by enhancing governance mechanisms and building capacity for and establishing improved wetland management.

The project will simultaneously work to improve the adaptive capacity and resilience of local communities through the adaptation and diversification of climate-proof livelihoods. Over 20,000 people live in the areas adjacent to the three wetlands selected for intervention. Most of these people rely directly on the natural resources associated with these wetlands, which are managed as multi-purpose systems, for their food security and livelihoods. Enhancing the governance of these wetlands and assuring the sustainable use of their resources is vital to maintain or improve the values and function of these freshwater ecosystems, and build the adaptive capacity and resilience of local communities in the face of growing anthropogenic pressures and climate variability.

Finally, the project will work at local, regional and national levels to raise awareness and improve access to information on the importance of wetlands, the causes of wetland degradation, climate change and management solutions. This will include establishing a national information management system for wetlands. The fact that no such system exists currently is a barrier to coordinated and effective adaptive management and monitoring of wetlands, wetlands' values and wetlands' functions.

The project will have important co-benefits in addressing land degradation and biodiversity loss. Without the project's interventions, the selected wetlands and their peripheral production areas will continue to degrade and their resilience to climatic and non-climatic stressors will continue to decrease. This degradation has a direct and negative impact on water resources, soil properties and the aquatic, terrestrial and migratory species that depend on these habitats and their services.

The structure of the project is aligned with the legal framework in Mauritania, which allows for the transfer of the mandate of management of natural resources to local, community-based associations based on the establishment of local conventions. It supports Mauritania's ambitions as regards decentralization and will contribute to the implementation of the National Strategy for the Environment and Sustainable Development (SNEDD) and the National Strategy for the Conservation of Wetlands (SNCZH).

Prepared by BRLi. 2017.

List of Acronyms

ALGRN	*Association locale pour la gestion des ressources naturelles* / Local association for the management of natural resources
ACCMR	*Adaptation au Changement Climatique en Milieu Rural* / Adaptation to Climate Change in Rural Areas
AGPO	*Association de gestion participative des Oasis* / Association for the collective management of oases
ANGMV	*Agence Nationale de la Grande Muraille Verte de Mauritanie* / National Agency for the Great Green Wall of Mauritania
APGMV	*Agence Panafricaine de la Grande Muraille Verte* / Pan-African Agency for the Great Green Wall of Mauritania
ARE	*Autorité de regulation* / Regulatory Authority
AU	African Union
C	Celsius
CBD	Convention on Biological Diversity
CCAFS	Climate Change, Agriculture and Food Security
CCBV	*Comité Coordination du Bassin Versant* / Coordination Committees for Watersheds
CCPNCC	*Cellule de Coordination du Programme National sur les Changements Climatiques* / National Programme on Climate Change Coordinating Unit
CEDEF	Convention on the Elimination of All Forms of Discrimination Against Women
CESCR	Committee on Economic, Social and Cultural Rights
CESCR	United Nation's Committee on Economic, Social and Cultural Rights
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CILSS	*Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel* / Committee for Drought Control in the Sahel
DA	*Direction de l'Assainissement* / Direction of Sanitation
DAPL	*Direction des Aires Protégées et du Littoral* / Direction for Protected areas and the Coast
DH	*Direction de l'Hydraulique* / Direction of Hydraulics
DHB	*Direction Hydrologie et Barrages* / Direction for Hydrology and Dams
DNRM	Decentralized natural resource management
DPCID	*Direction de la Planification, de la Coordination Intersectorielle et des Données* / Direction for Planning, Intersectoral Coordination and Data
DPN	*Direction de la Protection de la Nature* / Direction for the Protection of Nature
DREDD	*Délégation Régionale Environnement et Développement Durable* / Regional Delegations for the Environment and Sustainable Development
DRHA	*Directions Régionales de l'hydraulique et de l'assainissement* / Regional Directions for Water and Sanitation
EMSP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
FAO	Food and Agriculture Organization
FSP	Full-sized project

GCM	Global circulation model
GDP	Gross domestic product
GEF	Global Environment Facility
GIRNEM	*Projet Gestion Intégrée des Ressources Naturelles de l'Est Mauritanien* / Integrated Natural Resources Management in Eastern Mauritania
GIS	Geographic information system
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit* / German development cooperation
GNI	Gross national income
ha	Hectare
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IGMVSS	*Initiative Grande Muraille Verte pour le Sahara et le Sahel* / Great Green Wall of the Sahara and the Sahel Initiative
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
IWRM	Integrated water resource management
km	Kilometer
LCDF	Least Developed Countries Fund
LGAF	Land Governance Framework Report
M&E	Monitoring and evaluation
MA	*Ministère de l'Agriculture* / Ministry of Agriculture
MAED	*Ministère des Affaires Economiques et du Développement* / Ministry of Economic Affairs and Development
ME	*Ministère de l'Elevage* / Ministry of Livestock
MEDD	*Ministre de l'Environnement et du Développement Durable* / Ministry of the Environment and Sustainable Development
MEF	*Ministère de l'Economie et des Finances* / Ministry of the Economy and Finances
MHA	*Ministère de l'Hydraulique et de l'Assainissement* / Ministry of Water and Sanitation
mm	milimeters
MPEM	*Ministère des Pêches et de l'Economie Maritime* / Ministry of Fisheries and Maritime Economy
MRG	Minority Rights Group
NAPA-RIM	National Adaptation Programme of Action to Climate Change / *Programme d'Action National d'Adaptation aux Changements Climatiques*
NBSAP	National Strategy and Action Plan for Biodiversity / *Stratégie et Plan d'Action National de la Biodiversité*
NC	National Communication
NGO	Non-governmental organization
No.	Number
NRM	Natural resource management
NTFP	Non-timber forest product
ONAS	*Office National de l'Assainissement* / National Office for Sanitation

ONSER	*Office National des Services d'Eau Rurale* / National Office for Rural Water Services
PACBV	*Projet d'Aménagement Communautaire des Bassins Versants* / Community-Based Watershed Management Project
PANEDD	*Plan d'Action National pour l'Environnement et le Développement Durable* / National Action Plan for the Environment and Sustainable Development
PARSAAC	*Amélioration de la résilience des communautés et de leur sécurité alimentaire face aux effets néfastes du changement climatique* / Improving community resilience and food security in the face of the adverse effects of climate change
PDDO	*Programme de Développement Durable des Oasis/ Project for the Sustainable Development of Oases*
PDRC	*Projet de Développement Rural Communautaire/ Project for Rural Community Development*
PPG	Project Preparatory Grant
PIF	Project Information Form
PMC	Project management cost
PMU	Project management unit
PNA	*Politique Nationale d'Assainissement* / National Policy for Liquid Sanitation
PoWPA	Programme of Work on Protected Areas
PRAPS	*Projet Régional d'Appui au Pastoralisme au Sahel* / Regional Project to Support Pastoralism in the Sahel
PRODOC	Project document
ProGRN	*Programme de Gestion des Ressources Naturelles* / Program for the management of natural resources
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
RBM	Results-based monitoring
RIMRAP	*Renforcement Institutionnel en Mauritanie pour la Résilience Agricole et Pastorale* / Institutional strengthening in Mauritania for agricultural and pastoral resilience
RP	*Régimes Particuliers* / Particular regimes
SCAPP	*Stratégie Nationale de Croissance Accélérée et de Prospérité Partagée* / National Strategy for Accelerated Growth and Shared Prosperity
SNA	*Stratégie Nationale d'Assainissement* / National Sanitation Strategy
SNCZH	*Stratégie Nationale de Conservation des Zones Humides* / National Strategy for the Conservation of Wetlands
SNDD	*Stratégie Nationale de Développement Durable* / National Strategy for Sustainable Development
SNDE	*Société Nationale de Distribution de l'Eau* / National Water Distribution Company
SNEDD	*Stratégie Nationale de l'Environnement et du Développement Durable* / National Strategy for the for the Environment and Sustainable Development
SNIG	*Stratégie Nationale d'Institutionnalisation du Genre* / National Strategy for the Institutionalization of Gender Equity
SRES	Special Report on Emissions Scenarios
STAP	Scientific and Technical Advisory Panel
ToR	Terms of references
UNCCD	United Nations Convention to Combat Desertification

UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WB	World Bank
WFP	World Food Programme

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1 Project Profile

1.1	**Project title**	Continental wetlands adaptation and resilience to climate change
1.2	**Project Number (GEF ID / IUCN ID)**	GEF ID: 8033/ IUCN ID P01833
1.3	**Project type (FSP or MSP)**	Full-sized Project (FSP)
1.4	**Trust Fund**	GEF LDCF
1.5	**GEF strategic objectives and focal areas**	Climate change
1.6	**IUCN programme priority**	Programme Area 2: Promoting and supporting effective and equitable governance of natural resources Programme Area 3: Deploying nature-based solution to address societal challenges including climate change, food security
1.7	**Geographical scope**	Mauritania
1.8	**Project executing agency/ies**	Implementing Agency: International Union for the Conservation of Nature (IUCN) Executing Agency: National Agency for the Great Green Wall of Mauritania (ANGMV)
1.9	**Duration of project (including expected start and end dates)**	5 years (November 2018 – October 2023)

1.10 Project cost (Summary)

Item	USD
A. GEF financing	***4,850,000***
B. Co-financing	
- IGMVSS / ANGMV	4,000,000
- Mava Foundation	3,057,990
- Co-financier 3	
C. Sub-total co-financing	**7,057,990**
D. Total (A+C)	***11,907,990***

2 Project Results Framework

Objective/Outcome/Output	Indicators	Baseline	End of project targets	Source of verification	Assumptions / Risks
Project Objective: To increase resilience to climate change of three inland wetlands ecosystems and adjacent communities through an ecosystem-based management approach					
Outcome 1.1. Improved management of three watersheds through integrated approaches	1.1.a: Number of wetlands with enhanced governance systems at the watershed level 1.1.b: Number of km² of watershed under improved management	1.1.a: 0 1.1.b: 0	1.1.a: 3 1.1.b: 17,260	Decrees from MHA providing formal recognition of CCBV Annual project monitoring report	Assumptions: MHA endorse CCBV Risks: Low level of stakeholder engagement Low level of coordination between stakeholders
Output 1.1.1. Three CCBV established and operational	1.1.c: Number of CCBV established, recognized and operational	1.1.c: 0	1.1.c: 3	Decrees from MHA providing formal recognition of CCBV Annual project monitoring report Minutes of CCBV meetings	Assumptions: MHA endorse CCBV
Output 1.1.2. Three plans of priority actions at the watershed level developed and implemented in support to restoration and management of three selected wetlands	1.1.d: Number of watershed diagnostic assessments completed 1.1.e: Number of vulnerability assessments completed 1.1.f: Number of plans of priority actions	1.1.d: 0 1.1.e: 0 1.1.f: 0	1.1.d: 3 1.1.e: 3 1.1.f: 3	Watershed diagnostic reports, including vulnerability assessments CCBV priority action plans Annual project monitoring report	Assumptions: High level of engagement by local stakeholders, including MHA Appropriate capacity to implement assessments and

	developed and adopted by CCBV 1.1.g: Percentage of proposed actions implemented annually	 1.1.g: 0	 1.1.g: 100%		priority actions identified
Outcome 1.2. Ecological structure and function of three wetlands covering 101,250 hectares restored and maintained through decentralized, participatory management	1.2.a: Number of hectares of degraded wetlands restored 1.2.b: Number of hectares of wetlands whose functions and structure are maintained	1.2.a: 0 1.2.b: 0	1.2.a: 101,250 1.2.b: TBD based on local conventions	Decrees from MEDD providing formal recognition of ALGRN Annual project monitoring report, including sections on the state of resources, capacity assessments and trainings	<u>Assumptions</u>: CCBV and ALGRN created, involved and committed Strategies to improve watershed and wetland management developed <u>Risks:</u> Watershed and wetland management is not well coordinated by stakeholders Certain watershed or wetland management activities are beyond the scope of this project
Output 1.2.1. Up to five ALGRN created and operational at three wetland sites	1.2.c: Number of ALGRN established, recognized and operational	1.2.c: 0	1.2.c: Up to 5	Decrees from MEDD providing formal recognition of ALGRN *Cartes des vocations* Annual project monitoring report	<u>Assumptions</u>: ALGRN created, involved and committed <u>Risks:</u>

	1.2.d: Number of wetlands with *Cartes des vocations* 1.2.e: Number of operational local surveillance and monitoring teams 1.2.f: Number of mechanisms for grievance mediation and conflict resolution established 1.2.g: Number of exchange visits conducted 1.2.h: Number of beneficiaries (disaggregated by gender) of exchange visits	1.2.d: 0 1.2.e: 0 1.2.f: 0 1.2.g: 0 1.2.h: 0	1.2.d: 3 1.2.e: Up to 5 1.2.f: Up to 5 1.2.g: 9 1.2.h: 135		Conflicts between stakeholders Low commitment to assure ALGRN are representative of different user groups, including vulnerable groups
Output 1.2.2. Local management conventions and Régimes Particuliers (RP) to restore, maintain and manage three wetlands (and their associated resources) established	1.2.i: Number of wetland diagnostic assessments completed 1.2.j: Number of local conventions established 1.2.k: Number of RP developed	1.2.i: 0 1.2.j: 0 1.2.k: 0	1.2.i: 3 1.2.j: 3 1.2.k: TBD based on needs evaluated during diagnostic assessments	Diagnostic assessments Local conventions *Régimes Particuliers*	<u>Assumptions</u>: ALGRN created, involved and committed <u>Risks:</u> Conflicts between stakeholders

Output 1.2.3. 101,250 hectares of wetlands naturally regenerated and maintained with improved management	1.2.l: Number of hectares of wetlands naturally regenerated and maintained 1.2.m: Change in vegetation cover	1.2.l: l 1.2.m: 0	1.2.l: TBD based on conventions and diagnostic assessments 1.2.m: TBD	Annual project monitoring report	Assumptions: ALGRN created, local conventions and RP established Risks: Low level of compliance with NRM regulations
Output 1.2.4. Capacity of key stakeholders in restoration and management of watersheds and wetlands improved	1.2.n: Number of existing or potential institutions that have had their capacities strengthened in integrated watershed and wetland restoration and management 1.2.o: Number of beneficiaries (disaggregated by gender) of training in concepts of integrated watershed and wetland vulnerability, restoration and management 1.2.p: Number of guides on best practice of wetlands and watershed restoration and management	1.2.n: 0 1.2.o: 0 1.2.p: 0	1.2.n: 17 1.2.o: TBD 1.2.p: TBD	Annual project monitoring report (including sections on state of resources, trainings and capacity assessments)	Assumption: Relevant stakeholders identified Appropriate technical expertise identified Risks: Vulnerable groups are not sufficiently engaged

Outcome 2.1. Ecosystem-based management strategies adopted by communities living adjacent to three wetlands	2.1.a: Number of individuals (disaggregated by gender) adopting climate proof livelihood strategies/options 2.1.b: Number of climate proof livelihood strategies/options adopted by beneficiaries per gender 2.1.c: Number of targeted households that have diversified their sources of income with climate proof livelihood strategies/options	2.1.a: 0 2.1.b: 0 2.1.c: 0	2.1.a: 2,000 (50% female) 2.1.b: TBD 2.1.c: TBD	Annual project monitoring report (including sections on state of resources, trainings and capacity assessments)	<u>Assumptions</u>: Local user groups involved and committed Appropriate strategies to diversify livelihoods while sustaining wetlands and in face of climate projections identified <u>Risks:</u> Conflicts between user groups Increased migration Climate projections are not accurate Extreme climate events Insecurity

Output 2.1.1. Climate-resilient livelihood strategies developed and disseminated	2.1.d: Number of simple fisheries management plans established and % of annual activities implemented 2.1.e: Number of simple NTFP management plans established and % annual activities implemented 2.1.f: Number of guidelines on adaptive measures for agriculture developed 2.1.g: Number of guidelines on adaptive measures for pastoralism developed	2.1.d: 0 2.1.e: 0 2.1.f: 0 2.1.g: 0	2.1.d: Up to 5 2.1.e: Up to 5 2.1.f: Up to 5 2.1.g: Up to 5	Annual project monitoring report	<u>Assumption:</u> ALGRN representative of user groups ALGRN committed Local user groups involved and committed Appropriate technical extension agents identified <u>Risks:</u> Conflicts between user groups Low level of commitment or compliance by user groups Benefit sharing is not equal

Output 2.1.2 Climate-resilient livelihood strategies implemented and evaluated for their effectiveness	2.1.h: Increase in income of targeted households as a result of adapted and diversified livelihood strategies 2.1.i: Number of existing or founded cooperatives/producer associations that have strengthened their operational and technical capacities in NRM 2.1.j: Number of fisheries under improved management 2.1.k: Number of hectares of agricultural area under adapted management	2.1.h: 0 2.1.i: 0 2.1.j: 0 2.1.k: 0	2.1.h: TBD 2.1.i: TBD 2.1.j: Up to 5 2.1.k: TBD	Annual project monitoring report	<u>Assumption:</u> ALGRN representative of user groups ALGRN committed Local user groups involved and committed Appropriate technical extension agents identified
Output 2.1.3. Technical capacities to implement climate-resilient livelihood strategies strengthened	2.1.l: Number of beneficiaries (individuals and cooperatives/ producer associations) of training in adapted techniques of NRM 2.1.m: Percentage of individual beneficiaries that are women	2.1.l: 0 2.1.m: 0	2.1.l: TBD 2.1.m: 50%	Annual project monitoring report (including sections on state of resources, trainings and capacity assessments)	<u>Assumption:</u> Relevant beneficiaries identified and committed Appropriate technical extension agents identified

Output 2.1.4. Local stakeholders understanding raised on the causes of wetland degradation, the effects of climate change and management solutions	2.1.n: Number of beneficiaries (individuals) of awareness raising activities	2.1.n: 0	2.1.n: 10,000	Communication and educational tools/materials Annual project monitoring report (including sections on state of resources, trainings and capacity assessments)	<u>Assumption:</u> Relevant beneficiaries identified and committed
	2.1.o: Percentage of individual beneficiaries that are girls or women	2.1.o: 0	2.1.o: 50%		
	2.1.p: Number of communication and educational materials produced	2.1.p: 0	2.1.p: TBD		
	2.1.q: Number of beneficiaries (educators) of training in the use of education materials	2.1.q: 0	2.1.q: TBD		
	2.1.r: Percent of beneficiaries (educators) that are women	2.1.r: 0	2.1.r: 50%		
	2.1.s: Number of wetland appreciation days organized	2.1.s: 0	2.1.s: 4		

Outcome 3.1. Improved knowledge management system for climate-resilient wetland ecosystems	3.1.a: Number of operational national information system being used to improve wetland management and improve adaptive capacity to respond to climate change	3.1.a: 0	3.1.a: 1	National information system (database)	Assumption: Appropriate host organization identified Risk: Low confidence in data sharing policies leads to low participation
Output 3.1.1. A geo-referenced information system on Mauritania's wetlands, key climate features and ecosystems services is established and functional	3.1.b: Number of wetlands surveyed 3.1.c: Number of wetlands entered in national database	3.1.b: 0 3.1.c: 0	3.1.b: TBD 3.1.c: 200	National information system (database)	Assumption: Appropriate host organization identified Risk: Low confidence in data sharing policies leads to low participation
Outcome 4.1. Project implemented based on RBM, and lessons learned/best practices documented and disseminated	N/A	N/A	N/A	N/A	
Output 4.1.1. Project Monitoring & Evaluation Plan and system in place	4.1.a: Number of annual reports produced	4.1.a: 0	4.1.a: 5	Annual technical and financial reports	
Output 4.1.2. Project risks monitored throughout project implementation	4.1.b: ESMP implemented	4.1.b: 0	4.1.b: 1	Annual project monitoring report	

Output 4.1.3. Communication strategy developed and implemented	4.1.c: Number of program communication materials produced 4.1.d: Number of annual communication events developed and implemented	4.1.c: 0 4.1.d: 0	4.1.c: 2 4.1.d: TBD	Annual project monitoring report Communications materials/tools	
Output 4.1.4. Mid-term and Final Project Evaluations completed	4.1.e: Number of reports produced	4.1.e: 0	4.1.e: 2	Mid-term and final evaluations	
Outcome 5.1. The project is effectively and efficiently managed	N/A	N/A	N/A	N/A	N/A
Output 5.1.1: Project management units established and functional	5.1.a: Number of project management units established 5.1.b: Number of local project coordination units established	5.1.a: 0 5.1.b: 0	5.1.a: 1 5.1.b: 1	Annual project monitoring report Mid-term and final evaluations	

3 Background and situation analysis (Baseline course of action)

3.1 Background and context

3.1.1 Environmental context

Located along the coast of West Africa, Mauritania lies between 15 and 27 degrees north latitude and covers an area of 1,030,700 square kilometers. Mauritania's environment is predominantly desert or semi-desert, typified by vast arid plains broken by occasional scarps and sandstone plateaus. The notable exceptions to this depiction are the more mountainous terrain in the north and center of the country and the alluvial plain of the Senegal River in the south. Mauritania's climate is hot and arid, with annual rainfall totals ranging from 600 mm in the extreme south to less than 50 mm per year in the north. Because of its location and climate, the country is both Saharan and Sahelian. The northern limit of the Sahelian climate zone lies along the 150 mm isohyet line. Along this line, which has shifted further south over the last 50 years, there is an area of transition. Additional climatic variations are discernible between coastal and continental areas of the country, with continental areas experiencing more pronounced seasons and higher temperatures.

Based on these regional variations in climate and the distribution of predominant types of vegetation, Mauritania can be divided into four major ecological regions: (i) the northern Saharan (or arid) region, (ii) the Sahelian region, (iii) the coastal region and (iv) the Sudanian (or river) region. These regions do not coincide perfectly with the four recognized climatic zones which include: (i) the northern Saharan zone, which receives an annual rainfall of less than 100mm per year and covers 76% of the country; (ii) the Sahelo-Sahelian zone, which receives between 100 mm and 200 mm of rainfall per year and covers 12.5% of the country; (iii) the Sahelian zone, which receives between 200 mm and 400 mm of rainfall per year and covers 11% of the country; and (iv) the Sahelo-Sudanian zone, which receives between 400mm and 600mm of rainfall per year and covers just 0.5% of the country (MEDD, 2014b).

Given its arid environment, Mauritania has limited surface water resources. The transboundary Senegal River and its tributaries in the south, are the only permanently flowing rivers. Apart from these waterways, Mauritania's surface waters include hundreds of highly variable coastal and continental wetlands. Continental wetlands are characterized by high levels of moisture and nutrient availability relative to surrounding sandy soils. Restoring and maintaining the roles and values of these wetlands is imperative as they represent vital havens for biodiversity and are significant centers of productivity. Despite the important economic, social and environmental role of these wetlands, they have only been partially inventoried and no comprehensive system of data management for wetlands currently exists in Mauritania.

This project aims to improve the management of three wetlands in south-eastern Mauritania: Tâmourt Bougary, Gâat Mahmoûda and Tâmourt en Na'âj[1] (Table 1). The wetlands are located in the semi-arid Sahelian and Sahelo-Saharian zones (Fig. 1 & 2), and each form part of broader regional hydrological regimes (i.e., watersheds) which have to be managed taking into consideration a multitude of hydrologic, economic and ecological factors. The areas of Mauritania where these wetlands are located are dominated by mosaics of shrublands and grasslands, with areas of more sparse vegetation

[1] As a reflection of the diversity of wetland types in Mauritania, a culturally accepted system of typology and nomenclature is used to distinguish different types of wetlands. This system comprises 15 types, which are characterized by specific geomorphological and land use attributes, and has been formally recognized in the SNCZH. The three main types of wetlands are tâmourts, gâats and oueds. Tamourts are large, relatively deep, semi-permanent wetlands. A large proportion of these wetlands are wooded, which is illustrated by the fact that their name implies the presence of *Acacia nilotica* (i.e. *Amour*). They are important areas for watering animals throughout the year, but are less frequently used for flood recession agriculture. They are distinguished by their relatively higher diversity of reptile species, including pythons, crocodiles and Nile monitors. Gâats are large, shallower, hydrologically closed basins with a high density of traditional wells. They are often located in the plains and are the least wooded of the three main wetland types. With a shorter period of flooding, these wetlands are often exploited for flood recession agriculture. Vegetable production is also important in these areas, which have a high number of low earthen dams and traditional field enclosures. Like tâmourts, gâats are important resources for watering livestock throughout the year (MEDD, 2014a).

becoming increasingly prevalent further north and east. Within these areas numerous ephemeral to permanent wetlands form when water from seasonal rains collect in basins or channels of various sizes.

In south-eastern Mauritania, most rain falls in a single wet season from July to October, after which high rates of evaporation and evapotranspiration cause water levels to drop in the dry season. The amount of rainfall received varies in space and time, with an average of 50 to 300 mm per year from north to south. Because of this variation, the duration, depth and size of individual wetlands is unpredictable and changes from year to year; some wetlands only last a couple of months, while others remain until the arrival of the next year's rains.

The three wetlands selected for intervention in the course of this project[2] are semi-permanent to permanent. They range in size from 1,750 hectares to 75,200 hectares, and collectively cover an area of 101,250 hectares. Throughout the wet season and into the dry season, these wetlands are harbors of biodiversity that provide important ecosystem services to local communities (Brito et al., 2011; GRDR, 2011; Shine et al., 2001a; Shine et al., 2001b; Zwarts et al., 2009). All three wetlands are currently managed to support a wide variety of economic activities (see Section 3.1.2). Research by Shine and Dunford (2016) shows that continental wetlands managed as multiple-use resources for a diversity of production systems and biodiversity can be better adapted to a highly variable climate than single-use arable systems, which are highly vulnerable to rainfall fluctuations.

Table 1. Key information on the three wetland sites targeted by the project

	Administrative context				Physical characteristics				
Wetland	**Wilaya**	**Moughatâa**	**Commune**	**Localities**	**Type of wetland**	**Wetland area (ha)**	**Watershed area (sqkm)**	**Annual rainfall (mm)**	**International designation(s)**
Tâmourt Bougary	Assaba	Kiffa	Eghaourat	9 villages (~2500 inhabitants): Voum Lekhdeirat, Oum Lebaar, Chivaa, Rass El Vill, El Gaa, El Vaddi, Oum Lebhar	Tâmourt (permanent)	1 750	660	100-300	
Gâat Mahmoûda	Hodh Ech Chargui	Néma	Beribavatt	13 villages (3850 inhabitants): Souleymania, Diaguéré 1 and 2, Aweinatt, Arafatt, Ghouds, Ahmedou, Chelkha, Hassi Jamea, Gamel, Aïn Oulad Oueiss, Gdauya, Nezaha	Gâat (semi-permanent)	24 300	4 400	200-300	Important Bird Area (IBA MR018) Proposed as a wetland of internaitonal importance under ramsar Convention
Tâmourt en Na'âj	Tagant	Moudjeria	Tâmourt Na'âj	31 villages (3037 households, ~15,000 inhabitants)*	Tâmourt	75 200	12 200	50-200	Important Bird Area (IBA MR015) Ramsar site (Lac Gabou et le réseau hydrographique du Plateau du Tagant, 2009)

* according to other sources may be as many as 61 villages

Biodiversity

According to the new National Strategy for the Environment and Sustainable Development (SNEDD) and its Action Plan (PANEDD) for 2017-2021, the terrestrial faunal biodiversity of Mauritania includes 552 species of birds, 103 terrestrial and marine mammals, 25 species of reptiles and approximately 100 documented species of freshwater fish (MEDD, 2017). The same document reports the plant biodiversity of Mauritania includes 72 woody species and 166 herbaceous species. In the arid environment of Mauritania, coastal and continental wetlands are important harbors of this biodiversity due to the habitat they provide. Across Mauritania, including in wetlands, this biodiversity faces serious

[2] Additional details on the site selection process are included as Appendix 2.

Figure 1. Map of three wetland sites targeted by the project: Tâmourt Bougary, Gâat Mahmoûda and Tâmourt en Na'âj (Source: BRLi)

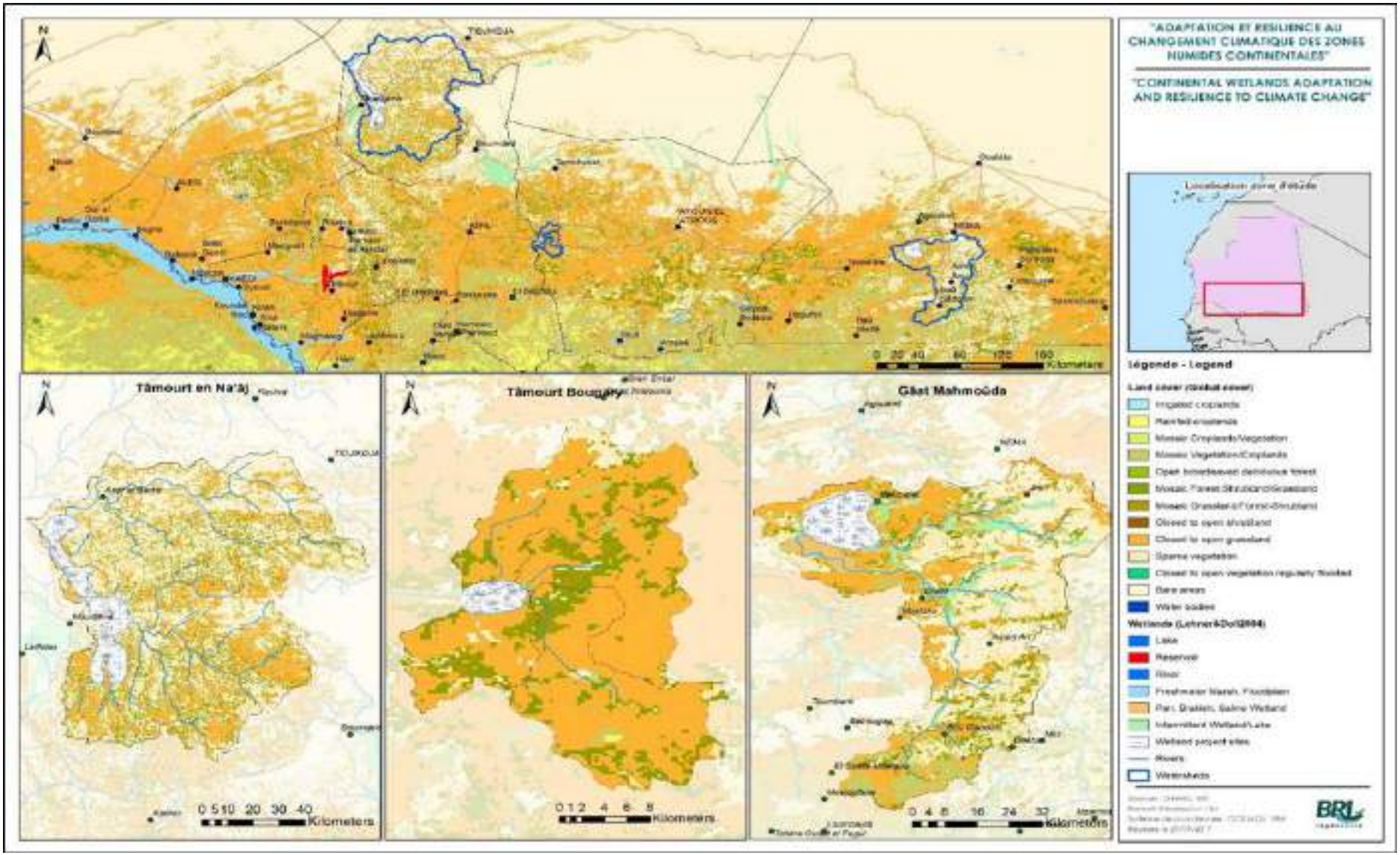
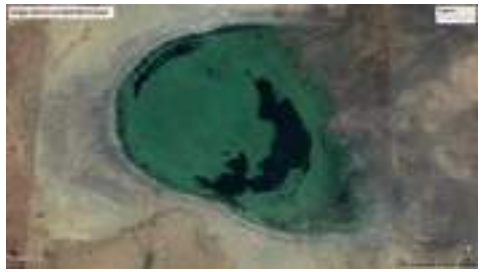


Figure 2. Images of the three wetland sites from the PPG mission in September 2017 (Source: BRLi, Google Earth)

(a) Satellite image of Tâmourt en Na'âj

(b) Satellite image of Tâmourt Bougary



(c) Satellite image of Gâat Mahmoûda

(e) N'beika pond in Tâmourt en Na'âj

(c) Tâmourt Bougary

(a) Panoramic view of Gâat Mahmoûda

(f) A non-permanent tributary of Tâmourt en Na'âj (Matmata)

(d) A non-permanent tributary of Tâmourt Bougary (Metréouka)

(b) A permanent tributary of Gâat Mahmoûda

threats from hunting and the destruction and degradation of habitats (Walther, 2016; Zwarts et al., 2009). These threats and their root causes are laid out in more detail in Section 3.3.

Given their geographic location, Mauritania's wetlands are of global significance because of their use by numerous species of threatened and migratory birds. According to BirdLife International (Shrine et al., 2001), which references a slightly different total number of bird species based on Lamarche's 1988 *Liste commentée des oiseaux de Mauritanie* (i.e., 154), 196 of Mauritania's bird species are residents while 294 show regular seasonal movements. This figure includes 185 Palearctic migrants. Studies show that high numbers of birds that winter south of the Sahara rely on Mauritania's coastal wetlands that form part of the East Atlantic flyway (Aveloitt et al., 2014). These same studies explain that even though the reception capacity of continental wetlands is limited by their temporality and their degree of exploitation, particular continental wetlands host a high number of wintering shorebirds. Among the sites concerned by this project, both Gâat Mahmoûda and Tâmourt en Na'âj have been recognized as Important Bird Areas based on an internationally agreed upon set of criteria to identify areas of global significance for the conservation of bird populations by BirdLife International. These sites are of vital importance for the trans-Saharan migration of certain Palearctic migratory species and are also important wintering areas for a number of rare threatened European species such as the Egyptian vulture and storks (Shine, 2003).

In addition to avifauna, the survival of relict populations of the West African crocodile (Brito et al., 2011; Shine et al., 2001a) and a number of other species of reptiles and large mammals, from the Sudanian domain, depends on the management of these wetlands (Samba, 2009; Samba, 2010).

Climate change

Studies of observational records and models indicate that the Sahel region of West Africa has undergone significant changes to its climate. Year-on-year differences in rainfall patterns and the lack of consistent observational data make it very difficult to discern annual variations in rainfall at the site level, but generally the area has experienced an overall decline in rainfall and an increase in temperature since the 1960s (Zwarts et al., 2009). Over the same time period, the region experienced the Great Drought (1972-1992), suffered temporal desertification and saw rapid changes in land cover and land use.

The same records and models predict that wetland ecosystems in this region will continue to be at significant risk from both anthropogenic and climate related drivers of change in the future (Niang et al., 2014). Multiple Global Circulation Models (GCM) and emission scenarios suggest a temperature rise of 2 to 3°C in the southern region of Mauritania (Fig. 3 & 4). As part of their 3rd National Communication for the United Nations Framework Convention on Climate Change (UNFCCC), Mauritania recognized the potential for a rise of 2.1°C in the average annual temperature at the country level by 2050, and 4.5°C by 2100 (MEDD, 2014b). GCM models also predict a decrease in future rainfall (Fig. 5). Surface seawater temperature is also anticipated to rise, which given its effect on rainfall in Africa, would contribute to the reduction in rainfall (Zwarts et al., 2009). Mauritania has predicted an anticipated reduction in rainfall from 20% to 70% (i.e., in the Adrar Region) depending on the region by 2100 (MEDD, 2014b). In accordance with models, the county also predicts a rise in the ocean level, an increase in the frequency and severity of weather events (i.e., droughts and floods) and a disruption of seasons. Note, GCMs and emission scenarios remain inconclusive as regards rainfall patterns. This is attributed in part to the lack of consistent observational (or input) data.

Despite the difficulties some models have in simulating certain aspects of the area's climate, studies like Mbaye et al (2015) have demonstrated the consistency of models in predicting numerous changes. These include: the increase in temperature, the decrease of precipitation, a decrease in availability of water resources, a decrease of river discharge, a decrease in run-off, actual evapotranspiration and soil moisture. Among the anticipated short-term impacts of these changes are progressive soil erosion, reduced water availability, a reduction in the latitude and productivity of pastoral rangelands and a reduction in arable land.

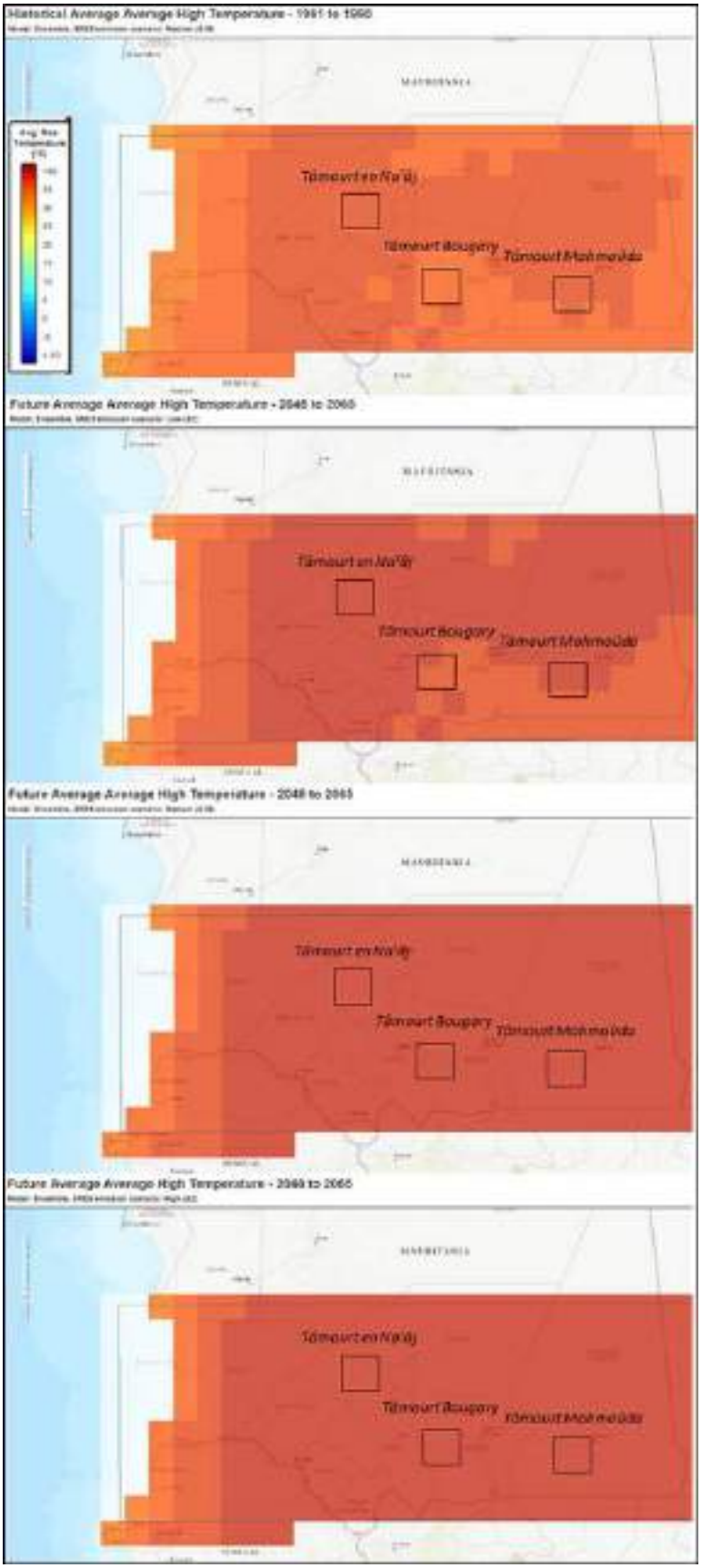


Figure 3. Projected future average high temperature at three project sites based on an ensemble of the eight GCMs available on the Climate Change Knowledge Portal for three SRES: Low (B1), Medium (A1B) and High (A2) (Source: Girvetz et al., 2009).

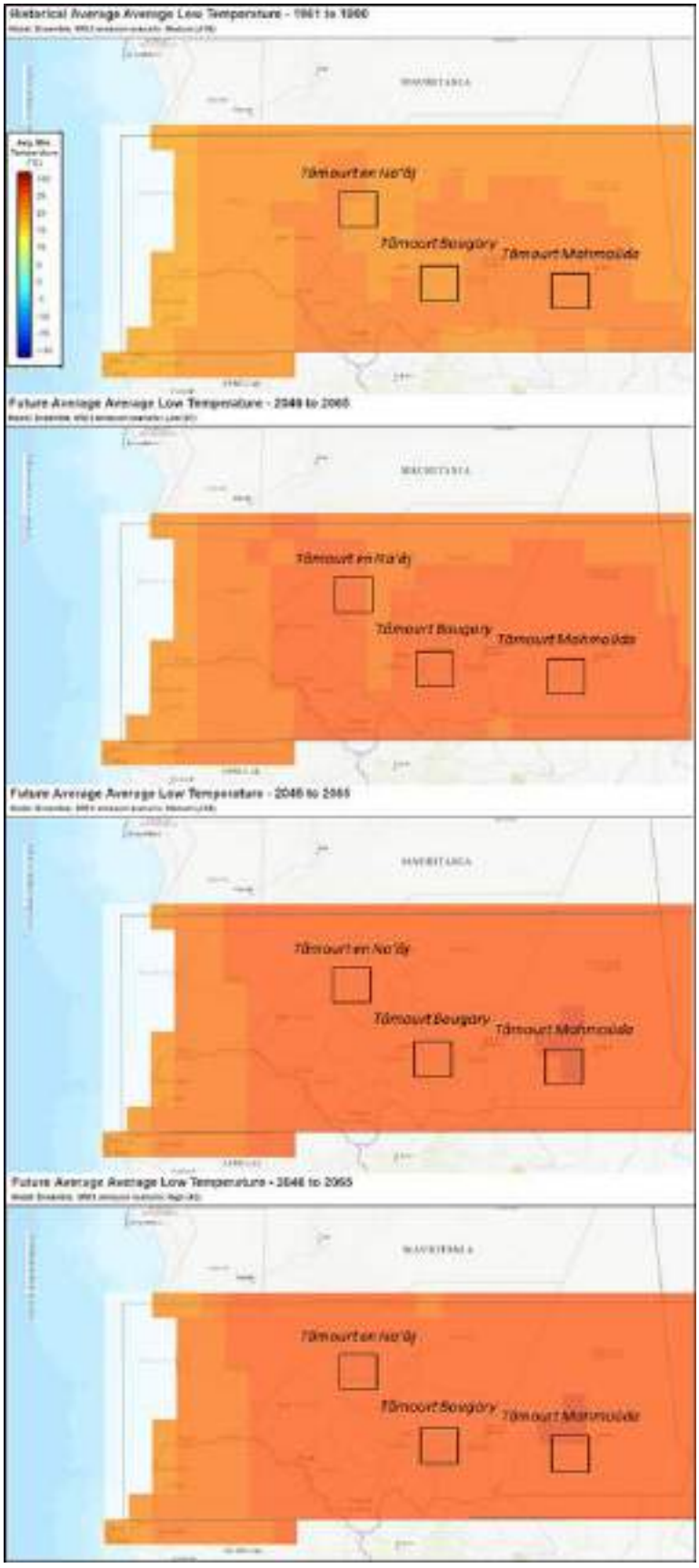


Figure 4. Projected future average low temperature at three project sites based on an ensemble of the eight GCMs available on the Climate Change Knowledge Portal for three SRES: Low (B1), Medium (A1B) and High (A2) (Source: Girvetz et al., 2009).

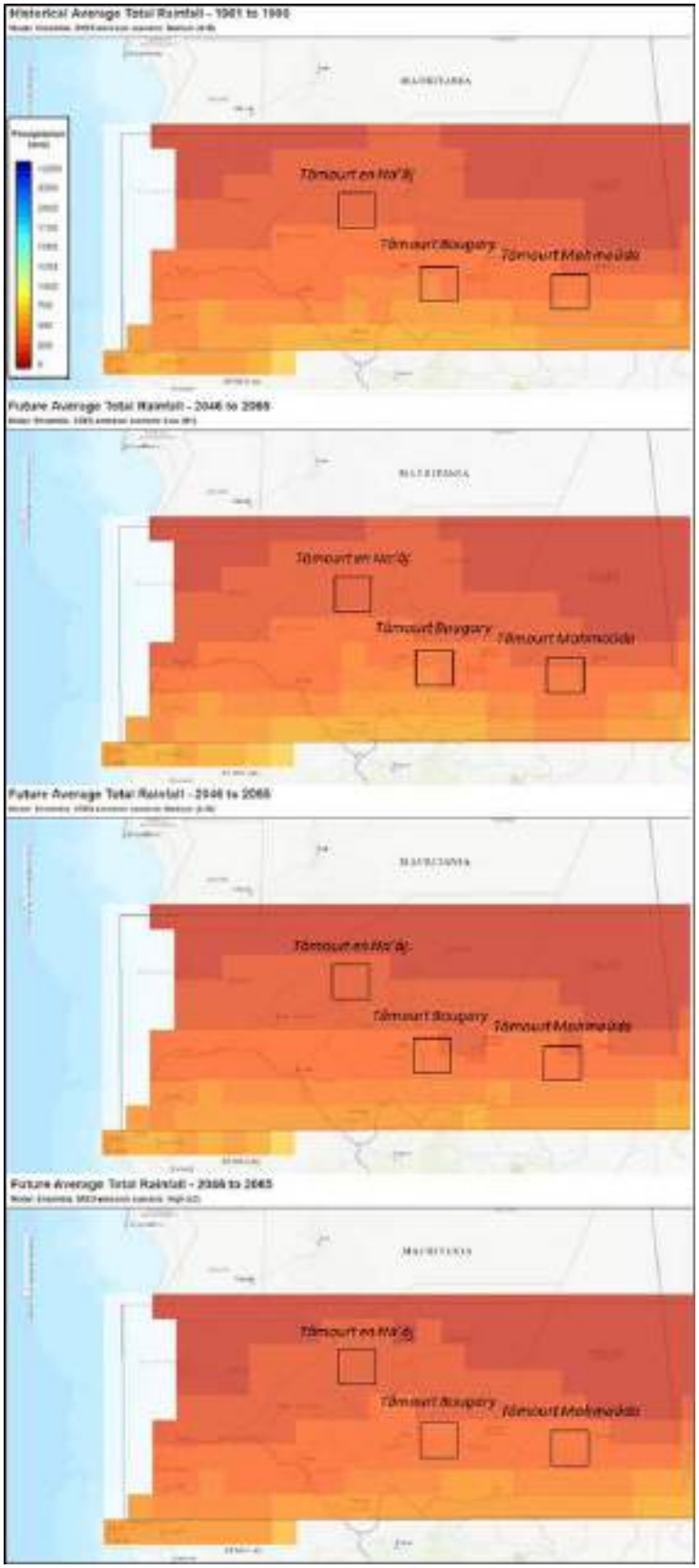


Figure 5. Projected future average total rainfall at three project sites based on an ensemble of the eight GCMs available on the Climate Change Knowledge Portal for three SRES: Low (B1), Medium (A1B) and High (A2) (Source: Girvetz et al., 2009).

Environmental Trends

Diminution and degradation of continental wetlands is an acute problem in Mauritania, where natural ecosystems are being increasingly fragmented and transformed by climate-induced and human-induced factors. Significant reduction in the availability of water and increased siltation has been assessed over the years at the selected project sites and as a result these very specific and highly vulnerable ecosystems are at risk, and their ability to provide important ecosystem services is being compromised. Over recent years, wetland biodiversity has decreased with the disappearance of some species. As described above, climatic changes are anticipated to continue and become more severe in Mauritania.

Human stressors are also anticipated to increase, and according to the Intergovernmental Panel on Climate Change (IPCC) may have a greater impact that climatic stressors (Niang et al., 2014). At a national level, wetlands in Mauritania are threatened by conversion for commercial agriculture, urbanization and mining (MEDD, 2014a). In addition to the threat of conversion, wetlands in eastern Mauritania face more immediate stressors from local communities. Customary law continues to be practiced in eastern Mauritania and allows for open access to wetland resources. This access is a key determinant of local livelihoods; however, it also factors into increasing pressure on wetlands when it is coupled with population growth, the expansion of agricultural activities, the over-exploitation of resources, accelerated sedentarisation and the increase and reduced mobility of livestock production systems. The confusion caused by the simultaneous application of customary law and state law can also trigger conflicts over ownership and access to wetlands.

The demand on wetlands to meet household needs and generate income can be even greater in times of drought. Many of these stressors are compounded by the degradation and loss of vegetation cover, which results in soil erosion and further desertification, and extends the time required to recover from droughts (Zwarts et al., 2009). The latest estimates of deforestation for Mauritania (2010-2015) suggest an annual loss of 3500 (-1.5%) hectares of forest per year (out of a 2015 total of 225,000 hectares – 2% of the country's total) with an additional loss of 4000 (-0.1%) hectares of other wooded areas (out of 3,040,000 hectares area – 2.9% of the country's total area) annually (FRA, 2015). Salinization and pollution of wetlands due to poor management practices has also been seen in some areas of Mauritania, especially in the irrigated perimeters of wetlands. Together, these pressures can cause significant changes to the ecology and functioning of continental wetlands. More specific details on the trends observed at the wetlands selected for this project can be found in Section 3.4. This information was collected through stakeholder consultation during project preparation.

3.1.2 Socio-economic context

Mauritania's population in 2017 was estimated to total 4,420,000, with a strong rate of annual growth of 2.8% (World Bank, 2017). The gross national income (GNI) per capita in 2016 was USD 1,120 (World Bank, 2017). According to the 2016 Human Development Index[3], Mauritania falls within the category of "low human development", ranking 157 out of the 188 countries assessed (UNDP, 2016). Historically, Mauritania's economy was based on farming and livestock rearing, making it highly vulnerable to climatic fluctuations. In the 1970s, 1980s and 2000s, persistent droughts negatively affected the agriculture and livestock sectors, decreasing per capita income and increasing dependence on external food supplies. These droughts also contributed to a massive rural exodus, accelerated urbanization, and significant economic and social changes. In 1960, 93% of Mauritania's population was classed as rural. As of 2017, that percentage is estimated to have dropped to 39% (FAOSTAT, 2017). Today the 61% of Mauritania's population that is classified as urban is principally distributed in and around the capital Nouakchott, as well as in other coastal centers (e.g., Nouadhibou) and smaller population clusters along the Senegal River and the southern boundary with Mali and Senegal. In these urban areas, society is increasingly dominated by the tertiary sector, extractive industries (including mining and oil) and maritime fishing. This transformation provides important opportunities for Mauritania to

[3] The Human Development Index (HDI) is a composite index that takes into consideration life expectancy, education, and per capita income to rank countries into four tiers of human development.

continue to grow economically, but leaves the country's overall economy sensitive to international food and extractive commodity prices.

Despite this national transition from a more nomadic, agro-pastoral society to an increasingly sedentary economy, the primary sector (agriculture, livestock, fisheries, forestry) remains a pillar of Mauritania's economy. In 2016 the World Bank reported that agriculture contributed 27% of the annual GDP, with the remainder coming from industry (30%) and services (43%). In rural areas, where the population is primarily composed of nomadic and semi-nomadic pastoralists and sedentary agro-pastoralists, the dependence on the primary sector is even more pronounced. Over the past two decades, Mauritania has made considerable progress reducing the overall rate of poverty (down from 51% in 2000 to 31% in 2014); however, there are large disparities between different regions. With 74% of poor people residing in rural areas, poverty remains an acute rural phenomenon. A review of Mauritania's 2000-2015 Poverty Reduction Strategy (PRS), listed among the factors found to hampering poverty reduction in rural areas: (i) an almost complete dependence of the people on agro-pastoral activities, which are contingent on climatic conditions; (ii) the lack of water resources; (iii) lack of access for the poor to land; and (iv) isolated areas of production and the absence of infrastructure to facilitate the marketing of produce (PSRP, 2011).

In recognition of the role decentralized stakeholders play in economic and social development process, Mauritania has committed to deepening decentralization and building the capacity of decentralized authorities (PRSP, 2011). Administratively, the country is divided into 15 Wilayas (regions), which are subsequently divided into 52 Moughatâas (departments) and 250 communes (municipalities). Each Wilaya is under the authority of a Wali (governor), while Moughatâas are managed by Hakems (prefect). Communes are managed by elected mayors with the assistance of municipal councils. The smallest administrative units are villages or camps. The wetlands being targeted through this project are located in the Wilayas of Assaba, Hodh Ech Chargui and Tagant. Collectively 53 localities, with over 20,000 residents, rely on these wetlands directly (Table 1).

In the rural areas of south-eastern Mauritania where this project will focus its field level interventions, incomes are largely subsistence level. In these areas, isolated continental wetlands are especially important to proximate communities as nearly everyone relies on direct exploitation of these multiple-use resources for food security and livelihoods. These wetlands are favored above other areas by local populations because of their higher productivity and the potential they provide for agriculture, watering and feeding of livestock, hunting and the collection of other natural resources. The practice of customary law, which provides open access to wetland resources, is a key determinant of local livelihoods. As explained above, Shrine and Dunford (2016) showed that when managed as multiple-use resources for pastoralism, agriculture and biodiversity, these wetlands are better adapted to a highly variable climate and have the potential to play a vital role in communities the adaptive capacity and resilience of local communities.

The three wetlands targeted by this project are all multiple-use systems (Fig. 6). Among the key production systems practiced by local communities are the following:

Livestock rearing (pastoralism)

Considered a part of agricultural production, livestock rearing (cattle, sheep, goats, camels, donkeys, horses) is the principal livelihood activity of the rural sector, practiced by nomadic and semi-nomadic pastoralists as well as sedentary agro-pastoralists. The supply of milk to herders and their families throughout the year also has a considerable monetary and nutritional value. As a mobile production system livestock rearing provides a valuable means to take advantage of resources that vary over time and space. Today, pastoralism in Mauritania is vulnerable and under pressure due to multiple factors. These include: a decrease in natural pastureland due to bushfires; the displacement of pastureland towards the south; growing competition between different users of agricultural and pastoral lands; the obstruction and disappearance of transhumance routes; a shortening of the duration of transhumance and the prolonged concentration of livestock around permanent water points.

Amidst these pressures, the surface water in continental wetlands provides herders an important means of watering their animals during the wet season. These wetlands also provide high nutrient pasture. Shrine and Dunford (2016) explain that while there is limited available hard data, the trend of sedentarisation of pastoralists continues due to social and environmental pressures, development interventions and national policies. Wetlands provide ideal places to settle in part because of the water

and grazing opportunities they supply to pastoralists. In 2002, Shrine found that out of 244 wetlands inventoried in eastern Mauritania, 97% of the wetlands were used for watering livestock.

Agriculture (rain-fed and flood-recession) and market gardening

Agriculture in Mauritania is greatly influenced by the geographic context and remains a high-risk activity because of the high levels of inter-annual variability in rainfall. Fertile and exploitable land is limited and the area available for agriculture depends on annual rainfall and the volume of annual floods. Over the past decades many wetlands in Mauritania have been affected by the growth in irrigated agriculture as part of efforts to meet the cereal needs of the country. The main types practiced in the wetlands concerned by this project are rain-fed, flood recession and market gardening. Among the key crops cultivated are: sorghum, millet, maize. Mixed in with these main crops are other crops such as cowpeas, water-melon and groundnuts. Vegetable gardening is a newer agricultural activity which was largely introduced by development projects as an additional source of revenue. When sufficient water is available, gardening provides an important supplementary activity. During project preparation, stakeholders emphasized the importance of the role of women in market gardening.

Collection of forestry products, wild foods and other botanical and other natural resources

All wetland sites proposed for intervention in the scope of this project are used by local stakeholders for the collection of a wide variety of natural resources. These include: timber for firewood, the production of charcoal and construction; banco or clay for brick making; and wild foods and medicinal plants. Some of these activities (e.g., the collection of wild foods, sale of forestry products) can be particularly important to food security and income generation in years when agricultural yields are low. Among the non-timber forest products collected at the proposed project sites are: the tubers of Nymphaea lotus; the fruits of *Ziziphus mauritiana*, *Balanites egyptiaca*, *Hyphaene thebaica* and *Sclerocaria birrea*; the seed pods of *Acacia nilotica*; and Gum Arabic from *Acacia senegal*. The collection of these botanical products plays an especially important role in the livelihoods of vulnerable groups (Table 2 in Section 3.4).

Fisheries

While most focus on fisheries in Mauritania is geared towards coastal areas and the economic contribution of this sector, inland wetlands also represent important opportunities to develop sustainable fisheries. The potential of fisheries in terms of income generation and food security has been developed and is being exploited to different degrees by distinct groups of stakeholders at each of the three project sites. The presence of Malian fishermen in two of the sites has provided an opportunity for authorities to generate proceeds but has also caused conflicts with local community members. And certain sites have reported a decline in fisheries (see Section 3.4). The establishment of improved fisheries governance systems and the development of fishery management plans have been hindered by a lack of awareness-raising and insufficient human and financial resources.

Figure 6. Images of production activities at the three wetland sites from the PPG mission in September 2017 (Source: BRLi)

(a) Fencing of flood recession agriculture field in Gâat Mahmoûda

(b) Fish being smoked in Gâat Mahmoûda

(c) Cattle at Tâmourt Bougary

d) Irrigated and fenced field in N'beika pond (Tâmourt en Na'aj)

Trends related to socio-economic factors

The transformation of natural ecosystems in Mauritania is an acute phenomenon. This transformation is contributing to soil degradation, salinization of agricultural land, siltation of waterways and desertification. These issues remain serious despite the efforts of many stakeholders to combat siltation and stabilize dunes. The increased trend towards more sedentary production renders pressures more severe around wetlands and human settlements. In these areas, the growth in the number of livestock can lead to over pasturing and the degradation of ecosystems. Population growth also increase the demand for food stables, which contributes to the exploitation of poor soils and the further transformation of natural vegetation. If fertilizers and pesticides are not well managed, pollution can become an additional threat. Improved practices are important to improve productivity, capture more rainwater, reduce erosion, increase soil organic matter and replenish nutrients.

Population pressures also contribute to the overexploitation of natural resources. Illegal and uncontrolled hunting and fishing have a negative impact on the abundance and status of faunal species. The demand for fuelwood is also intensified as populations increase. Finally, non-timber forest products are under pressure from human activities; the annual production of gum Arabic (Acacia Senegal) has decreased significantly due to over exploitation and the effects of persistent droughts which have contributed to high rates of mortality.

Climate change

In studies from a range of countries, climatic variability and change has been shown to interact with, and sometimes compound, existing livelihood pressures in rural areas (Niang et al., 2014). As described above, projections predict eastern Mauritania will become drier and hotter. The region is also likely to see an increase in the frequency and severity of climate-related disasters. Based on these same climatic scenarios, it is expected that the impacts of climate change on the agricultural sector in Africa will be significant and have corresponding impacts on the incomes and well-being of rural communities (Niang et a., 2014). Stakeholders consulted during project preparation reported that the agriculture in

project sites is already impacted by decreasing yields and the diminution of arable land, and requires additional adaptation measures to improve resilience and productivity.

In the case of pastoralism, climate change and the associated drying up of water sources, is expected to make the provisioning of water more difficult and costly. In addition, changes in rainfall may affect the distribution and productivity of pastureland, as well as the productivity of fodder. These changes, when combined with the risk of elevated levels of mortality due to severe weather events, have the potential to drive livestock and meat prices higher and contribute to declining incomes for pastoralists. They could also lead to changes in the composition of herds (i.e., replacement of cattle by small ruminants and camels) and further sedentarisation of livestock breeders. Finally, there is the potential that livestock rearing will increase in semi-arid areas as these areas become more marginal for agriculture (Niang et al., 2014).

In addition to the changes anticipated in agriculture and pastoralism, communities facing climatic variation may resort to over-exploitation and mal-adapted practices to try and meet their needs. These practices, which degrade habitats and deplete biodiversity, have the potential to compound the direct impacts of climate change on these resources. As the climate changes, adaptive management that establishes or modifies biodiversity management practices will be important to restore values of degraded wetlands, and build their resilience to ensure sustainability.

3.1.3 Institutional, sectoral and policy context

Environment and sustainable development

In March 2017, Mauritania validated a National Strategy for Accelerated Growth and Shared Prosperity (SCAPP) that details a framework of country's long-term development policies and strategies to reach its vision for 2030. The SCAPP includes three strategic areas: (i) promote strong, sustainable and inclusive growth; (ii) develop human capital and access to basic social services; and (iii) strengthen governance in all its dimensions. The SCAPP addresses the environment and sustainable development under the first area and environmental governance under the third.

A National Strategy for Sustainable Development (SNDD) serves as a logical and strategic framework that allows for the coherence and synergy between programs, plans and sectoral policies from a sustainability perspective. As such it integrates natural resource management and the environment with other sectors of economic and social development. Operationally it is articulated through the National Strategy for the for the Environment and Sustainable Development (SNEDD) and the National Action Plan for the Environment and Sustainable Development (PANEDD) that cover the period 2017 to 2021. The previous SNDD and its operational plan expired in December 2016. The new SNEDD and PANEDD were developed to: (i) take into consideration the current environmental trends and issues of the country and (ii) put the strategy in line with new policy directions at national and international level, in particular international conventions ratified by the Mauritania and national objectives of sustainable development. It ensures environmental issues are integrated and taken into account in Mauritania's development policies and strategies (e.g., the National Plan of Health Development, the National Food Security Strategy, the National Fisheries and Maritime Economy Strategy, the National Strategy for the Development of the Agricultural Sector) and details environmental and compliance standards.

The second strategic axis of the PANEDD is focused on establishing integrated and sustainable management of natural resources and biodiversity. It promotes the establishment of decentralized, local management of natural resources, and specifically mentions the transfer of responsibility for management to local bodies. It includes specific objectives promoting integrated water basin management, as well as the rehabilitation and integrated and sustainable management of wetlands. It highlights the importance of reinforcing the resilience of vulnerable populations in the face of climate change, and includes specific activities concerned with managing the impacts of climate change within important production systems (i.e., agro-pastoral, wood energy, non-timber forest products, fisheries). The PANEDD also highlights the importance of improving monitoring of the environment and associated information management.

Environment and natural resource management

The legal framework for the environment is laid out in the Code of the Environment (Law No. 2.000-045 of July 26, 2000). Rights and conditions for access to resources in Mauritania are mandated through multiple codes, including the Water Code (Law No. 2005-030 of February 2, 2005), the Forest Code (Law No. 2007-055 of September 18, 2007, which replaced Ordonnance No. 97-007 of January 20, 1997) and the Pastoral Code (Law No. 2000-044 of July 26, 2000). These laws regulating resource rights and use, do not differentiate users by gender or ethnic group. However, it is important to note that when it comes to the management of specific resources and land tenure, rural communities in most areas continue to observe customary law and traditional systems. In these systems, which are largely based on Sharia, social differentiation plays a significant part in determining the roles of various groups in production systems and the sharing of benefits, as well as representation in governance systems. The legal framework established through these codes and associated decrees aligns with the country's broader objectives for decentralization (see below). For example, the Forest Code allows for the delegation and transfer of management of forest resources to local authorities (i.e. communes) for up to ten-year renewable periods. The commune then has the possibility of delegating the management to a dedicated local association. The transfer of this mandate for decentralized natural resource management (DNRM) is subject to the establishment of local conventions (Box 1).

Box 1. The legal framework for the transfer of management of natural resources from the State to communes and other local stakeholders

Law No. 2005-030 on the Water Code

Article 47 : *"Les communes exercent la maîtrise d'ouvrage publique à l'égard des aménagements, installations et équipements relevant de leur compétence dans le domaine de l'eau qu'elles tiennent, selon les dispositions de l'article 2 de l'ordonnance n°87-289 du 20 octobre 1987, lorsque ces aménagements, installations ou équipements ont été acquis ou réalisés par les communes, directement ou par l'intermédiaire d'un maître d'ouvrage délégué, ou lorsqu'ils leur ont été transférés par l'Etat.*

Les communes peuvent déléguer la gestion des ouvrages dont elles ont la maîtrise à des personnes publiques (morales) ou privées, conformément à la législation en vigueur et dans le respect de la procédure prévue".

Law No. 2007-055 on the Forest Code

Article 14 : *"Les collectivités locales peuvent, sur demande et après avis favorable du service chargé des forêts, affecter la gestion des ressources naturelles des forêts ou parcelles de forêts aux personnes physiques ou morales dans le cadre d'une convention locale".*

Decree No. 2009-104 on the application of Law No. 2007-055 on the Forest Code

Article 2 : *"A l'exception du domaine forestier classé de l'Etat, l'exercice des droits d'exploitation des forêts et des terres à vocation forestière peut être transféré pour une durée ne dépassant pas dix ans renouvelables aux collectivités locales."*

Article 8 : *"Les collectivités locales peuvent déléguer la gestion des droits d'exploitation à des particuliers, notamment les associations impliquées dans la gestion des forêts et des terres à vocation forestière."*

Law No. 2000-044 on the Pastoral Code

Article 21 : *"Les infrastructures hydrauliques et autres points d'eau à vocation pastorale sont déclarés comme tels par arrêté de l'autorité administrative et après avis des services compétents, du conseil municipal de la commune concernée et des entités représentatives des éleveurs et des agriculteurs."*

Article 26 : *"La construction d'ouvrages destinés à la collecte des eaux superficielles est soumise à une étude d'impact de ces ouvrages sur le pastoralisme. Cette étude sera entreprise par les services compétents de l'Etat. L'autorisation de réaliser lesdits ouvrages sera accordée après avis du conseil municipal concerné et des entités représentatives des éleveurs et des agriculteurs."*

Article 27 : *"La concession de la gestion des ouvrages publics hydrauliques situés en zone pastorale sera accordée en priorité aux entités d'éleveurs traditionnellement utilisateurs après avis du conseil municipal concerné."*

Decree No. 2004-024 on the application of Law No. 2000-44 on the Pastoral Code

Article 17 : *"Les conventions locales font foi entre utilisateurs directs devant les institutions municipales et administratives".*

Article 18 : *"L'administration doit favoriser l'émergence de conventions locales et arrangements au moyen de concertations avec les groupes concernés".*

Environmental governance in Mauritania is under the direction of the Minister of the Environment and Sustainable Development (MEDD). Raised to the level of a ministry in 2013, the organization and central administration of the MEDD is governed by Decree No. 057/2014/PM. Based on this decree, the MEDD has multiple missions and mandates: (i) a sectoral mandate to assure the protection of nature and the management of protected areas and (ii) a transversal mandate to assure and monitor the implementation of climate change and other sustainable development and environmental policies across different public sectors. The first mandate is managed by the Direction for the Protection of Nature (DPN) and the Direction for Protected Areas and the Coast (DAPL). The second mandate falls within the framework of the SNDD and involves: (i) combatting the negative impacts of climate change; (ii) the regulation and control of environmental legality; (iii) planning, intersectoral coordination the environmental data; and (iv) combatting pollution and environmental disasters. Regional Delegations for the Environment and Sustainable Development (DREDD) have been created to implement the mandate of the MEDD. The DREDD are delegated to operate at the level of the Wilaya and under the authority of the Walis. The ability of these devolved administrative technical services to carry out their mandate is limited by a lack of sufficient material, financial and human resources.

The National Programme on Climate Change Coordinating Unit (CCPNCC), established by Order No. 1364 on March 24, 2009, is the national structure for the implementation of the United Nations Framework Convention on Climate Change (UNFCCC). It is headed by the UNFCCC Focal Point and comprises each of the central branches of the MEDD, represented by a director. The integration of climate change within sectoral policies is one of its main tasks. The CCPNCC liaises with focal points on climate change in other ministries to advance this objective.

Water management

The management of surface and groundwater resources in Mauritania are under the responsibility of multiple institutional actors primarily concerned with the provisioning of water and sanitation. As part of the decentralization process (Article 2 of Ordinance 87-289), the responsibility of supplying drinking water and sanitation were conferred to the communes. The Water Code of 2005 and its implementing decree (No. 2007-107 of April 13, 2007) further stipulate that: (i) local authorities have the right to exercise their authority to contract water and sanitation services over their territories; (ii) the management of water services for localities of over 500 individuals is mandatorily conferred to public or private delegates recruited through a bidding process managed by the Regulatory Authority (ARE); and (iii) three types of public service delegation are recognized (i.e., stewardship, lease and concession). Two additional national policies or strategies concerned with sanitation were promulgated in 2011 (i.e. the National Policy for Liquid Sanitation (PNA) and the National Sanitation Strategy (SNA).

The primary institutional actors associated with water management are:

- The Ministry of Water and Sanitation (MHA) is in charge of the management of water resources as well as water and sanitation, operates through three operational directions: the Direction of Hydraulics (DH), the Direction of Sanitation (DA) and the Direction for Hydrology and Dams (DHB).
- The National Office for Rural Water Services (ONSER) oversees production, transportation and distribution of drinking water in rural areas.
- The National Water Distribution Company (SNDE) oversees production, transportation and distribution of drinking water in urban areas.
- The National Office for Sanitation (ONAS) is responsible for the establishment and the management of sanitation, wastewater and storm water systems, including water treatment stations.
- The Regulatory Authority (ARE) is responsible for regulating public services associated with water, implementation of procedures to delegate responsibilities and the monitoring of delegates.
- Regional directorates (DRHA) are responsible for the planning and coordination of water and sanitation activities at the level of the Wilayas.
- Communes are responsible for overseeing services on their territories for investments that they finance, but do not have the necessary technical or financial means to fully assume their responsibilities.

Biodiversity management

Mauritania's priorities for biodiversity are laid out in its National Strategy and Action Plan for Biodiversity for 2011-2020 (NBSAP). The strategy's vision is to preserve, restore and grow living diversity in all areas of Mauritania; its objective is to maintain, in the long-term, the functioning of ecosystems and their capacity for adaptation and evolution. The plan is structured around six strategic orientations with 14 objectives. Among the objectives that relate directly to this project are the following: protect spaces and their species, preserve ecosystems and their functioning, reduce pressures on biodiversity, guarantee sustainable use of biological resources, assure equitable benefit sharing from the use of biodiversity, assure coherence of policies, and reinforce governance as regards biodiversity. The strategy also recognizes the importance of different stakeholders (i.e., State, communities, civil society, donors), playing their roles in a coordinated fashion. In addition to the national strategy on biodiversity, hunting and the protection of individual species are regulated through additional laws, including the Code on Hunting and the Protection of Nature (Law No. 97-006 of January 20, 1997) and decrees (e.g. Decree No.83-159 of July 4, 1983 protecting certain herbaceous species).

Wetlands management

The Ramsar Convention entered into force in Mauritania on February 22, 1983. Since then Mauritania has designated four sites as Wetlands of International Importance (Ramsar sites). In 2013, Mauritania launched the process to develop a National Strategy for the Conservation of Wetlands (SNCZH). With support from the IUCN and the Ramsar Convention Secretariat, a finalized national strategy was produced by the MEDD and approved by the Government in October 2014. Its objective is to conserve, restore and sustainably use wetlands and their associated biodiversity, with the aim of ameliorating the conditions of local populations and guaranteeing for future generations sufficient resources for the sustainable development of the country (MEDD 2014a). It has twelve strategic axes: (i) putting in place a system of governance, (ii) putting in place a legal framework specific to wetlands, (iii) preserving and restoring wetlands, (iv) regulating access to wetland resources, (v) improving the management of watersheds, (vi) developing sustainable practices for agriculture and pastoralism in wetlands, (vii) animating and implementing a strategy to conserve wetlands, (viii) reinforcing institutional and human capacity, (ix) reinforcing technical and scientific capacity, (x) promoting sustainable techniques for the exploitation of resources, (xi) developing income generating activities that are compatible with the management of wetlands and (xii) putting in place a sustainable financing mechanism. The strategy was designed to be integrated into national sectorial strategies, including: the then-existing Poverty Reduction Strategy and National Action Plan for the Environment (since updated via the SNEDD); national land use planning; the national adaptation program (PANA-RIM); and the integrated water resources management (IWRM) agenda as detailed in the Water Code.

In Mauritania, the management and conservation of wetlands is under the direction of the DAPL. However, multiple ministerial departments may be implicated (e.g., Ministry of Water and Sanitation - MHA, Ministry of Agriculture – MA, Ministry of Livestock – ME, Ministry of Fisheries and Maritime Economy - MPEM).

Climate change and adaptation

Mauritania ratified the UNFCCC in 1994 and the Kyoto Protocol in 2005. The SNDD serves as the national framework for the country's politic on climate change. Operationally it is articulated through the SNEDD and the PANEDD. Prior to these plans, Mauritania elaborated a National Adaptation Programme of Action to Climate Change (NAPA-RIM) in 2004. As explained above, the MEDD serves as Mauritania's focal point for the UNFCCC and has coordinated the preparation of three National Communications (NC) submitted to the UNFCCC in 2002, 2008 and 2014. As detailed in the Intended Nationally Determined Contribution (INDC) published in the lead up to the 2015 United Nations Climate Change Conference, Mauritania's national agenda of ambitions as regards adaptation through 2030 includes a series of 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, particularly in the rural domain, in the face of climate change;

- 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;
- The rehabilitation and integrated and sustainable management of humid zones to combat the effects of climate change; and
- The reinforcement of capacities to manage and monitor continental fisheries.

Continental fisheries

In 2015, the Ministry of Fisheries and Maritime Economy (MPEM) elaborated a new strategic framework for 2015-2019 to ensure the sustainable development of fisheries, a key sector for the national economy. Recognizing the potential for the continental fisheries to contribute substantially to food security and employment, the strategic framework includes an axe dedicated to the development of continental fisheries and aquaculture. The strategy specifically proposes to: develop and implement a regulatory framework for continental fisheries; strengthen and adapt the institutional framework relating to the promotion and development of aquaculture and continental fisheries; and adopt development plans specific to continental fisheries and to aquaculture. In relation to this project, the strategy also highlights the importance of deepening knowledge and know-how related to continental fisheries, and developing projects in rural areas that will support increasing the productivity of inland fisheries.

Decentralization

Mauritania engaged in a process of decentralization in 1988, and in 1995 adopted a Declaration of Municipal Politics. As an underlying foundation for this process, municipalities were recognized as territorial communities endowed with moral personality and financial autonomy (Ordinance No. 87-289 of October 20, 1987). Since then, numerous municipal elections have been held; however real challenges continue due to a lack of human and financial capacity. In August 2017, a constitutional referendum was held to look at two draft laws revising the provisions of the 1991 constitution and its modification texts. The first of these draft laws dealing with changes to institutions would abolish the Senate and promote the regionalization of the country. It proposes the creation of a new category of territorial authority called Regional Councils. These councils would be elected by the people and would serve to promote regional development and planning. As stated above, the concept of decentralization has been integrated into the codes mandating rights and conditions for access to resources in Mauritania: the Water Code, the Forest Code and the Pastoral Code.

Land and resource rights

Rights to own land in Mauritania are laid out in the 1983 land reform ordonnance (Ordinance 83-127 of June 5, 1983). Rights and conditions for access to resources are mandated through multiple codes, including the Water Code, the Forest Code and the Pastoral Code. These laws regulating resource rights and use do not differentiate users by gender or ethnic group. However, as is the case for land tenure, rural communities in most areas continue to observe traditional systems when it comes to the management of specific resources. In these systems social differentiation plays a significant part in determining the roles of various groups in production systems and in the sharing of benefits. It can also play a role as regards representation in governance systems. Contradictions between modern state law and customary law can create confusion over rights of ownership and access to wetlands.

The legal framework in Mauritania (i.e., legal codes and associated decrees) allows for the transfer of the mandate for management of certain natural resources to local communes, and subsequently community-based associations, through the establishment of local conventions. This project will support local communities to develop representative associations for the local and collective management of natural resources (i.e., ALGRN). The program will support the process to create said associations and their local conventions, working to assure that these bodies are representative and that vulnerable groups are part of decision-making processes to elaborate resource “rules”. The program will also work directly with vulnerable groups to assure their understanding of their rights.

Gender Equity

Mauritania's constitution asserts the equality of men and women, and proclaims that all citizens, regardless of origin, race, gender or social condition, are equal under the law and have the same rights to participate in political and public life. The country has ratified a number of human rights conventions, including the Convention on the Elimination of All Forms of Discrimination Against Women (CEDEF). Despite these assurances and the development of a series of non-discriminatory national strategies, the country has recognized that serious discrepancies exist between the status of men and women in the political, economic, social, cultural and legal sectors. In response, the country developed a National Strategy for the Institutionalization of Gender Equity (SNIG) in 2011. In alignment with this strategy, Mauritania has worked to improve women's access to education and training, and increase their economic power. The country has also implemented awareness raising campaigns against discrimination. These actions have resulted in a marked improvement in the political visibility of women, with increased representation in politics and other administrative bodies (including local governance bodies associated with natural resource management); however, their economic visibility remains low and Mauritanian society remains affected by serious discrimination based on cultural traditions and attitudes.

In the context of rights and access to land and resources, Mauritania's 1983 land reform ordonnance recognized women as being equal to men and formally provided women the right to own land. The current formal land registration system also allows smallholder farmers in rural areas, including women, to register their property as common territory in the name of a cooperative. Despite this legal framework, a World Bank (2015) case study on women's access to land in Mauritania, commissioned by the Community of Practice of Finance Ministers on Gender Equality, found that less than 8% of the total number of deeds registered at the national level were held by women. This percentage was even lower in rural areas where most of the population still lives according to a common system of customary law. Under the informal customary system, male landowners with large holdings are responsible for ensuring community members, including vulnerable groups such as Haratine and women, have access to land; however, this system is not recognized by the state, which means land tenure is not secure (see Section 3.4). Apart from individual deeds, permanent land titles have been issued to women's cooperatives in multiple Wilayas, with more pending. The case study explained that "Strengthening the role of the cooperative has been favorable to women because it affords them access to larger plots of land and credit, and increases their ability to organize in order to receive government and donor support. Women's cooperatives have expressed a strong interest in acquiring definitive titles for the land they work to secure their investments" (pg. 7).

The case study, undertaken based on recommendations in the Land Governance Framework Report (LGAF), concluded:

> In practice, women have not acquired the same rights and duties as men in the Mauritanian land tenure system. While women's rights are formally recognized in the new system, customary law and other traditions persist. There is a definitive need for affirmative action on the part of government to make up for the past exclusion of women from landholding, especially as Sharia and the new law both recognize the right of women to own land. The important finding here is that many women own land in both urban and rural areas, but rarely have access to property by succession. There has been a slight improvement in women's access to land, particularly through irrigated perimeters. But the underrepresentation of women in decision-making spheres at the national and local levels remains a major handicap for women. This is particularly reinforced by the fact that most women are not familiar with the law and do not understand their rights (pg. 11).

Additional details on the roles and rights of women in the context of this project are found in section 3.4.

Poverty and social protection

In 2013, TADAMOUN (Decree No. 048-2013 dated March 28, 2013) was created as a national agency out of the recognition of the need to improve the living conditions for a group of Mauritanian society which has suffered from a disastrous social and economic history. Its primary mission revolves around three components: (i) the fight against the after-effects of slavery, (ii) the reintegration of Mauritanians repatriated from Senegal and (iii) the fight against poverty. As such, TADAMOUN is responsible for

promoting and implementing programs aimed at the eradication of poverty across Mauritania and coordinates all State policy as regards social protection.

Food security

In 2012, the Ministry of Economic Affairs and Development (MAED) elaborated a National Strategy for Food Security through 2015 with a vision through 2030. The global objective of the strategy is to permit populations, in particular the most vulnerable, to have, at all times, physical and economic access to sufficient, healthy and balanced food. The strategy recognizes the multidimensional and multi-sectorial nature of food security and has five specific objectives:

- Promote a rural and peri-urban economy that is cost-effective, diversified and adapted to climate change;
- Improve trade circuits and intra-national, cross-border and regional trade;
- Sustainably improve the access of vulnerable groups in rural and urban areas to healthy and balanced food;
- Strengthen the prevention and management of food crises at the central and decentralized levels; and
- Promote a good governance of food security in a process of decentralization and local development.

The strategy is framed around four strategic pillars: (i) management of land and water; (ii) access to markets, (iii) food supply; and (iv) agricultural research.

3.2 Global environment problem

Over the past several decades, the continental wetlands of Mauritania have seen progressive degradation and diminution because of climatic and anthropogenic factors. This diminution is an acute problem that has a direct and negative impact on the aquatic, terrestrial and migratory species that depend on these wetland habitats as well as the vital ecosystem services these areas provide. As key determinants of local livelihoods, the diminution and degradation of wetlands also threatens and has direct consequences on the food security and incomes of local people. Restoring and improving the resilience of wetlands and building the adaptive capacity and resilience of local communities is imperative to protect these globally significant habitats and improve the well-being of people who depend on them.

The principal environmental problems facing the project sites have been identified as the following:

- ***Reduction in the availability and quality of water resources.*** Mauritania has seen a decline in the availability and quality of its water resources due to both human-induced and climate-induced factors. The degree of this decline is difficult to quantify given the lack of adequate monitoring of the resources, but among the impacts of this problem are the drying up of wetlands, the siltation and pollution of surface water, loss of biodiversity and a decline in the functioning of ecosystem services. It also impacts social and economic factors, forcing people to adapt their lifestyles and livelihoods.
- ***Soil degradation and desertification.*** Multiple factors (e.g., drought, erosion, poor land use practices) have compounded each other to cause acute problems of soil degradation and desertification. The environmental, economic and social impacts of these problems have been severe, and include a loss of biodiversity, reduced livelihoods and high levels of urbanization.
- ***Degradation and loss of natural vegetation cover.*** The regression of the vegetation cover due to both climatic and anthropogenic factors has increased desertification and contributed to the disappearance of species. Millions of livestock in the Sahel put huge grazing pressure on the pressure, removing vegetation (including seeds and fruits) that used to be food for other wild species. Vegetation cover is also impacted by the increasing demands for energy and land for agriculture. While afforestation can help to mitigate some impacts of this trend, the loss of indigenous forests has an impact on species – especially Palearctic migrants that tend to avoid non-indigenous tree species (Zwarts et al., 2009). The loss of natural vegetation has also reduced the potential for pastoralism in some areas and has contributed to the trend of urbanization.

- **Loss of habitats and biodiversity.** This problem stems from uncontrolled hunting, fishing and collection, as well as habitat degradation and loss. Climate variability, inadequate understanding of sustainable resource management, weak management capacity and poor compliance with regulations also contribute to this problem. Changes to the wetlands of the Sahel and new capturing techniques have has an especially large impact on migratory bird species.
- ***Reduction in arable land and pastureland.*** Mauritania's resource base is limited by environmental and climatic conditions. Increasing temperatures and declining rainfall, as well as destructive land-use practices, reduce the amount of arable land and natural pastureland.
- ***Decrease in productivity of pastureland.*** Climate change impacts the productivity of natural ecosystems, including those upon which herders rely for pasturing their livestock.
- ***Perturbation of microclimates around wetlands.*** Climate and human activities (e.g., adjacent land use) all affect the ecological condition of wetlands, including their hydrologic function and microclimate. These microclimates are important to maintain biodiversity and support production systems.

These environmental problems have important socio-economic consequences: a reduction in the availability of natural resources, increased conflicts over land and natural resources, an extension of poverty through the loss of livelihoods, rural exodus and increased food insecurity.

3.3 Threats, root causes and barriers analysis

3.3.1 Threats

The inland wetlands of Mauritania are under pressure from a variety of human-induced and climate-induced threats. These threats have been laid out in the National Strategy for the Conservation of Wetlands (MEDD, 2014a) and include the following:

- ***Over-pasturing.*** Livestock have the potential to negatively impact wetlands they use as a food or water source. 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 affect wetlands by increasing nutrient inputs, physically changing habitats and slowing regeneration of vegetation. In Mauritania, Article 11 of the Pastoral Code provides pastoralists and their animals open access (with the exception of some temporary limitation) to pastoral resources located on all spaces other than those where exclusive use rights have been granted to a third party, in accordance with existing laws and regulations. Under this open access policy, trends in pastoralism (e.g., the conversion of a large number of nomadic herders into sedentary producers, the increased importance of livestock as a means of investment, the prolonged concentration of livestock around permanent watering points) have the potential to increase the threats from over-pasturing. These threats are especially concerning for systems that are already very fragile due to climatic conditions.
- ***Over exploitation of timber and non-timber products.*** Despite efforts by the forest service to regulate the harvesting and commercialization of timber resources, these resources continue to be over exploited in wetlands. The species that are most threatened are those used for fuelwood or charcoal: *Acacia nilotica*, *Acacia raddiana*, *Combretum glutinosum* and *Pterocarpus lucens*. At the same time, non-timber forest products (e.g., fruits, medicinal plants, resins, fibres, fodder) are widely, and often illegally, exploited, by populations that rely almost exclusively on local natural resources for their livelihoods. Among some of the species most impacted by this harvesting are: *Acacia senegal*, *Acacia seyal, Commiphora africana, Sclerocarya birrea, Dalbergia melanoxylon* and *Balanites aegyptiaca.* The lack of regulation or control and the changing context (e.g., demographic growth, weakening of traditional management systems) make it hard to maintain a degree of exploitation that is sustainable. The Forest Code provides a means to delegate the authority to manage these resources to local bodies.

Figure 7. Observations of changing conditions at the three wetland sites from the PPG mission in September 2017 (Source: BRLi)

(a) Bed of a former wadi that was artificially-diverted (Tâmourt Bougary)

(b) Dying stand of Doum palm (Tâmourt Bougary)

(c) Unprecedented dryness at the end of the rainy season (Lac de Gabou, Tâmourt en Na'aj)

d) Dyke constructed by villagers to redirect a wadi into Lac de Gabou (Tâmourt en Na'aj)

- ***Habitat conversion and fragmentation.*** Wetland habitats are becoming increasingly fragmented due to declines in rainfall and desertification. In addition, the conversion of wetlands into agricultural areas is reducing the area and increasingly fragmentation of natural wetland habitats. The pressure to convert areas for agriculture can be impacted by many factors, including demographic growth, dietary preferences and development strategies.
- ***Conflicts over use of land.*** Conflicts over the use of land can arise from the concurrence of access rights pertaining to wetlands, customary rights, agricultural development, and other types of development (e.g., retention reservoirs, fencing, wells).
- ***Uncontrolled hunting and fishing.*** Poaching is a major threat to many fauna species, in particular birds and large mammals. Advancements in technology have made it easier for poachers to access remote and difficult to access areas, compounding the problem. In addition, unregulated fisheries practices can deplete fish stocks. These threats are even more of a risk for species that are also being impacted by climate change.
- ***Bushfires.*** Bushfires present a threat to vegetation formations, including pastureland. Despite significant efforts that have been made to better manage this threat, the wilayas concerned by this project continue to be affected by brushfires.
- ***Urbanization.*** As discussed above, Mauritania has undergone a dramatic societal transformation when it comes to urbanization. While the largest population clusters are along the Atlantic coast and southern border, continental wetlands are also popular places for people to settle because of the ample supplies of water and other natural resources. In addition to

direct pressure from growing settlements around wetlands, urbanization can also contribute to other societal changes which impact threats to wetlands (e.g., changes in dietary preferences).

- ***Erosion.*** Wind is one of the primary mediums responsible for erosion in Mauritania and is a common cause of land degradation in arid areas where no protection measures have been established. Wind erosion is one of the processes that leads to desertification. The erosion dries out soil and reduces nutrients, and the particles carried by the wind can envelop other areas. The impacts of wind erosion can be even more significant when strong winds blow over soils that have been heavily grazed during periods of drought. Erosion caused by other mediums, such as water, can also affect the quality of soils and impact vegetation.
- ***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.
- ***Introduced species.*** The deliberate introduction of some non-native species has negatively affected wetlands in Mauritania. *Prosopis julifora*, a fast-growing thorny shrub that is tolerant to arid conditions and saline soil was introduced to Mauritania deliberately, but has become an invasive weed. *Salvinia molesta,* a floating aquatic fern, has also appeared in Mauritania and has the potential to alter wetlands ecosystems and the livelihood activities dependent on these wetlands.
- ***Mining and oil exploitation.*** The Government of Mauritania has granted exploration rights to numerous international mining and oil companies. The exploitation of these resources is a key piece of the country's development strategy. In the case these exploration activities locate exploitable resources in wetland areas, there is a risk conflicts will develop over competing land uses and wetlands may be negatively impacted.
- ***Pollution.*** Pollution is a real threat to wetlands, especially near population clusters or industrial facilities that discharge untreated waste water into wetlands. Pollution of wetlands is more likely as more people settle around these areas and pastoralism practices become more sedentary. Pollution has the potential to seriously impact biodiversity, including causing widespread mortality of species. In cases of severe pollution, for example from industrial activities, it can also do considerable damage to land used for agriculture and pasture, causing a loss of livelihoods.
- ***Climate-induced threats.*** Continental wetlands and biodiversity are profoundly impacted by the changes in climate being observed in Mauritania, including declining rainfall, increasing temperatures and increasing frequency and duration of extreme weather events (e.g., droughts). Because of these changes wetlands are less productive and there has been a diminution in the number and area of wetlands. Quantifying these changes is difficult due to the lack of adequate information. These changes also degrade the quality of wetland habitat for native species and prevent wetlands from functioning and supporting socio-economic development.

3.3.2 Root causes

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

- ***Demographic growth.*** Mauritania's population continues to grow and increase demands on the natural resource base. The density of people varies significantly between different areas, and patterns of demand are impacted by trends of urbanization and sedentarisation. Wetlands and river valleys are especially populated.
- ***Poverty.*** Mauritania's rural population is almost completely dependent on agro-pastoral production for their income and well-being. These activities are dependent on climatic conditions and hindered by the relatively poor resource base and water availability. Access to land, the lack of infrastructure and isolation from markets make poverty reduction difficult. In such conditions, the risk of people resorting to unsustainable practices of natural resource management is high.
- ***A narrow and degraded natural resource base.*** The resource base for many of Mauritania's important production systems are constrained by environmental and climatic conditions. Crop

production is limited to a narrow strip of the country, where it is practiced using a variety of different methods. Using different methods provides a means of adapting to Mauritania's low and erratic rainfall pattern and droughts. However, soil degradation and desertification continue to impact the area suitable for agriculture or pastureland. This has a negative impact on the country's resource base and economy, and contributes to the impoverishment of rural areas and vulnerable groups. Finally, the biodiversity of Mauritania has been affected by over-exploitation.

- ***Rural poverty and dependence on primary sector.*** The rural population of Mauritania is nearly completely dependent on the exploitation of natural resources for their food security and livelihoods. 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 Mauritania are not sustainable in the face of climatic and human-induced threats. Adapting practices requires improved knowledge on the state of resources, changes and alternative or adapted management techniques.
- ***Weak compliance with environmental and natural resource management regulations.*** Despite a legal and regulatory framework for natural resources, enforcement and compliance remain weak. A lack of sufficient resources and limited understanding contribute to this cause.
- ***Lack of diversity of livelihood options.*** The environment and isolation of rural areas in which the wetlands targeted by this project are located limit the diversity of livelihoods practiced by local communities. These livelihoods are almost completely dependent on the exploitation of natural resources.
- ***Increased urbanization and sedentary production practices.*** The rapid trends towards urbanization and increasingly sedentary production systems contributes to many threats. These trends increase demands for resources, especially around wetlands that serve as important sources for vital resources and services upon which communities depend. The immediate threat of overexploitation is increased when more people settle in and around a wetland, and the demands of an urbanized population can place additional strains on these resources (e.g., water provisioning, changing dietary preferences).
- ***Poor spatial planning.*** The lack of appropriate spatial planning is a root cause of threats to wetlands both from the perspective of planning water management techniques and infrastructure to control water, which can divert water supplies, as well as from the perspective of poor development planning to manage the impacts of human settlement patterns and activities.
- ***Climate change.*** Studies conducted as part of the preparation of the three NC and the PANA-RNI looked at the main impacts of climate change on the country's major development sectors. These studies showed that climate change is a root cause of many of direct and indirect threats contributing to the diminution and degradation of continental wetlands in Mauritania. Among the reasons that were identified for why climate change is so important to wetlands are the following: poor spatial and temporal distribution of water resources; changes in the temperature of the water; the considerable effects of the evaporation of surface waters because of high temperatures and winds; deterioration of water quality due to the silting up of rivers and pollution; a drop in the level of groundwater as well as an increase in runoff and water erosion; a decrease in water quality and quantity; increasingly low flows at the level of waterways; lags in the commencement and ending of rainy seasons, and periods of drought during said seasons; a decrease in the length of the rainy season; and the proliferation of floating plants that affect the flow speed of waterways. Among the anticipated short-term impacts of these changes are reduced water availability, progressive soil erosion, a reduction in the latitude and productivity of pastoral rangelands, and a reduction in arable land.

3.3.3 Barrier analysis

Building the resilience of continental wetlands and improving the adaptive capacity and resilience of local communities will require addressing numerous barriers. These include the following social and technical barriers to establishing more sustainable natural resource management.

- Insufficient monitoring of natural resources, and in particular wetlands, to inform management and assure dissemination of knowledge on the status of resources and the effects of climate change.

- Lack of participatory governance and management structures or plans to manage wetlands.
- Lack of awareness of the appropriate practices of sustainable natural resource management and their benefits. This is exacerbated by a lack of investment in the dissemination of knowledge on the subject.
- Insufficient application of legal regulations that have been developed to address threats, and prevent the over-exploitation and degradation of resources.
- Limited transportation infrastructure to access markets and services due to a combination of public investment decisions, poor implementation of transport policies, the vastness of the country and the isolation of rural populations.
- Limited access to investment and working capital, with no viable system for the micro-finance needed in rural communities to acquire assets and services to boost productivity.
- Disproportionate public investment in certain areas, and not as much in other more remote, rural areas.
- Insufficient coordination of activities targeting the degradation of the environment and climate change across sectors and partners. This is in part because structures mandated to assure an integrated approach to the management of natural resources in the face of climate change lack necessary capacity.
- Insufficient institutional capacity at multiple levels, including at the decentralized level where financial, human and technical resources remain very limited.
- Insufficient technical and operational capacity at multiple levels and across numerous sectors.
- Poor land use planning and the complexity of land use issues, including open access policies for resources, multi-use systems and conflicts or confusion caused by the superposition of state and customary law.
- Weak representation of some groups in governance systems, including decision-making and management bodies.
- Strong differentiation in the roles of various social groups in production systems and the sharing of benefits.
- Limited local community ownership of some investments because of a predominantly top down approach to public investments.

3.4 Stakeholder analysis

This project will work with stakeholders at multiple levels, including at the national level and at the three wetland sites being targeted by this project. Key stakeholders and stakeholder groups have been identified and consulted throughout the project design process. An overview of these stakeholders and stakeholder groups as well as and their potential roles and interests in the project are presented below. The overview is followed by a more detailed presentation of key stakeholders and stakeholder groups at each of the three wetland sites.

State government and its administrative authorities

Mauritania is a presidential republic with a legal system that incorporates aspects of both Islamic law and the French civil law system. The country has committed to deepening decentralization and building the capacity of decentralized authorities (PRSP, 2011). Administratively, the country is divided into 15 Wilayas (regions), which are subsequently divided into 54 Moughatâas (departments) and 250 communes (municipalities). Each Wilaya is under the authority of a Wali (governor), while Moughatâas are managed by Hakems (prefect). Communes are managed by elected mayors with the assistance of municipal councils. The wetlands being targeted through this project are located in the Wilayas of Assaba, Hodh Ech Chargui and Tagant.

In alignment with Mauritania's process of decentralization, which is reflected in the countries national and sectoral policies and strategies (see Section 3.1.3.), this project will consult and work with local authorities (i.e. communes/municipalities) to establish decentralized natural resource management. These authorities will have a specific role to support and recognize the local associations established in the context of this project (Box 2). They will also be expected to participate in consultations with different key stakeholders and signatories to local conventions. The communes will participate in the preparation of local conventions and will benefit from the role local associations will play in managing

municipal resources. As such, it is anticipated that these associations and their activities will be integrated into the development frameworks of their administrative areas.

Box 2. Tools for decentralized natural resource management that will be used at the level of wetlands

The following tools will be used to legally establish local management of wetland resources in the course of this project. These tools align with the national legal framework for decentralization and have been tried and tested in the context of other previous or ongoing projects in Mauritania.

Local association for the management of natural resources: A local association established to manage natural resources. They can officially be delegated the mandate to manage resources by local authorities through a local convention. They should be representative of stakeholder groups.

Local convention: In accordance with national laws, communes (municipalities) can delegate the responsibility of management of certain resources to inter-village associations under reserve of the elaboration of a local convention. Local conventions regroup the regulations that will apply to the space to be managed and should be elaborated based on extensive consultation. Once approved by the administrative authorities, the DREDD and the commune, the local convention becomes the legal tool for the management of the natural resources. An “arrêté” is used to formalise the transfer of management to the local association.

Surveillance Network: Surveillance networks are made up of volunteers from local communities. Their mandate is to inform users of their rights and responsibilities, to collect fees associated with commercialization of resources and to note infractions. Members are recognized officially by the DREDD.

Carte de vocation: A land use map of the space to be managed that is used to help develop and manage different use areas.

Particular Regimes: Specific regulations and actions for a space or species that presents a specific economic potential or risk of degradation. Must be validated by the General Assembly and submitted to the DREDD and communes. The association is then responsible for their implementation.

Simplified management plans: Authorize and regulate the exploitation of particular resources.

Ministerial departments and other public institutions

In accordance with its mandate as regards the conservation of wetlands, the management of natural resources and promoting sustainable development, this project has been designed and will be implemented in close collaboration with the Ministry for the Environment and Sustainable Development (MEDD). Decree No. 057/PM/2014 specifies the responsibilities of the MEDD and the organization its central administration. The administration structure includes: a Ministerial Cabinet, a Secretary General, Central Directions, and Regional Delegations for the Environment. The Ministerial Cabinet comprises three Chiefs of Mission, four Technical Advisors and an Internal Inspector.

The Central Directions of the Ministry include the following:

- The Direction for Planning, Intersectoral Coordination and Data (DPCID)
- The Direction for Protected areas and the Coast (DAPL)
- The Direction for the Protection of Nature (DAPN)

The DPCID is headed by a Director assisted by a Deputy Director and comprises three “services”. Among the missions of the DPCID, there are two that are of direct relevance to this project: (i) to ensure, in coordination with respective structures of other ministerial departments, the planning and integration of dimensions of sustainable development and the environment in sectoral policies; and (ii) to collect, produce, exploit and disseminate environmental data.

The DAPL is headed by a Director assisted by a Deputy Director. It comprises three “services”, including one charged with the monitoring of biodiversity. The biodiversity “service” includes a division focused on wetlands. The DAPL is directly implicated in this project given its mandates to: (i) develop national policy for the conservation of protected areas, coastal areas and wetlands, and to achieve the imperatives of the sustainability of development in this policy and (ii) ensure the preservation of endangered species, including migratory and resident species in protected areas, on the coast and in wetlands.

The DAPN is headed by a Director assisted by a Deputy Director. It comprises four "services", including one focused on forests and pastures and another focused on combatting desertification. Among the mandates of the DAPN that are of relevance to this project are the following: (i) monitor the state of natural forest and wildlife resources, (ii) identify and implement priority or urgent measures to ensure the sustainability of natural resources, (iii) develop and implement management plans for forests, (iv) develop and implement local plans to combat desertification, and (v) develop and implement plans for the protection of pastures and the control of brushfires.

As explained above, the branches of the MEDD are also all represented under the CCPNCC, which has a specific mandate to work with climate focal points in other ministries to integrate climate change within sectoral policies, in alignment with the UNFCCC.

At the level of the Wilayas, the MEDD is represented by Regional Delegations for the Environment and Sustainable Development (DREDD). They are responsible for the implementation of programs and activities assigned to them by the Department. They also work with local communities on management of the environment. The individual delegates are under the authority of the Wali. Departmental inspections are created in the capital of each Moughatâa.

This project is fully in line with the priorities of the MEDD and will provide the ministerial agency human, technical and financial resources to advance their strategic priorities for the conservation of wetlands as outlined in their national strategy, and assure the integration of wetland considerations in national strategies for adaptation and sustainable development. It represents an important opportunity for the MEDD to advance its objectives to improve the resilience of key ecosystems and sustain the resource base on which the country depends economically and socially. It will also advance the MEDD's mission to collect, produce, exploit and disseminate environmental data by improving the knowledge base and access to information on Mauritania's wetlands by supporting the creation of a national database and geographic information system (GIS) on wetlands. As the lead Ministry responsible for the management of wetland ecosystems, the MEDD at both the national and regional level will play a key role in this project to assure its strategic alliance with national policies and assure appropriate coordination with other ministries working in the domains of water, natural resources and rural development (e.g., Ministry of Water and Sanitation, Ministry of Fisheries and Maritime Economy, Ministry of Economic Affairs and Development, Ministry of Agriculture, Ministry of Livestock, Ministry of Interior and Decentralization).

The DREDD are anticipated to be active stakeholders in advancing the objectives of this project at the watershed and wetland levels. The DREDD will provide technical capacity to this project and will have specific responsibilities as regards: participating in consultations and negotiations with stakeholder groups; the development of local conventions, particular regimes and simple management plans; the establishment and recognition of surveillance networks; assessing the effectiveness of coordination committees for watersheds (CCBV) and local associations for the management of natural resources (ALGRN); and monitoring the impacts of this project on the environment and the resilience and adaptive capacity of communities. To fulfill this mandate, they will work with the regional delegations or decentralized services of other ministries working at the level of the Wilayas in the domains of water, natural resources and rural development.

Local communities

This project aims to benefit local community stakeholders by building the resilience of local wetlands and communities through improved natural resources management at the watershed and wetland levels. The PPG team carried out intensive consultations with stakeholders in each of the three selected wetlands assessment as demonstrated through photo documentation (Fig.8) as well as further explained in chapter 6. A brief community profile of each wetland is presented at the end of this chapter. Specific efforst were made to identify vulnerable or disadvantaged groups so that their voices can be taken into account in the design of the project.

Vulnerable groups

As part of the process to engage local community stakeholders during project preparation, particular attention was made to identify and consult with vulnerable groups. In the scope and context of this project, groups that have been identified as vulnerable include Haratine and women.

Haratine constitute the largest minority group in Mauritania. They have origins in different groups such as the Bambara, Fulani, Soninké or Wolof people, but have adopted a common language, Arabic, and

culture (Hellweg, 2012). According to Minority Rights Group International, the group "is essentially composed of Moors (or Beidanes)….and are descendants of black ethnic groups that were captured by the majority white Maures or Berber-Arabs and have been discriminated against and have lived under slavery for years" (Das, 2016). Being descendants of a caste-like, endogamous system with hereditary occupations has made Haratine vulnerable to discrimination based on social and descent criteria.

Despite adoption of the Slavery Act in 2007 and a revised law on slavery that was approved in 2015, more recent reports continue to criticize the perceived lack of commitment to implement the law and end practices of discrimination against Haratine. (MRG, 2015). In 2012, the concluding observations on the initial report of Mauritania to the United Nation's Committee on Economic, Social and Cultural Rights (CESCR) confirmed that these group remains extremely economically vulnerable, noting "with concern that, despite the progress achieved in poverty reduction, a large proportion of the population, especially women, former slaves and descendants of slaves, still lives in poverty, including extreme poverty" (p.6).

During the project preparation phase, PPG consultants took particular effort to consult with and gather relevant information on the rights and use of natural resources by Haratine. Haratine are present at all project sites, where they are recognized as legitimate residents with rights to access local resources. They play a significant role in agriculture and the collection of forest products. Their current and potential role in fisheries varies across sites but is also significant. Despite their involvement in the management and use of natural resources, Haratine are often restricted to specific roles in production systems and can be marginalized within customary governance arrangements for land and resource management. The roles of Haratine continue to evolve, but also reflect the history of this group and the cultural systems which remain prevalent today.

The rights of women to access resources are also recognized; however, they are also often restricted to certain roles in production systems and are often marginalized within customary governance arrangements. Women are the most predominant group in the collection and transformation of certain non-timber forest products (Table 2) and gardening. Women also contribute to other production chains by hoeing and harvesting both rainfed and flood recession crops, collecting timber, and making butter and milk curd. Their rights to collect non-timber forest products (NTFPs) is well recognized (apart from gum Arabic which is traditionally collected by men). However, access to agricultural land is under the authority of a local representative of the tribe, and they have no rights as regards management of forest plantations on exploited land. In some localities women have organized into cooperatives under the control of notables, and have even been attributed land in anticipation of the future financing of projects. Unfortunately, they do not have the necessary capacity to capitalize on this opportunity and are lacking skills to improve the value of NTFPs through transformation or marketing.

The PPG consultants worked to identify potential risks specific to Haratine and women. Based on these efforts, the project integrates significant opportunities and activities to benefit Haratine and women, mitigate their risks and address their political and economic marginalization. The project will work to assure these vulnerable groups are represented in governance and management mechanisms (i.e. CCBV and ALGRN) for natural resource management that will be developed by the communities themselves. Recognizing the significant role these groups play in different production systems (i.e., agriculture, non-timber forest product production, fisheries) and their near 100% dependence on natural resources for food security and livelihoods, the program will also work directly with vulnerable groups to assure their understanding of their rights and build their capacity to adapt, improve and diversify their income-generating activities. Specifically, the project integrates targeted strategies and activities to promote the adaptation of production chains in which they play key roles in supply and transformation. Finally, the project will build the capacity of vulnerable groups to organize and act collectively, as well as support the establishment of mechanisms to mitigate grievances, thus diminishing the risk that they do not have equal access to benefits provided by the project.

Table 2. Important NTFPs collected at project sites

Species	Product(s)	Uses	Marcket chains	Site prevalence and practices					
				Tâmourt Bougary	Collect or transform	Gâat Mahmoûda	Collect or transform	Tâmourt en Na'âj	Collect or transform
Nymphéa lotus	Tuber	Food, fodder	None	X	Women	X	None	X	Women
Ziziphus mauritiana	Fruit	Food, medicine	Local, regional, national	X	Women	X	Women	X	Women
Balanites egyptiaca	Fruit (*tougga)*	Food, medicine	Local, regional, national	X	Children	X	Women	X	Children
Acacia nilotica nilotica	Pod (*selaha*)	Tanning of skins	Local, national	X	Women		Women	X	Women
Acacia sénégal	Gum arabic	Gum arabic	Regional, national	X	Men	X	Men	X	Men
Hyphaene thebaica	Fruit	Food	Local, regional	X	Children (collect) Women (transform)				
Sclerocaria birrea	Fruit	Food, medicine	Local	X	Children				
Corcorus auritorus	Leaf	Food	Local, national			X	Women	X	Women
Typha spp.	Flower	Stuffing for cushions				X	Women		

Wetland sites

Tâmourt Bougary

Located within the Wilaya of Assaba, Tâmourt Bougary is a relatively small (1,750 ha) wetland that is used by local stakeholders for a wide-array of production systems (Table 3). Within the Moughatâa of Kiffa and the commune of Aghorat, the wetland is located in a region traditionally used by nomadic Maure (or Moor) tribes and currently has nine localities in its vicinity. These localities are situated both in the southern part of the tâmourt near areas used for recession agriculture (e.g., El Gaa, El Vaddi, Oum Lebhar) and along the road of hope (e.g., Voum Lekhdeirat, Oum Lebaar, Chivaa, Rass El Vill). In total the nine localities are estimated to have a total population of approximately 2,500, primarily from the tribes of Ehel Sidi Mahmoud, Lihwachim, Idawali, Laghlal, and Ideyboussatt. The area is also visited by transhumant pastoralists during the lean season. The tribe of Edel Sidi Mahmoud claim to be the primary "owners" of the wetland, and under customary law they have established a system of resource use and a simple zoning plan. They maintain exclusive rights to areas used for flood recession agriculture, fishing and tourism. The sharing of pastures and watering holes between sedentary and transhumant pastoralists is customary, and is now legally mandated by national laws that dictate open access rights to any land without a private title. The customary system, which is largely based on tribal associations, is well established and is effective at averting conflicts. During the PGG site visit, local stakeholders reported observing significant changes in the wetland and its natural resources (Table 3).

Table 3. Production systems and reported observations and concerns about natural resources at Tâmourt Bougary

Production systems	Reported observations and concerns about natural resources
• Livestock rearing by sedentary and transhumant pastoralists • Flood recession and rainfed agriculture practiced in the perimeter of the wetland and surrounding wadis • Market gardening • NTFP collection • Wood collection • Fisheries	• Diminution of water resources. Water is being diverted from the wetland for agriculture on wadis; the five wadis to the east (i.e., Ghuilani, Arouej , Medreougha, El Vadhi and Mneissira) are now being managed to control water flow. • Degradation of vegetation cover. Collection of wood for wood energy and to make charcoal were cited among primary causes. • Mortality of palms (*Hyphaene thebaica*) • Loss of biodiversity • Siltation of wetland • Declining yields in fisheries. There have also been evolutions in the modes of transforming fish due to economic constraints and the diminution of the resource. • Expansion in the area under agriculture. Agriculturalists are no longer self-sufficient with the settlement of pastoralists. • Decrease in agricultural yield and soil degradation

• Hunting	• Increase in livestock, especially during the lean season • Divagation of livestock • Predation of livestock by crocodiles, and conflicts between crocodiles and NTFP collectors • Decrease in tourists since 2012 and the amplification of the terrorist risk in the Sahel

During project preparation the principal stakeholders identified at Tâmourt Bougary were the following:

- **Government, local authorities and local populations**
  - The State and its administration, including DREDD
  - Authorities of the municipality, and its environmental service
  - Notables and community members of Ehel Sidi Mahmoud group (multi-system users, control rights to fishing, flood recession agricultural areas and tourism)
  - Notables and community members of other resident agro-pastoralist groups
  - Resident Haratine (very active in production systems concerning agriculture and NTFPs, with a strong interest in fisheries)
  - Transhumant pastoralists that use Tâmourt Bougary
- **Community-based organizations**
  - Local fisheries committee which controls when fisheries are open and rules of access
  - Local cooperatives for agriculture, artisanal products, commerce and butchery
  - Women's cooperatives for NTFPs and market gardening
  - Local NGO working against desertification
- **Ongoing or previous projects** (see Section 3.5.1 & 3.5.2 for additional details)
  - RIMRAP (*Renforcement Institutionnel en Mauritanie pour la Résilience Agricole et Pastorale*), 2016-2020
  - PRAPS (*Projet Régional d'Appui au Pastoralisme au Sahel*), 2015-2021
- **Previous projects**
  - GIRNEM (*Projet de Gestion Intégrée des Ressources Naturelles de l'Est Mauritanien*)
  - Powpa (*Programme de travail sur les aires protégées en Mauritanie*), 2009-2011
  - Independently funded tourism project supported by a notable from Voum Lekhdeirat. This project has been abandoned since the crash in tourism.

Gâat Mahmoûda

Located within the Wilaya of Hodh Ech Chargui, the Moughatâa of Néma and the commune of Beribavatt, Gâat Mahmoûda (24,300 ha) is located in an area traditionally used by multiple Maure tribes (e.g., Kunta, Lechiakh Mohamed Fadel). The area has seen an ongoing process of sedentarisation since two schools were established during the colonial period. The wetland has 13 localities on its northern and southern sides that are estimated to have a total population of approximately 3,850. Six of these villages are older and are primarily populated by members of the Ouled Sidi Heiballah faction: Souleymania, Diaguéré 1, Diaguéré 2, Aweinatt, Arafatt, and Ghouds. Seven villages comprised of multiple tribes have appeared more recently: Ahmedou, Chelkha, Hassi Jamea, Gamel, Aïn Oulad Oueiss, Gdauya, and Nezaha.

The wetland is used for a variety of production activities (Table 4). Pastoralism is the key income generating activity practiced by sedentary community members, who have near exclusive use of the wetlands varied pastures because of inhospitable conditions caused by the wetland and mosquitos, and transhumant pastoralists, who use areas to the south extensively during the lean season. The herds visiting the wetland include both more sedentary, family-owned herds with significant numbers of smaller ruminants and larger, commercial herds that are often owned by business men in urban areas and are replaced annually depending on the market. Agriculture and the collection of non-timber forest products are the primary production systems for Haratines. Stakeholders report that the site has been used by Malian fisherman for 17 years. The number of Malian fisherman increased sharply in 2013 during the conflict in Mali. These fishermen were reported to have been given access rights to fish by

the local authorities, without the consent of other community stakeholders, and have had open access to the resource. Last year, under pressure from local communities, authorities revoked their permission to fish and asked the fisherman to leave the area. Recently, Hodh Ech Chargui has seen increased investment by development projects as part of efforts to build the resilience of local communities and minimize the potential impact of terrorist networks.

Table 4. Production systems and reported observations and concerns about natural resources at Gâat Mahmoûda

Production systems	Reported observations and concerns about natural resources
• Livestock rearing by sedentary and transhumant pastoralists • Flood recession and rainfed agriculture practiced in the perimeter of the wetland and surrounding wadis • Market gardening • NTFP collection • Wood collection • Fisheries • Hunting	• Diminution of water resources • Some degradation of vegetation cover due to the collection of wood for energy, fuel and charcoal production. • Loss of biodiversity • Siltation of wetland • Forests and fish stocks are in a relatively stable state. The level of exploitation of these resources is considered moderate given their abundance and natural characteristics (i.e., swampy ground, mosquitos), which make them inhospitable to herds. • There have been few changes in modes of agro-pastoral production. • Sizeable number of Malian fisherman have exploited fisheries in previous years. Local leaders are interested in learning techniques to improve and organize the commercialization of fish for export to Mali. Fisheries are perceived to be abundant. • The collection of NTFPs and wood has been affected by the presence of Malian fisherman, that by their sheer numbers constitute a significant user group. • Fishing inhibits circulation of livestock.

During project preparation the principal stakeholders identified at Gâat Mahmoûda were the following:

- **Government, local authorities and local populations**
  - The State and its administration, including DREDD
  - Authorities of the municipality, and its environmental service
  - Notables and community members of Ouled Sidi Heiballah de Kunta group (primarily agro-pastoralists)
  - Other resident agro-pastoralist groups
  - Resident Haratine (very active in production systems concerning agriculture and NTFPs)
  - Transhumant pastoralists that use Gâat Mahmoûda
  - Malian fishermen
- **Community-based organizations**
  - Local cooperatives (e.g., Union el Veth, Bir El Taqaa, Bagdad Souleymania) for agriculture, market gardening, baking, butchery, tanning, etc.
  - Women's cooperatives for NTFPs and market gardening
- **Ongoing projects** (see Section 3.5.1 & 3.5.2 for additional details)
  - RIMRAP (*Renforcement Institutionnel en Mauritanie pour la Résilience Agricole et Pastorale*), 2016-2020
  - PRAPS (*Projet Régional d'Appui au Pastoralisme au Sahel*), 2015-2021
- **Previous projects**
  - PDRC (*Projet de Développement Rural Communautaire*), 2004-2012
  - PGRNP (*Projet de gestion des ressources naturelles en zones pluviales*), 1998-2003
  - PoWPA (*Programme de travail sur les aires protégées en Mauritanie*), 2009-2011
  - Individual project by a notable of Diaguéré to organize a local fisheries chain. This project was suspended due to the situation with Mailian fisherman.
  - Other projects targeting food security and rural development

Tâmourt en Na'âj

Tâmourt en Na'âj, located in the Wilaya of Tagant, the Moughatâa of Moudjeria and the commune of Tâmourt en Na'âj, is the largest of the three wetlands targeted by this project. It stretches 60 kilometers and covers over 75,000 hectares. The majority of the local population are from the Kunta tribe, and more particularly the Ouled Sidi Haiballa fraction. Other tribes that inhabit the area include Smassides, Ideicheli and Oulad Ghailan. There are at least 31 villages that are largely grouped in Mechra-Nbeika to the south, Lemgaitee-Tintan in the central area and around Lac de Gabou in the north. The largest urban area of approximately 5,000 people is Nbeika, at the intersection of the regional roadway connecting Moudjeiria to Tidjikja. The total population is estimated to exceed 15,000.

Given the scale of the wetland and its watershed, the area is used by a large number of sedentary and semi-nomadic and nomadic groups for a diversity of production systems (Table 5). The watershed contains diversified herbaceous and woody pastures that allow sedentary herds to remain in the area year-round. It is also extensively used by transhumant pastoralists (i.e., 13,000 cattle, 100,000 small ruminants, 3,000 camels, 2,700 donkeys). Flood recession, rainfed, oasis agriculture (date palms) and market gardening are practiced. Approximately 1,000 Malian fishermen installed themselves at Gabou in 2013 and are subject to a municipal tax. Local fishermen also operate on the sites of Mechra and Mezana-Touesersit. Wood, for both fuel and construction, and NTFP collection are also prevalent. Systems of natural resource access and use are largely based on traditional customs, with hereditary inheritance of farmland and open access to forest and pastoral resources. This includes in three forests (i.e., Machra, Tintan and Legdeim) which were classified during colonial times. A surveillance system under the authority of the DREDD is not fully functional. Sharing of resources between transhumant and local pastoralists is managed through customary systems. The site has seen several interventions form the State and development projects. These include an irrigation project by the State and the establishment of four local associations for the management of oasis with support of the PDDO. Two of these AGPO (i.e., Mechra created in 2103 and Tintan created in 1998) remain operational and manage a system of micro-credit.

Table 5. Production systems and reported observations and concerns about natural resources at Tâmourt en Na'âj

Production systems	Reported observations and concerns about natural resources
• Livestock (transhumant and sedentary pastoralism) • Agriculture (rain-fed, flood recession, oasis agriculture, market gardening) • NTFP production • Wood collection • Fisheries • Hunting	• Diminution of water resources • Degradation of vegetation cover • Loss of biodiversity • Siltation of wetland • An increase in salinity of groundwater in palm grove • Sites for flood recession agriculture used to move, with nomadic groups moving to accommodate the location of best beds in the wetland. Today, the system is modified to allow for farming close to their villages. • Drying up of Gabou. Rivers feeding the pool of Gabou have been obstructed by silting, which could lead to complete drying of the pool, loss of arable land, the loss of watering sites during the lean season and the end of fishing. Pastoralists must make sumps. • The yield and area of rain-fed and flood recession agriculture culture is decreasing due to desertification and climate change. • Increase in number of livestock using wetland during lean season • Strong parasitism of livestock due to sedentary nature of rearing • Market gardening is becoming more important to women's economy to compensate for the loss of productivity in other agricultural systems. The activity is constrained by the capacity of groundwater in the dry season. • Decline in tourism to Matmata since 2012, with the amplification of the terrorist risk in the Sahel

During project preparation the principal stakeholders identified at Tâmourt en Na'âj were the following:

- **Government, local authorities and local populations**
  - The State and its administration, including DREDD
  - Authorities of the municipality, and its environmental service

  - Notables and community members of Kunta group (primarily agro-pastoralists, some fisheries, exclusive rights to fishing Mechra fishing site)
  - Other resident agro-pastoralist groups
  - Resident Haratine (currently most important production systems are agriculture and NTFPs)
  - Transhumant pastoralists that use Tâmourt en Na'âj
  - Malian fisherman on Lac de Gabou
- **Community-based organizations**
  - 4 AGPO (*Association de gestion participative des Oasis*)
  - Local cooperatives (e.g., 32 cooperatives for gardening in 20 villages, 10 cooperatives in Nbeika)
  - Women's cooperatives for NTFPs and market gardening
  - Local fisheries association
- **Ongoing projects** (see Section 3.5.1 & 3.5.2 for additional details)
  - RIMRAP (*Renforcement Institutionnel en Mauritanie pour la Résilience Agricole et Pastorale*), 2016-2020
- **Previous projects**
  - PDDO (*Programme de Développement Durable des Oasis*), 2004-2012
  - PDRC (*Projet de Développement Rural Communautaire*), 2004-2012
  - Powpa (*Programme de travail sur* les *aires protégées en Mauritanie*), 2009-2011
  - Individual project by a notable of Diaguéré to organize a local fisheries chain. This project was suspended due to the situation with Malian fisherman.

Ongoing or previous projects

During project preparation, several ongoing and previous projects were identified at each of the project sites (see below). These projects provide important means to learn from previous experiences and build on achievements to date. The ongoing projects, multiple of which deal with improving the resilience of agricultural and pastoral systems, provide important opportunities for complementarity and replicability. By focusing on the resilience of wetlands and the adaptive capacity and resilience of production system that rely on wetlands, this project will bring additional capacity to look at the issues wetland management and support the establishment of local and collective management of these key resources. In addition to these cross-sectoral site level projects, there are also wetland protection and conservation projects being implemented elsewhere in Mauritania that provide important opportunities for learning and coordination (see Section 3.5.1).

Figure 8. Stakeholders consultation during the PPG mission in September 2017 (Source: BRLi)

(a) Group of pastoralists (Gâat Mahmoûda)

(b) Malian fisherman (Gâat Mahmoûda)

(c) Members of women's cooperatives (Gâat Mahmoûda)

(d) Group of farmers (Tâmourt Bougary)

(e) Members of women's cooperatives (Tâmourt Bougary)

(f) Group of pastoralists and farmers (Tâmourt en Na'âj)

3.5 Baseline analysis and gaps

Mauritania has established a national policy agenda that integrates decentralization, rural development, natural resource management and adaptation to climate change. The international community has provided support to national and local stakeholders to advance this agenda 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.

3.5.1 Past and planned national actions and projects

SNCZH (Stratégie Nationale de Conservation des Zones Humides / National Strategy for the Conservation of Wetlands)

In recognition of the importance of conserving and managing wetland resources, Mauritania developed a national strategy for the conservation of wetlands (see Section 3.1.3). It was approved by the Government in October 2014. The strategy supports Mauritania's objective to conserve, restore and sustainably use wetlands and their associated biodiversity, with the aim of ameliorating the conditions of local populations and guaranteeing for future generations sufficient resources for the sustainable development of the country (MEDD, 2014a). It has twelve strategic axes and is intended to be integrated with other national sector strategies. This LDCF project was developed within the framework of the implementation of this national strategy. It addresses the problem of the diminution of certain continental wetlands of international or regional importance, and the associated destruction of unique biodiversity and ecosystems. Focusing on inland wetlands, as opposed to coastal areas, this project will provide an opportunity for Mauritania to address an important gap in establishing a comprehensive approach to wetlands.

IGMVSS (Initiative Grande Muraille Verte pour le Sahara et le Sahel / Great Green Wall of the Sahara and the Sahel Initiative)

The Great Green Wall of the Sahara and the Sahel Initiative (IGMVSS) was approved in 2007 during the eighth session of the Conference of Heads of State and Governments of the African Union (AU) held in Addis-Ababa. Its objective, as defined in the IGMVSS' regional harmonization strategy, is to improve the resilience of human and natural systems in the Sahelo-Saharan zones to climate change through the healthy management of ecosystems and the sustainable use and development of natural resources, the protection of the country's tangible and intangible rural heritage, the creation of centers of rural production and sustainable development, and the improvement of living conditions and livelihoods of the populations living in these areas. In 2010, the President of Mauritania signed the convention creating the Pan African Agency for the Great Green Wall (*Agence Panafricaine de la Grande Muraille Verte*, APGMV) and officially committed to supporting the implementation of the initiative.

In 2013, the National Agency for the Great Green Wall of Mauritania (ANGMV) was created by Decree No. 2013-156 as the national structure designated by the Government to manage the IGMVSS in Mauritania. It operates as a public institution under the technical guidance of the MEDD and is supervised by a board of directors. The implementation framework of the IGMVSS is laid out in a national strategy and action plan (*Stratégie et Plan d'Action de mise en oeuvre de l'Initiative de la Grande Muraille Verte en Mauritanie*) for the period 2014-2018. The strategy is structured around objectives to: improve land production and food security, including through sustainable land management, conservation and restoration; build the capacity of stakeholders, particularly at the local level to combat desertification and sustainably manage natural resources; engage stakeholders through a communication and knowledge management strategy; and improve coordination and monitoring and evaluation of activities and the action plan of the IGMVSS. Among the activities that have been planned are: agroforestry improvement with the establishment of nurseries of indigenous species, the planting of protecting hedges and the restoration of specific degraded forests ecosystems; the restoration of land to support agriculture development; natural forest restoration; the promotion of good governance of natural resources; and the creation of income generating activities for local communities. The

implementation zone for the IGMVSS in Mauritania been defined in accordance with the ecological criteria laid out in the regional harmonization strategy and includes six Wilayas: Trarza, Brakna, Tagant, Assaba, Hodh El Gharbi and Hodh Ech Charghi.

This project will be implemented by the ANGMV in close coordination the IUCN. This project provides an important opportunity to integrate the management of inland wetlands ecosystems into the broader framework for conservation and natural resource management being supported by the ANGMV. The budget of the ANGMV, which is determined on an annual basis by the Government of Mauritania in alignment with the strategy and action plan, will serve as co-financing for this project.

MAVA (Fondation pour la Nature / Foundation for Nature)

MAVA is in the process of implementing its West Africa strategy for 2016 to 2022 and will partner with this project by providing important expertise on issues of wetland management and co-financing. Its priorities are to provide a sustainable future for people and nature, focusing on freshwater and coastal ecosystems, and cultural landscapes. In West Africa it aims to tackle six interlinked threats to biodiversity (i.e., human disturbance, oil pollution, infrastructure, lack of knowledge, bycatch, and overfishing) in support of the conservation of six priority species and habitats (i.e., sea turtles, coastal wetlands, seabirds, mangroves, seagrass and small pelagic fish).

PACBV (Projet d'Aménagement Communautaire des Bassins Versants / Community-Based Watershed Management Project)

The PACBV was developed by the World Bank and Global Environment Facility (GEF) in response to a request from the government for complementary support to the PDRC (see below). The project, which was coordinated with the then ministries of rural development and the environment, had a development objective to lessen the incidence of land degradation at the watershed level within the PDRC project area by assisting rural communities to realize benefits through community-driven investments addressing land degradation and promoting sustainable land management practices. The project was effective from 2007 to 2013, but experienced significant delays at certain points due to conflicts among stakeholders and political events. An evaluation of the project found the objectives remain relevant in the Mauritanian context and provided a strong basis for improving governance and stakeholder participation. The primary intervention sites of the project were the watersheds of Greiguel, Tengharada, Saïla and Beilougue Litama. Of particular relevance to this project are the positive achievements the project had in establishing watershed associations, resolving stakeholder conflicts and generating positive income flows through sustainable practices.

PDDO (Programme de Développement Durable des Oasis/ Project for the Sustainable Development of Oases)

The PDDO came into force in November 2004 and closed in 2014; it followed two previous oasis development projects that ended in 2003. The program was focused on the cultivation of date-palm, a central component of oasis economies and the social organization of oasis populations. Its overall goal was to lay a solid foundation for oasis development by enabling the empowerment of oasis communities to participate effectively in the pursuit of the national objectives for poverty reduction and the fight against environmental degradation. The program was financed by an IFAD loan and contributions from the Government, beneficiaries, the GEF and FADES. The lead agency was the Ministry for Rural Development. Of note in the context of this project, the PDDO was active in four oases at Tâmourt en Na'âj.

GIRNEM (Projet Gestion Intégrée des Ressources Naturelles de l'Est Mauritanien / Integrated Natural Resources Management in Eastern Mauritania)

Launched in 1991 and supported by the German cooperation, the project had four consecutive phases and ended in 2004. Its objective was to work with local collectivities to advance sustainable natural resource management. The beneficiaries of the project were the Wilayas of Assaba, Hodh El Gharbi and Hodh Ech Chargui.

ProGRN (Programme de gestion des ressources naturelles / Program for the management of natural resources)

A follow on to the GIRNEM, ProGRN is a program of the Mauritanian-German Cooperation. The primary institutional partner in Mauritania is the MEDD and the program is implemented by GIZ. The general objective of the program is that the population and administration of Mauritania sustainably manage

resources in ecosystems. It intervenes in three main areas: (i) advisor on politics related to the environment and climate change, (ii) decentralized natural resource management, and (iii) advisor to management of the National Park Banc d'Arguin and the trust fund. ProGRN has developed, tried and tested the approach to decentralized natural resource management being proposed for this project. The experiences of ProGRN in Guidimakha and Hodh el Gharbi have been carefully taken into consideration in the design of this project and the project will support learning exchange visits to areas where ProGRN has successfully advanced decentralized natural resource management.

RIMRAP (Renforcement Institutionnel en Mauritanie pour la Résilience Agricole et Pastorale / Institutional strengthening in Mauritania for agricultural and pastoral resilience)

A five-year program (2016-2020) financed by the European Union (EU), the program's objective is to improve the resilience of vulnerable populations to food and nutrition insecurity. The program's total budget is 27 million Euros. It aims to achieve its objective by reinforcing the governance of natural resources, in an equitable and sustainable fashion, in the context of climate change. It will simultaneously work to advance three results: (i) reinforcing institutional and organizational capacity at the national level; (ii) improving the governance of natural resources for rural communities in the Wilayas of Assaba, Hodh El Gharbi, Hodh Ech Chargui.and Guidimakha; and (iii) improving information systems for food and nutrition security. The primary institutional partners are the Ministry of Livestock (ME), the Ministry of Agriculture (MA) and the Ministry of the Economy and Finances (MEF). Consortiums of NGOs have been established in each of the four Wilayas to implement the program.

PARSAAC (Amélioration de la résilience des communautés et de leur sécurité alimentaire face aux effets néfastes du changement climatique / Improving community resilience and food security in the face of the adverse effects of climate change)

An initiative of the Government of Mauritania and the World Food Programme (WFP), the PARSAAC is financed by the UNFCCC Adaptation Fund for the period 2014-2018. Its execution is being ensured by the MEDD. The project's aim is to support national climate change adaptation strategies and improve the resilience of vulnerable communities. It is working to achieve this objective by strengthening the resilience and food security of vulnerable agricultural, pastoral and agro-pastoral communities in 8 Wilayas: Trarza, Brakna, Gorgol, Tagant, Assaba, Guidimakha, Hodh El Gharbi et Hodh Ech Chargui. The project has three primary components: (i) support technical services and communities so they better understand climate risks and their impacts on resources and food security, and facilitate the decentralized and participatory planning of adaptation; (ii) design and implement concrete adaptation measures identified through planning aimed at combating desertification and land degradation; and (iii) to develop and implement concrete adaptation measures identified through community planning aimed at diversifying and strengthening the livelihoods of vulnerable populations. This project will draw form the experiences and efforts of the PARSAAC, especially as regards decentralized and participatory community-based planning for adaptation and the design and implementation of adaptation measures.

NAPA-RIM (National Adaptation Programme of Action to Climate Change / Programme d'Action National d'Adaptation aux Changements Climatiques)

The NAPA-RIM is a mechanism within the UNFCCC, which was specifically designed to help Least Developed Countries to identify their priority adaptation options to climate change and to communicate these in an accessible manner. It was developed via a participatory process that looked at issues of adaptation across sectors. It resulted in a series of priority adaptation options. This project is aligned with the priorities defined in the NAPA-RIM and with multiple key recommendations for implementation: ground water management, in particular the integrated management of low lands and wetlands; improve livelihoods by making them more resilient to climate change; and increase climate change resilience of natural resources through their conservation and restoration. It is also directly linked to the following activities and priority adaptation measures: promotion of water-saving techniques in oasis zones, the dissemination of drip irrigation technology in the river valley and oasis zones, promotion of livestock mobility, reorganization of populations adversely affected by climate change, promotion and development of domestic poultry, substitution of firewood, participatory reforestation for energy and agro-forestry in agricultural zones and the protection of the diversity of fish populations.

(ACCMR) Adaptation au Changement Climatique en Milieu Rural / Adaptation to Climate Change in Rural Areas

Funded by the German Federal Ministry of Economic Cooperation and Development and the European Union over the period 2014-2018, the ACCMR project supports the MEDD and other partner ministries

and agencies to promote the integration of adaptation to climate change in all national strategic and planning processes. Per its mandate, the MEDD must ensure that the national adaptation process is launched, conceived and implemented in an inclusive manner. An intersectoral committee has been established and mandated to coordinate this process. Based on an analysis of the situation, the relevant State and non-State actors designed a roadmap for the National Adaptation Plan as well as sectoral action plans. It is on this basis that the project promotes measures to integrate adaptation into strategies and programs for rural development. To inform the development of options for the management of natural resources a series of vulnerability analyses were conducted. The AACMR supports partners to undertake these types of studies and carry out pilot measures to reduce vulnerability. Simultaneously, the project undertakes awareness-raising campaigns on issues related to climate change and adaptation. This project will build on the experiences and technical knowledge of the ACCMR.

3.5.2 Past and planned regional actions and projects (if relevant)

PRAPS-MR (Projet Régional d'Appui au Pastoralisme au Sahel / Regional Project to Support Pastoralism in the Sahel)

PRAPS is a regional project coordinated by the Committee for Drought Control in the Sahel (CILSS) and funded by the World Bank and International Development Association (IDA) that involves six countries: Burkina Faso, Mali, Mauritania, Niger, Chad and Senegal. It stems from the Declaration of Nouakchott, adopted in 2013, which calls for securing the way of life and means of pastoral populations and to increase the gross proceeds from livestock activities by at least 30% in the six concerned countries over the next five years, with a view to significantly increase the income of pastoralists in the next 5 to 10 years. The project's objective is to improve access to essential production facilities and services and to markets for pastoralists and agro-pastoralists in selected cross-border areas and along the axes of transhumance in the six Sahelian countries, and improve the capacity of these countries to respond in a timely and effective manner in the event of pastoral crises or emergencies. In Mauretania, the project is intervening in 10 Wilayas: Trarza, Brakna, Gorgol, Guidimakha, Assaba, Hodh El Gharbi, Hodh Ech Chargui, Tagant, Adrar, and Inchiri.

3.5.3 GEF interventions

The proposed project will intervene in the areas of climate change, land degradation and biodiversity. The GEF has supported a series of other past and present projects that address these same areas and associated global environmental problems (Table 6). The present project will build on and be closely coordinated with these interventions.

A full list of GEF interventions in Mauritania is provided in Appendix 3.

Table 6. Current and past GEF interventions that are of particular relevance to this project

ID	Title	Agency	Focal area	Status	Project Summary
9294	Integrated Ecosystem Management Program for the Sustainable Human Development in Mauritania	FAO	Biodiversity, Land Degradation, Climate Change	Concept approved	To increase sustainable human development through the restoration of ecosystem services and an integrated ecosystem management approach in the Wilayas of Southern Mauritania
8029	West Africa Regional Fisheries Program SOP C1	WB	International Waters	Project approved	The Project Development and Global Environmental Objective is to strengthen governance and management of targeted fisheries and improve handling of landed fish at selected sites.
5792	PSG-Sustainable Landscape Management Project under SAWAP	WB	Biodiversity, Land Degradation	Project approved	The Project Development Objective (PDO) is to Expand and Strengthen Sustainable Landscape Management in Targeted Productive Ecosystems in Mauritania
5580	Development of an Improved and Innovative Management System for Sustainable Climate-resilient Livelihoods in Mauritania	UNEP	Climate change	Project approved	To reduce the vulnerability to climate change of national government and local communities in the forests and rangelands of the Sahelian Acacia Savanna Ecoregion
5190	Improving Climate Resilience of Water Sector Investments with Appropriate Climate Adaptive Activities for Pastoral and Forestry Resources in Southern Mauritania	ADB	Climate change	Project approved	To improve rural communities' livelihoods and means to combat poverty through managed water investments and adaptive activities for pastoral and forest resources in the southern Wilayas of Mauritania
3893	Support to the Adaptation of Vulnerable Agricultural Production Systems	IFAD	Climate change	Project approved	Increase the resilience of rural communities in response to the harmful effects of climate change on the water resources and agricultural production systems.
3379	SIP: Participatory Environmental Protection and Poverty Reduction in the Oases of Mauritania	IFAD	Land Degradation	Completed	Combat desertification, protect the ecosystem functions and productivity, and improve the livelihoods of the rural poor in the oases of Mauritania

2459	Community-based Watershed Management Project	WB	Land Degradation	Completed	The GEF project will specifically complement the development objective of the IDA CBRD project through support for sustainable livelihoods by reinforcing capacity, supporting sustainable land management investments in target communities, and targeting investments at the watershed level.

3.5.4 Gaps to be filled

An analysis of past and present initiatives in Mauritania reveals the following:

- Climate change, the diminution and deterioration of wetlands, and the loss of biodiversity are among the recognized environmental problems facing Mauritania.
- Establishing sustainable natural resource management and building the adaptive capacity of communities are integral components of national strategies to reduce poverty and mitigate the impacts of climatic and non-climatic stressors. Additional technical and financial support are required to implement these strategies in and around inland wetlands.
- The Government of Mauritania has put in place the legal framework to establish decentralized, local governance and management systems for key natural resources. This process is ongoing, but additional support is needed to render decentralized systems operational.
- Previous programs that implemented processes to establish decentralized, local natural resource governance and management in similar contexts to the wetlands targeted by this project demonstrated positive impacts; stakeholders reported that the process prevented and reduced conflicts over natural resource use, improved the inclusion of vulnerable groups and had a positive impact on the state of natural resources (GIZ, 2011). Expanding the lessons learned from other projects to additional wetlands without established DNRM provides a clear means to achieve positive impacts.
- Most wetland restoration and conservation projects (e.g., Diawling National Park) have been carried out on the coast of Mauritania, with little attention to continental wetlands upon which rural populations in Mauritania also depend.
- Many projects to combat the effects of climate change are also carried out on the coast to combat rising sea levels. Comparatively, very little is done in continental zones where climate change is also known to negatively affect natural ecosystems such as wetlands and the livelihoods of dependent communities.
- New opportunities to invest in continental wetlands exist within the framework of the Great Green Wall, which represents a major effort that the LDCF-funded project can build on and contribute to with lessons learned.

4 Intervention strategy (alternative)

4.1 Project rationale and expected global environmental benefits

The project will increase the resilience of three inland wetlands in Mauritania by enhancing governance mechanisms and building capacity for and establishing improved wetland management. These interventions will have important co-benefits for biodiversity. Without the project's interventions, these wetlands will continue to degrade and their resilience to climatic (e.g. rainfall variability, extreme temperature) and non-climatic (e.g. population growth, economic development) stressors will decrease. This continued degradation would have a direct and negative impact on the aquatic, terrestrial and migratory species that depend on these wetland habitats as well as the vital ecosystem services these areas provide.

Specifically, the project will support the establishment of Coordination Committees for Watersheds (CCBV) and Local Associations for the Management of Natural Resources (ALGRN). The establishment of these groups is in line with the national legal and political framework. The proposed process to establish these groups is based on tried methodologies that have been successfully implemented by previous and ongoing programs in Mauritania.

Coordination Committees for Watersheds

To improve coordination, assure informed and strategic decision-making at the level of regional or sub-regional watershed areas, and support the improvement or maintenance of the values and functions of the three selected wetlands, the project will support the creation and build the capacity of coordination committees (i.e., CCBV) in each of the watersheds in which the selected wetlands are situated. These committees will be developed in collaboration with the MEDD, the MHA and their regional directions and will bring together local stakeholders that play important roles in the planning and management of the watershed. This project will provide these stakeholders a framework to come together, share

information and develop agreed upon strategies to maintain and manage the watershed. It will also provide these stakeholders important opportunities to build their technical and operational capacities.

Local Associations for the Management of Natural Resources

Local associations for the management of natural resources (ALGRN) will be established at each of the three wetlands targeted by this project to enable decentralized management of natural resources. They will be established using a step-by-step process to effectively and legally transfer responsibility for management from the State to the local association. As such, they will provide local authorities and traditional notables a framework to establish multi-use management systems that take into consideration different production systems. This is important to support a diversification of livelihoods, build resilience and address current threats to wetlands and local livelihoods. It also has the potential to reduce conflicts over rights and access to resources and establish more equitable and sustainable systems of benefit-sharing.

A key condition of the project will be that these governance systems are collective and representative of different stakeholders. The process to establish community-based management will involve a series of consultations and negotiations with all key groups of stakeholders to develop the ALGRN and the "rules" that will be integrated into local conventions for resource management as well as other management tools (see Box 1). This consultation process aims to assure the results are appropriated by local community groups and reduce the potential for negative social or environmental impacts. The methodology proposed has been tested under previous programs (ProGRN, 2008). The lessons learned from these programs were carefully considered in the design of this project, most notably as regards guidance to assure representation of vulnerable groups and the establishment of mechanisms for grievance mediation and conflict resolution (GIZ, 2011).

Simultaneously to creating CCBV and ALGRN, the project will work to improve the adaptive capacity and resilience of local communities through the adaptation and diversification of climate-proof livelihoods. Over 20,000 people live in the areas adjacent to the three wetlands selected for intervention in the scope of this project. Most of these people rely directly on the natural resources associated with these multi-purpose systems for their food security and livelihoods. Enhancing the governance of these three wetlands and assuring the sustainable use of their resources is vital to maintain or improve the values and function of these freshwater ecosystems, and build the adaptive capacity and resilience of local communities in the face of growing anthropogenic pressures and climate variability. The project will build on community knowledge and practices to develop and implement climate-proof strategies for natural resource management that are sustainable and can be adapted to respond to changing conditions. At the same time, the project will build the resilience of local households by promoting livelihood diversification that will help to spread risks in the face of longer-term climate change. Without the intervention of this project, climatic stressors, as well as anthropogenic pressures, will continue to negatively impact and degrade the three wetland sites 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. These households will also have reduced flexibility to respond to the impacts of climate change.

Finally, the project will work at local, regional and national levels to raise awareness and improve access to information on the importance of wetlands, the causes of wetland degradation, climate change and management solutions. This will include establishing a national information management system for wetlands. The fact that no such system exists currently is a barrier to coordinated and effective adaptive management and monitoring of wetlands, their values and functions.

The global environmental benefits of this project will be:

- 17,260 square kilometers of watersheds under improved integrated water resource management;
- 101,250 hectares of wetlands under enhanced governance and improved natural resource management;
- Reversion and reduction of desertification and the degradation of wetland ecosystems, including from erosion and sediment flow into water bodies;
- Restoration of globally important ecosystems (e.g., areas of global significance for resident and migratory birds, wetland microclimates);

- Enhanced ecosystem integrity and sustainable natural resource management due to the adoption of improved natural resource management practices in wetlands and production areas in their periphery;
- Conservation of water resources and maintenance of the water cycle, which will also improve water quantity and quality for local use;
- Improvement in soil properties through the adoption and implementation of improved land management practices in targeted areas;
- Rural communities in areas adjacent to wetlands benefiting from increased capacity to implement climate-resilient livelihood options;
- A multiplication of sustainable co-benefits due to a reduction in the diminution and degradation of wetlands and an improvement in their function, which will improve the persistence of aquatic, terrestrial and migratory species, contribute to maintaining species richness and trophic dynamics, maintain the ecosystems' capacities to ensure multiple ecosystem services, and provide increased opportunities for food security and livelihoods.

4.2 Project goal and expected impact

The goal of this project is "to increase the resilience to climate change of three inland wetlands ecosystems and adjacent communities through an ecosystem-based management approach". As part of achieving this goal, the diminution and degradation of wetlands will be reduced and there will be a multiplication of co-benefits. The capacity of local communities in sustainable natural resource management will be significantly improved and the flexibility of households to respond to climate change will be enhanced through the adaption and diversification of climate-proof livelihoods activities. Finally, the project will build capacity and enhance access to information at multiple levels.

The project is aligned with the SNCZH established in 2014 and, as detailed in section 3.5.1, will build off the experiences of previous initiatives and projects implemented to support DNRM in Mauritania. These approaches will be applied to improve the resiliency of continental wetlands and adjacent communities at three sites: Tâmourt Bougary, Gâat Mahmoûda and Tâmourt en Na'âj. These three sites vary in their wetland type and size, offering an important opportunity to gain experience and learning on how these DNRM approaches can most effectively be scaled up and institutionalized.

The project has four major outcomes:

- Improved management of three watersheds through integrated approaches
- Ecological structure and function of three wetlands covering 101,250 hectares restored and maintained through decentralized, participatory management
- Ecosystem-based management strategies adopted by communities living adjacent to three wetlands
- Improved knowledge management system for climate-resilient wetland ecosystems

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

4.3 Project components, their expected outcomes and outputs and planned activities

To attain the project objective, the project will be implemented through four (4) main components (Table 7). More detailed descriptions of each component as well as their associated outcomes, outputs and activities can be found below.

Table 7. Project objective, components, outcomes and outputs

Project: Continental wetlands adaptation and resilience to climate change in Mauritania		
Project Objective: To increase resilience to climate change of three inland wetlands ecosystems and adjacent communities through an ecosystem-based management approach		
Component	**Outcomes**	**Outputs**
<u>Component 1:</u> Restoration and management of wetlands	Outcome 1.1. Improved management of three watersheds through integrated approaches	Output 1.1.1. Three CCBV established and operational
		Output 1.1.2. Three plans of priority actions at the watershed level developed and implemented in support to restoration and management of three selected wetlands
	Outcome 1.2. Ecological structure and function of three wetlands covering 101,250 hectares restored and maintained through decentralized, participatory management	Output 1.2.1. Up to five ALGRN created and operational at three wetland sites
		Output 1.2.2. Local management conventions and *Régimes Particuliers* (RP) to restore, maintain and manage three wetlands (and their associated resources) established
		Output 1.2.3. 101,250 hectares of wetlands naturally regenerated and maintained with improved management
		Output 1.2.4. Capacity of key stakeholders in restoration and management of watersheds and wetlands improved
<u>Component 2:</u> Improvement in the adaptive capacity and the resilience of communities living adjacent to three wetlands	Outcome 2.1. Ecosystem-based management strategies adopted by communities living adjacent to three wetlands	Output 2.1.1. Climate-resilient livelihood strategies developed and disseminated
		Output 2.1.2. Climate-resilient livelihood strategies implemented and evaluated for their effectiveness
		Output 2.1.3. Technical capacities to implement climate-resilient livelihood strategies strengthened
		Output 2.1.4 Local stakeholders' understanding raised on the causes of wetland degradation, the effects of climate change and management solutions
<u>Component 3:</u> Wetland knowledge management	Outcome 3.1. Improved knowledge management system for climate-resilient wetland ecosystems	Output 3.1.1. A geo-referenced information system on Mauritania's wetlands, key climate features and ecosystems services is established and functional
<u>Component 4:</u> Project communication, monitoring and assessment	Outcome 4.1. Project implemented based on RBM, and lessons learned/best practices documented and disseminated	Output 4.1.1. Project Monitoring & Evaluation Plan and system in place
		Output 4.1.2. Project risks monitored throughout project implementation
		Output 4.1.3. Communication strategy developed and implemented
		Output 4.1.4. Mid-term and Final Project Evaluations completed
Project management cost (PMC)	Outcome 5.1. Project is effectively and efficiently managed	Output 5.1.1. Project management units established and functional

Component 1: Restoration and management of wetlands

Component one of this project aims to maintain or improve the values and functions of three wetlands through improved management. By enhancing the governance of these freshwater ecosystems, the project will also improve the resilience of these areas to climate change and anthropogenic pressures. The three wetland sites were selected during the PPG phase of project development (see Appendix 2) using a participatory process that took into consideration a series of criteria related to: physical properties (e.g. surface area, wetland type); ecological, hydrological, social and economic values; anthropogenic and climate change threats; and stakeholder engagement. The three sites vary in type and size, but all are found in the semi-arid Sahel region of Mauritania between 16 and 18 degrees of latitude north. Together they cover a collective area of approximately 101,250 hectares.

Outcome 1.1 Improved management of three watersheds through integrated approaches

The wetlands selected are each part of broader local and regional hydrological regimes that are important hydrologically, economically and ecologically. The management of these water resources is complex and involves a broad range of stakeholders. To improve coordination and assure informed and strategic decision-making at the level of regional or sub-regional watershed areas, and support the improvement or maintenance of the values and functions of three selected wetlands (Output 1.2.), the project will support the creation and build the capacity of coordination committees (*Comité Coordination du Bassin Versant* - CCBV) in each of the watersheds in which the selected wetlands are situated. The primary function of the CCBV will not be to take over the roles of existing water-related agencies, but rather to strengthen coordination, planning, policy setting and monitoring of each watershed at local level.

Output 1.1.1 Three CCBV established and operational

- *A.1.1. Identify relevant stakeholders, elaborate guiding principles and define mandate for CCBV*

In collaboration with the MEDD, the Ministry in charge of water (*Ministère de l'Hydraulique et de l'Assainissement* - MHA) and their regional directions, the project will engage local stakeholders (e.g., government, authorities at the level of communes, regional state services, water users, civil society, non-governmental organizations, business and individuals) that play important roles in the planning and management of the watershed. To establish a framework for these stakeholders to come together, share information and develop agreed upon strategies to maintain and manage the watershed, the project will work with local stakeholders to create CCBV that are representative of various types of stakeholders, including communities, in each of the three concerned watersheds. The process undertaken will build on the positive experiences of projects like PACBV, which have also worked to improve watershed management. The project through the engagement of international and national expertise will also accompany the process to elaborate guiding principles and the official mandate and objectives of CCBV.

- *A.1.2. Obtain formal recognition of the three CCBV through a ministerial text*

The project will accompany each CCBV through the process to acquire formal recognition through a text from the MHA. This recognition is required to make clear and strengthen the role of the CCBV.

- *A.1.3. Establish and make operational CCBV*

Assistance will be provided to each CCBV as it builds its capacity. This support will include operational training to assure the CCBV can function professionally. A limited amount of equipment will also be provided to facilitate planning, coordination, implementation and communication/consultation of CCBV activities. It is anticipated the CCBV will be operational in year two of the project.

- *A.1.4. Hold semi-annual meetings of three CCBV within each watershed*

As of year two, two meetings of the CCBV will be organized annually to advance their objectives.

- *A.1.5. Capitalize on experience with CCBV to inform, scale up and institutionalize systems for watershed management*

Based on an open assessment of the process to create CCBV and their success at achieving their mandate (see activity A.1.10), the project will engage capacity to work with the MEDD, the MHA and other partners, to evaluate the lessons learned from this project and support work on a strategy to scale up and institutionalize the process to create coordination committees at the level of sub-regional or regional watersheds.

Output 1.1.2 Three plans of priority actions at the watershed level developed and implemented in support to restoration and management of three selected wetlands

- *A.1.6. Undertake diagnostic assessments of three watersheds to better understand physical properties, hydrological flows and allocations, anthropogenic influences impacting hydrological flows, potential of alterations to impact wetlands, etc.*

Integrated watershed management requires good knowledge of the characteristics and condition of the watershed, as well as the influences affecting its behavior and trends. The project will support diagnostic assessments, including as feasible systems modelling, of the three watersheds in which the project wetland sites. The assessments will be implemented with support from an external consulting firm in year one. The assessments will not only compile data, but also convert this data into information into a format that can be used to inform strategic decision-making. Assessments at the watershed level will be fully integrated with assessments at the wetland level (see activity A.1.20).

- *A.1.7. Undertake participatory vulnerability assessments and scenario planning for each of three wetlands/watersheds*

Recognizing that climate change and anthropogenic pressures are already having an impact on the project sites and that climatic and non-climatic factors are expected to continue to impact these areas in the future, the project will engage external capacity to lead participatory ecological and socio-economic vulnerability and scenario planning exercises in each of the three watersheds where project sites are located. This activity will be coordinated with activity 1.6 during year one, and aims to further assure management strategies are strategic and well-adapted to changing conditions. It is also intended to raise the understanding of stakeholders on the impacts of climate change and human activities and inform the framework for discussion and negotiation on appropriate management measures (see activity A.1.21).

- *A.1.8. Develop plans of priority actions at the watershed level to support restoration, maintenance and management of selected wetlands*

One of the primary roles of the CCBV will be to coordinate planning of priority actions at the level of the watershed. This planning will be coordinated with the diagnostic and vulnerability assessments undertaken under activities A.1.6 and A.1.7. As the CCBV will be relatively new across the course of this project and the assessments and scenario planning will be the first priorities of the CCBV, the plans are anticipated to remain relatively simple and implementation will only start as of year two.

- *A.1.9. Implement plans of priority actions*

The role of each CCBV in the implementation of priority actions will depend on the types of activities proposed and the capacities of existing operating/managing water-related agencies. In the context of this project, support will be provided only for the implementation of activities that directly impact the restoration or maintenance of the three wetland project sites. The types of activities that could be envisioned include the construction of dykes to manage water flow, the mechanical removal of sand, and the implementation of farmer-managed natural regeneration techniques. These activities may be managed by the CCBV or other water-related agencies. In either case the responsible committee or agency will be responsible for assessing project feasibility, potential environmental impacts, project design, implementation and any necessary operation or maintenance.

- *A.1.10. Develop and apply a tracking system to monitor progress of CCBV and plans of priority actions, as well as key characteristics of watershed*

In conjunction with Activity A1.6, the project will support the establishment of a tracking system to assess whether the CCBV framework is achieving its goal and whether each CCBV is able to progress its plan of actions and fulfil its intended role. This process will aim to create and reinforce accountability, and will also be used to assess the need to adapt the concept or approach of the CCBV. This open auditing process will be complimented by monitoring of the watershed (and the three wetlands in

particular) to assess whether the overall conditions of the watersheds and wetlands are being maintained in accordance with agreed upon strategies, and to inform future decisions.

Outcome 1.2 Ecological structure and function of three wetlands covering 101,250 hectares restored and maintained through decentralized, participatory management

This outcome is specifically concerned with raising the resilience of the three wetland project sites through the establishment of Decentralized Natural Resource Management (DNRM). As explained in section 1.2, the DNRM framework being proposed is based on the existing legal framework and the successful experiences of the ProGRN. The approach centers on the participatory elaboration of a vision, management objectives and rules (including zoning) for resource use, which are formalized though a local convention (*Convention locale*) and the creation of associations for local and collective management (*Associations de Gestion Locale et Collective* - ALGRN). Under Mauritanian law, the state can mandate the responsibility to manage resources in accordance with the local convention to ALGRN through a ministerial order. More particular strategies (*Régimes Particuliers* - RP) to address specific management concerns and simple, resource-specific management plans are used to reinforce and operationalize the local conventions.

Output 1.2.1 Up to five ALGRN created and operational at three wetland sites

- *A.1.11. Build understanding of concept (legalities, mandate) of ALGRN among stakeholders at three wetland sites*

In year one, the project will work with the regional services of relevant ministries and local communes at all three wetland sites to build understanding of the DNRM framework being developed. As ALGRN are intended to be representational bodies, this will involve engaging with a broad and inclusive array of stakeholders to explain the concept of an ALGRN and the legalities of such a system. It will also involve building on the consultation process launched during project development to address any further questions or concerns stakeholders may have. It is during this process that local stakeholders of Tâmourt en Na'âj will need to decide the number (i.e., 1 to 3) of associations to be created for that wetland.

- *A.1.12. Undertake participatory mapping and delimitation of wetland and areas of associated use to be managed (i.e., carte des vocations)*

A first step to elaborating a local convention is the participatory delimitation of the area to be managed. This includes mapping the current areas of use within or adjacent to the wetland and assessing the dependency of local stakeholders' livelihoods on the wetland's natural resources (in particular of vulnerable groups). This tool is imperative to assure clarity on the mandate of the ALGRN, and will improve coherence and coordination when developing local conventions, particular strategies and simple management plans. The exercise will also facilitate tracking changes over the course of the project.

- *A.1.13. Officially create (i.e., obtain local convention to formalize transfer of management) and make operational five ALGRN*

The project will accompany each ALGRN, and the associated communal authorities, as it develops its vision and works to obtain formal recognition through the legal adequate process. This recognition is required to make clear and strengthen the mandate of the ALGRNs. It is anticipated that a single ALGRN will be created for Gâat Mahmoûda and Tâmourt Bougary; however, given the scale and complexity of Tâmourt en Na'âj, three ALGRN are proposed to be created for effective management of different areas of the wetland.

- *A.1.14. Undertake consultations to develop intercommunity vision for management of wetland*

The project (through field agents) will facilitate a process to consult and negotiate a common vision for management of the proposed management area for each ALGRN. This process will involve a series of meetings at each site across the first year of the project.

- *A.1.15. Put in place and support local surveillance and monitoring team*

The successful implementation of sustainable natural resource management will depend in part on assuring respect of the rules established as part of the DRGN system. This will in turn depend on the effectiveness of surveillance and monitoring. The project (through field agents) will support the ALGRN in their efforts to establish local surveillance and monitoring teams at each site. These teams will be recognized by the regional services of relevant ministries and will have multiple responsibilities in terms

of informing users of established rules and their rights, as well as eventually implementing a system of accountability.

- *A.1.16. Establish mechanisms for grievance mediation and conflict resolution*

To assure the rights of individuals are respected and any conflicts can be managed, a mechanism for grievance mediation and conflict resolution will be established. Previous projects that have supported the establishment of similar systems of DRGN emphasize the importance of this activity.

- *A.1.17. Establish mechanisms to track functionality of ALGRN*

The project (through field agents) will work with stakeholders to establish a tracking system to assess whether the ALGRN are achieving their objectives goal and whether each ALGRN is able to fulfil its intended role. This process will aim to create and reinforce accountability, and will also be used to assess whether the ALGRN is representative of all stakeholders, including vulnerable groups. This process will be complimented by monitoring of the wetland and its associated watershed to assess whether the overall conditions of the wetlands are being maintained in accordance with agreed upon strategies, and to inform an adaptive management approach.

- *A.1.18. Exchange and learning visits to sites with more established ALGRN*

Exchange visits to sites with established DNRM and ALGRN (created by previous programs in Mauritania) will be used as a means of building capacity and exchanging of knowledge. At least two exchange visits will be organized for each ALGRN.

Output 1.2.2 Local management conventions and Régimes Particuliers (RP) to restore, maintain and manage three wetlands (and their associated resources) established

- *A.1.19. Undertake diagnostic assessment of three wetlands to define physical properties (including land cover), values and functions, social and cultural uses, dynamics and impacts of multi-use systems, and vulnerability to climate change*

Developing management rules and strategies for wetlands requires good knowledge of the characteristics and condition of the wetland, as well as the influences affecting its behavior and trends. In year one, the project will engage an external consulting firm to support participatory diagnostic assessments of the three wetland sites. Particular attention will be made to assure the involvement of different social groups and promote the engagement of vulnerable groups. These assessments will not only collect data, but also convert this data into information in a format that can be used to inform strategic decision-making. Assessments at the wetland level will be fully integrated into assessments at the watershed level (see activity A.1.6).

- *A.1.20. Undertake a series of in-depth studies to better understand any identified restoration, maintenance or management issues that require particular attention and in order to avoid any unintended negative environmental knock-on impacts*

In addition to understanding the wetland, it is anticipated that additional in-depth studies will be necessary to better understand restoration, maintenance or management issues of particular attention. This could include studies to look at the conservation of aquatic, terrestrial or migratory species; habitat formations that are particularly threated; water quality; or non-timber natural resources of particular value. The project will work with university students to undertake studies as appropriate, hence contributing to the development of future competencies for national wetland management in the context of climate change.

- *A.1.21. Identify appropriate restoration/maintenance/management strategies for three wetlands (taking into consideration climate variability and anthropogenic pressures)*

In conjunction with activity A.1.19, local knowledge and practices will be combined with external technical expertise to develop wetland-specific management strategies to conserve biodiversity, maintain ecosystem services and support sustainable natural resource management, taking into consideration climate variability and anthropogenic pressures. The strategies will integrate the results of participatory vulnerability assessments and future climate scenarios (see activity A.1.7). The potential implications of management strategies on different user and social groups will be assessed and shared with stakeholders to inform community-based decision-making. The activity will result in the identification and prioritization of specific activities for wetland restoration, maintenance or management.

- *A.1.22. Establish rules (including zoning) to be applied across the defined management area for each wetland and regroup said rules under local conventions*

Based on strategies elaborated under activity A.1.21, the communities will establish rules and zoning regulations for each wetland. These rules and regulations will be developed in conjunction with activity A.1.19 and in consultation with all relevant users (including women and vulnerable groups); project staff will ensure that the community-decision making process reflects voluntary, informed consensus. The rules and regulations will be regrouped into the local convention for each ALGRN. Any potential adverse impacts of access restrictions, especially on vulnerable groups, will be addressed by mitigation measures which will be developed in consultation with affected groups and linked to benefits and assistance provided by the project under component 2 (promotion of climate-resilient livelihood strategies).

- *A.1.23. Develop Régimes Particuliers (RP) for any areas with particular economic or conservation potential, or that are particularly vulnerable to degradation*

In conjunction with A.1.19, external expertise will be engaged to work with local stakeholders to develop RP that will address specific management concerns. RP will be developed based on local knowledge and information, as well as the results of studies undertaken under activities A.1.20 and A.1.21.

- *A.1.24. Develop and apply a tracking system to monitor progress of local conventions and RP*

As of year two, the project will support a tracking system to monitor progress of local conventions and RP. This process will be complimented by monitoring of the wetland and the associated watershed (activities A.1.10 and A.1.28) to assess whether the overall conditions of the wetlands are being maintained, and to inform modifications to these DNRM tools.

Output 1.2.3 101,250 hectares of wetlands naturally regenerated and maintained with improved management

- *A.1.25. Produce clear guidance on appropriate wetland restoration, maintenance and management strategies and success measures*

Based on the results of activity A.1.21 and A.1.23, clear guidance on the implementation of strategies will be developed. This activity is intended to provide the ALGRN as well as users of wetland resources with practical instruction on how to implement strategies to achieve measures of success.

- *A.1.26. Implement regeneration, maintenance and management activities on wetlands (e.g., firebreaks, forest protection measures from domestic grazers)*

The ALGRN will manage the implementation of small-scale, wetland-specific restoration, maintenance or management activities (e.g., erosion control measures) identified under activity A.1.21. Project staff will provide technical guidance to the ALGRN and support the process of assessing feasibility, design, implementation and any necessary operation or maintenance. A small grants program will be established to support local associations in the implementation of maintenance and management activities. Activities at the level of the ALGRN are anticipated to be relatively restricted in terms of scale and complexity.

- *A.1.27. Develop and apply a tracking system for restoration, protection and management strategies to ensure they are implemented correctly (and assure they do not have negative environmental impacts)*

A system to assess whether strategies for restoration, protection and management are implemented correctly will be established in conjunction with the more comprehensive wetland monitoring system (see activity A.1.28). The aim is to assure guidance developed under activity A.1.26 have been correctly applied, and are not having negative environmental impacts or reducing the resilience of the ecosystem.

- *A.1.28. Establish a monitoring system (in conjunction with aforementioned tracking system) that can be used to evaluate effectiveness and form an adaptive management framework and modify strategies as needed*

The wetland monitoring system is intended to provide a long-term means to track the values and functions of the wetlands, as well as the impacts of project interventions. It will be based on a series of indicators to be agreed upon by all stakeholders and could include feedback from the surveillance and monitoring team, local stakeholders' perceptions and more objective analyses of changes in land cover and vegetation. It is important to note that previous projects in Mauritania to establish similar systems of DRGN have reported that measurable changes in the natural systems are only apparent after several

years. In conjunction with the results of activities of A.1.27, strategies for restoration, maintenance or management will be adapted to improve measures of success.

Output 1.2.4 Capacity of key stakeholders in restoration and management of watersheds and wetlands improved

- *A.1.29. Provide training to CCBV stakeholders on concepts of watershed vulnerability and integrated watershed and wetland restoration and management*

The project will support targeted technical training of CCBV members and other stakeholders on key concepts of integrated watershed/wetland management, and the vulnerability of these resources to climate change and anthropogenic pressures. This training will aim to build the capacity of CCBV members to communicate effectively on these topics, and fulfil their mandate in the CCBV management framework.

- *A.1.30. Provide operational and organizational management training to ALGRN to build professional capacity to fulfil their mandate*

These trainings will include operational trainings to build the capacity of ALGRN to operate professionally. It will also include annual professional trainings in years 2, 3 and 4 for the surveillance and monitoring teams.

- *A.1.31. Provide trainings on restoration, protection and management strategies and success measures*

Technical trainings will be provided to build the capacity of local stakeholders (cooperatives, individuals) in strategies for wetland restoration and maintenance. These trainings are intended to build the level of engagement and capacity of community members to participate in the management of their resources.

- *A.1.32. Use experience to develop "best practices" wetland restoration and management guidance specific to Mauritania*

In year five of the project, the experiences of the project in improving the resilience of wetlands through DNRM will be used to develop practical guidance based on lessons learned from the project and the results of different strategies tested to maintain or improve the values and functions of the project wetland sites.

- *A.1.33. Work with partners to identify opportunities for institutionalize long-term protection of wetlands, using legal means or incentives*

As an active partner in the sphere of wetland management and improving adaptive capacity of wetlands and local communities, the project will promote an active dialogue on how to better institutionalize the long-term protection of wetlands and sustainable adaptive strategies. This will include closely examining the results of this project to assess whether it is successfully expanding sustainable systems for DRGN, and what more should and can be done to establish a legal framework and incentives that promotes long term protection.

Component 2: Improvement in the adaptive capacity and resilience of communities living adjacent to wetlands

Component two of this project aims to improve the adaptive capacity and resilience of populations adjacent to the three project wetlands through the adaptation and diversification of income-generating activities that are compatible with the sustainable use of natural resources and biodiversity.

To promote the maintenance of productive multi-use systems and the diversification of income-generating activities, and thus increase flexibility to respond to climate variation, the project will promote sustainable practices which are adapted to climate variability in several production systems: fisheries, non-timber forest products, agriculture and livestock. The project will also support the development of other income generating activities that are linked to wetlands but can be managed without a negative impact to wetland resources, such as tourism.

Activities under component two will be integrated into the coordinated systems of enhanced governance for DNRM being developed under component one. Thus, the simple management plans and RP developed under component two will comply with the rules and regulations regrouped under local conventions developed under component one and the local surveillance and monitoring teams

established under component one will play an essential role in regulating natural resource management (NRM) activities undertaken under component two and assuring these activities are implemented in a manner that reduces their negative impacts on the structure and functions of wetlands. Outcome 2.1 includes significant activities aimed at building the capacity of local communities, and in particular vulnerable groups within these communities, in sustainable NRM. This includes the development of adapted NRM strategies, technical trainings in NRM techniques and support for local cooperatives. It also includes ensuring that materials are available to the public and educators that provide information specific to Mauritania's wetlands to help raise awareness of the importance of wetlands and climate change to help change attitudes and behaviors in order to support the sustainable management and conservation of wetlands.

Outcome 2.1 Ecosystem-based management strategies adopted by communities living adjacent to three wetlands

Outcome 2.1 will build on existing local adaptive capacity to develop strategies and techniques to diversify livelihood activities which are climate friendly. Under output 2.1.1, the project will integrate traditional community knowledge with the results of additional baseline and value chain analyses to develop a series of adapted natural resource management strategies that are sustainable and do not contribute to wetland degradation or diminution. Recognizing that not all actors in producer groups are organized into cooperatives or associations, the value chain analyses will examine different modalities to engage stakeholders and promote the value of resources. The strategies elaborated are expected to combine current practices with improved technology and management techniques.

Within the frame of output 2.1.2, the project will provide support to implement the strategies developed under output 2.1.1. An open and transparent application process based on a set of defined criteria and overseen by a committee of key stakeholders will be used to identify and select beneficiaries of this support, which may be existing or new community-based associations or individuals. It is anticipated that three types of support will be provided: (i) training, (ii) equipment provided directly by the project and (ii) financial support in facilitating access to established local micro-credit/banking institutions. Together with the oversight committee, the project will establish mechanisms to monitor the support provided to local beneficiaries and its impacts.

Output 2.1.1 Climate-resilient livelihood strategies developed and disseminated

- *A.2.1. Baseline study of fisheries and development of proposed fisheries management and monitoring measures to improve long-term viability of fish stocks (e.g., zoning, quotas)*
- *A.2.2. Value chain analysis of fish and fishery products (local, regional, national)*
- *A.2.3. Simple management plans developed for management of fisheries and integrated with RP for management of wetlands*

Activities A.2.1-A.2.3 are concerned with the development of sustainable fisheries. All three of the selected sites have user groups that rely on fisheries and at all three sites stakeholders raised concerns over the status or management of these resources, which are essentially open access to certain groups of users. These concerns included the diminution of fish stocks at Tâmourt Bougary and disputes over access and rights, in particular as regards fishermen from Mali at Gâat Mahmoûda. There is a strong will to improve the management of this resource and capitalize on its potential value at all sites. The project will support (through international and national expertise) additional studies to evaluate fisheries and work with local stakeholders to develop simple management plans for these resources.

- *A.2.4. Baseline study on NTFP and development of proposed management measures and forest practices to improve long-term sustainability of NTFP (conditions of access and modalities of harvest)*
- *A.2.5. Value chain analysis of NTFP and NTFP-based products (local, regional, national)*
- *A.2.6. Simple management plans developed for management of NTFPs and integrated with RP for management of wetlands*

Activities A.2.4-A.2.6 are concerned with the development of sustainable management of non-timber forest products (e.g., wild foods such as tubers or honey, medicinal plants). NTFPs are a valuable resource for multiple groups at all three of the project sites, including women and Haratine. Baseline and value chain analyses (completed with the assistance of international and national expertise) will be used to assess their ecological, economic and cultural values and determine the potential to improve

and expand this production system. During the PPG mission, preliminary information was collected on NTFPs that are currently marketed at local, regional or national level.

- *A.2.7. Conduct "feasibility study" to assess potential for sustainable tourism at Matmata and Metréouka and develop an approach to support this livelihood activity*

Two tourist sites, Metréouka at Tâmourt Bougary and Matmata at Tâmourt en Na'âj, have been identified by local stakeholders as potential opportunities to capitalize on wetland values and improve income generation. The project will support a study to assess the potential of tourism to contribute to wetland conservation and the diversification of livelihoods, taking into consideration the potential market, modalities of access, products, benefit-sharing, management strategies, mitigation measures for any negative impacts and barriers to success (such as security).

- *A.2.8. Compile and document community knowledge and practices for agriculture and develop adaptive agriculture strategies that are compatible with wetland maintenance and management, and RP*

Agriculture (rain-fed and flood recession) is one of the main production systems at each of the three sites, where stakeholders reported serious management issues such as decreasing yields and the diminution of arable land. This activity aims to capitalize on traditional knowledge and practices (especially practices that provide adaptive capacity already) and explore innovative techniques or improved technologies to design a strategy to catalyze agricultural adaptation to climate change. This strategy could include a range of adjustment measures related to diversifying crops; promoting heat resistant, drought tolerant or other improved cultivars; the adoption of yield-increasing technologies; supporting commercialization or market development; improving the quality and value added of food commodities; soil and water conservation practices; or improved management practices such as shading and conservation agriculture. A key criterion of strategies that are promoted for testing will be their compatibility with local conditions and wetland maintenance, including RP established for each site. In consideration of different strategies, the project will also take into consideration socioeconomic barriers to their implementation and adoption. Techniques to improve market gardening will also be considered under this activity.

- *A.2.9. Engage with programs working on the development of infrastructure to provide water to livestock and assure coordinated planning and monitoring of impacts*
- *A.2.10. Develop strategies to experiment with fodder production that is compatible with wetland maintenance and management, RP and other income generating activities*

Livestock rearing (transhumant and sedentary) is one of the most important economic activities in rural areas, including at the three project sites. The important trend towards increased sedentarisation (especially around wetlands that supply vital resources and services) has had a significant impact on these ecosystems. In addition to assuring representation of pastoralists (including transhumant pastoralists) in the process to establish enhanced governance of the project sites, the project will undertake a series of activities (A.2.9-A.2.10 and A.2.20) that aim at adapting livestock strategies to make them more resilient to climate variability.

- *A.2.11. Assure integration and compatibility of management and monitoring measures with RP*

The project will work with user groups and ALGRN to assure adapted strategies for natural resource management and utilization take into consideration particular regimes developed for each site.

Output 2.1.2 Climate-resilient livelihood strategies implemented and evaluated for their effectiveness

- *A.2.12. Support/establish and equip fishing cooperatives (or other identified actors)*
- *A.2.13. Support implementation of techniques for sustainable fishery management, including transformation and commercialization*
- *A.2.14. Develop and apply a tracking system for fisheries management measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption*
- *A.2.15. Reflection exercises to evaluate experiences with fisheries management and techniques, and identify any modifications required to improve success*

Based on the outputs of A.2.1-A.2.3, the project will support the creation and operation of fishing cooperatives and provide these groups (or other actors identified in the scope of A.2.1-A.2.3) the

equipment necessary to implement techniques for sustainable fishery management. A tracking system will be employed to assure activities are implemented correctly as well as to monitor social and environmental impacts. Reflection exercises will be used to evaluate the process, capture any inadvertent social or environmental impacts and to inform an adaptive management approach.

- *A.2.16. Support/establish and equip NTFP cooperatives (or other identified actors)*
- *A.2.17. Support implementation of sustainable management of NTFP*
- *A.2.18. Develop and apply a tracking system for NTFP management measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption*
- *A.2.19. Reflection exercises to evaluate experiences with NTFP management and techniques, and identify any modifications required to improve success*

Based on the outputs of A.2.4-A.2.6, the project will support the creation and operation of NTFP cooperatives and provide these groups (or other identified actors identified in the scope of A.2.4-A.2.6) the equipment necessary for implementation of sustainable management of non-timber forest products. A tracking system will be employed to assure activities are implemented correctly as well as to monitor social and environmental impacts. Reflection exercises will be used to evaluate the process, capture any inadvertent social or environmental impacts and to inform an adaptive management approach.

- *A.2.20. Promote tourism promotion and marketing for Matmata and Metréouka*
- *A.2.21. Support local tourism services at Matmata and Metréouka*
- *A.2.22. Develop and apply a tracking system to monitor tourism activities and impacts*

As recommended by the output of A.2.7, the project will support the promotion of tourism at Matmata and Metréouka. This support will include, promotion marketing and supporting local tourism services as well as the development of a simple tracking tool to assess impacts.

- *A.2.23. Implement soil protection measures to prevent loss or reduced fertility*

Based on consultations with local stakeholders the implementation of soil protection measures has been identified as an early action initiative that will be launched to contribute to the overall objective of supporting local livelihoods and improving the status of natural resources.

- *A.2.24. Install fencing (as agreed based on vision for maintenance of a multiple use system)*

The installation of fencing is anticipated to form part of measures to promote the sustainability of a multi-use system. It has been identified as a need in multiple sites to support management objectives and facilitate the differentiation of use zones.

- *A.2.25. Support implementation of sustainable gardening practices*

Market gardening is an important economic and food security activity for certain user groups, particularly women in the project sites. Stakeholders reported that this activity has become more important given the decreasing yields of other agricultural systems. Women's cooperatives have been developed in some areas to better organize this activity and the project will work to support this production system based on the outputs of activity A.2.8.

- *A.2.26. Support/establish and equip agricultural/horticulture cooperatives including women cooperatives*
- *A.2.27. Promote and support implementation of agricultural adaptation*
- *A.2.28. Develop and apply a tracking system for agricultural adaptation measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption*
- *A.2.29. Reflection exercises to evaluate experiences with agricultural adaptation, and identify any modifications required to improve success*

Based on the outputs of A.2.8, the project will support the creation and operation of agricultural cooperatives, and provide these groups equipment necessary for implementation of agricultural adaptation techniques. A tracking system will be employed to assure activities are implemented correctly as well as to monitor social and environmental impacts. Reflection exercises will be used to evaluate the process, capture any inadvertent social or environmental impacts and to inform an adaptive management approach.

- *A.2.30. Support experiments to improve fodder production that is compatible with wetland maintenance and other income generating activities*

Based on the outputs of A.2.9-A.2.11, the project will support the implementation of activities to adapt livestock strategies and make them more resilient to climate variability.

Output 2.1.3 Technical capacities to implement climate-resilient livelihood strategies strengthened

- *A.2.31. Trainings (including targeted training for women) on fisheries techniques, processing, preservation and marketing of fish and fishery products*
- *A.2.32. Trainings (including targeted training for women) on collection, processing/transformation and marketing of NTFP*
- *A.2.33. Trainings for eco-guides at Matmata and Metréouka*
- *A.2.34. Trainings on water and soil conservation at farm level*
- *A.2.35. Trainings on sustainable gardening principles and practices*
- *A.2.36. Trainings (including targeted training for vulnerable groups) on agriculture adaptation measures*
- *A.2.37. Trainings on measures for pastoralism adaptation*

The project will undertake significant efforts to build the technical capacity of different user groups to implement and adapt strategies for the series of adapted natural resource management and income generating strategies developed under outputs 2.1.1 and 2.1.2. Based on an indicative assessment of user groups in each of the project sites, training and capacity exercises have been proposed for groups vulnerable to social and economic marginalization. The project will work to build the capacity of women and Haratine to improve their ability to implement adaptive strategies and diversify their livelihoods in production systems in which they are key contributors. These include various types of agriculture, NTFP production and in some cases fisheries. In sites where associations or cooperatives have already been created, the project will work with these groups to build on existing capacity.

Output 2.1.4 Local stakeholders understanding raised on the causes of wetland degradation, the effects of climate change and management solutions

This output is focused on building awareness and assuring improved access to information on the importance of wetlands and the impacts of climate change among key stakeholders in the areas adjacent to project wetland sites. Understanding that climate change adaptation requires learning new knowledge and skills, and changing behaviors, most activities are geared towards the education of children.

- *A.2.38. Lead reflection exercise on perceptions and practices related to wetlands, and develop key messages on wetlands, vulnerability and responses for target audiences*

This activity will serve as the foundation to develop clear messages. It will also serve as a basis to monitor the impacts of awareness and educational activities. Messaging will integrate traditional knowledge on practices to manage risks associated with climate variability with new techniques to spread or mitigate risks related to climate change and anthropogenic pressures, including concepts of sustainable natural resource management and livelihood diversification. The idea of future climate scenarios and their implications will also be addressed.

- *A.2.39. Production of educational materials*

A series of education materials, based on the messaging developed under A.2.38, will be developed for incorporation in local schools' curriculums and distribution to other key stakeholders. The planning and production of materials will be tracked through the project's communications plan in close collaboration with the appropriate departments in charge of national education systems.

- *A.2.40. Dissemination of communication products and educational materials, and trainings on their use*

The project will support the distribution of education materials through the appropriate education channels to assure that are used by departments of national education. It will also provide training to local educators on the integration of educational tools into their curriculum and how to assess the impacts of lessons.

- *A.2.41. Production of project support materials*

Project support materials (e.g., signs, posters) on the rules and regulations for resource use and resource use zones, as well as protected species, will be developed and installed or distributed in each wetland site.

Component 3: Wetland knowledge management

This component is aimed at improving the knowledge base and access to information on Mauritania's wetlands by supporting the creation of a national database and geographic information system (GIS) on wetlands. The outputs will improve capacity to manage and monitor the values and functions of wetlands, in support of the SNCZH. It will also be used to improve people's understanding of the status and trends of wetlands, including the effects of climate change. In accordance with its mandate on wetland management, the system will be hosted by the DAPL of the MEDD.

Outcome 3.1 Improved knowledge management system for climate-resilient wetland ecosystems

Output 3.1.1 A geo-referenced information system on Mauritania's wetlands, key climate features and ecosystems services is established and functional

- *A.3.1. Establish structure for governance of information management system*

The project management unit will work with partners to establish a committee of stakeholders (e.g, MEDD, IUCN, Nouakchott University, national NGOs) to oversee the establishment and management of the wetland information system. The system will integrate an exhaustive and detailed national database of wetlands with a geographic information system. The committee will be responsible for developing clear guidelines for the safeguarding and sharing of data. A commitment to assuring an open access policy will be set. The committee will also be responsible for identifying the data to be managed and tracked. This data will include wetland characteristics and indicators to track the values and functions of wetlands, as well as complimentary socio-economic indicators that can be used to analyze the relationships between wetlands and communities. Assuring the committee includes technical expertise familiar with wetland properties and functions as well as managers who can provide insight on the types of information necessary to inform decisions will be important.

- *A.3.2. Develop and maintain a GIS-based information management system to track a set of indicators on wetlands' conditions and functions*

External technical expertise will work with the committee to develop the database structure based on a set of identified information and indicators, and will provide training on populating, managing and applying the information management system. The project will support the costs of a manager for the national wetlands information. The manager will have the appropriate database and GIS skills to assure the day-to-day management of the system.

- *A.3.3. Work with partners to fill in knowledge and address knowledge gaps on wetlands' conditions and functions*

The committee and information management system manager will work with partners to populate the information management system and fill in any information gaps. The aim will be to establish an exhaustive and detailed inventory of Mauritania's wetlands. This activity will include field missions by the national wetlands information manager or partners to collect or compile information.

- *A.3.4. Generate most up-to-date information on Mauritania's wetlands and use analyses to advocate on the importance of wetlands and inform decision-making*

The information management system will be designed to generate data and inform analyses on the properties and status of Mauritania's wetlands. A series of communication products will be developed to share the results with stakeholders on a regular basis. These products may include web-based tools as well as fact sheets or reports.

Component 4: Project communication, monitoring and assessment

Component 4 is concerned with assuring project communication, monitoring and assessment allow the project to be implemented successfully using an adaptive management approach. It also assures that

communication on the project is well coordinated to support the achievement of results, their uptake and scaling up.

Outcome 4.1 Project implemented based on RBM and lessons learned/best practices documented and disseminated

Output 4.1.1 Project Monitoring & Evaluation Plan and system in place

- *A.4.1. Establish a results-based Monitoring & Evaluation plan*

A Monitoring & Evaluation plan will be developed by project staff that allows stakeholders to monitor and periodically evaluate the level of advancement of the project and the degree of achievement of project results. This plan will be used to support a results-based management approach that can be adapted based on lessons learned. The plan will integrate a set of measurable indicators to track progress relative to baseline values and capitalize on the monitoring and tracking systems developed under components 1 and 2. Information gained though monitoring will be disseminated as part of the communication strategy under Activity 4.7.

- *A.4.2. Organize project quarterly and annual reporting, review and planning, and undertake Monitoring & Evaluation missions*

Quarterly and annual technical and financial reports will be prepared. Local executing agency will contribute to annual reports to be consolidated by the project, validated by IUCN for submission to the GEF. Annual planning workshops will be organized to analyze the progress made and plan for next year. Periodic monitoring and supervision missions will be organized to assess the course of project, compile M&E data and update the performance indicators.

Output 4.1.2 Project risks monitored throughout project implementation

- *A.4.3. Review risk analysis and take measures*

Risk analysis and mitigation measures will be regularily reviewed by project staff to assure their effectiveness and make any adjustments or refinements to improve their effectiveness. The review will also look at any new risks that might have come up and that would need to be addressed. The review includes reviewing environmental and social risks.

Output 4.1.3 Communication strategy developed and implemented

- *A.4.4. Develop and implement a communication strategy*

A communication strategy that supports the project's goal will be designed and implemented. The strategy will target numerous stakeholders who will have to change their behaviors to achieve project results, including local communities and various levels of administration. The strategy will be developed in coordination with activities proposed under other components, including outcome 2.1.4 which aims at improving understanding and raising awareness. It will consider a variety of means and tools to share information and communicate on issues of natural resource management and 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. As part of the strategy, the project will create communication materials and coordinate appropriate dissemination to assure effective project communication in support of overall goal and objectives.

- *A.4.5. Organize annual wetland appreciation days*

The project will accompany a process to hold annual wetland appreciation days. These days are intended to raise awareness on wetlands and climate change in a fun and interactive manner.

Output 4.1.4 Mid-term and Final Project Evaluations completed

- *A.4.6. Organize project mid-term and final evaluations*

The project will engage external and national consultant(s) to lead a mid-term review and a final evaluation mission. Terms of reference for each of these missions will be developed including the scope, objectives and expected outcomes.

Project Management Cost (PMC)

Outcome 5.1 Project is effectively and efficiently managed

Output 5.1.1 Project management units established and functional

- *A.5.1. Appoint the project management unit*

A project team of 11 staff will be recruited to ensure effective and efficient execution of the project activities (see Section 5.2). The details of the staff are described in the project organization chart and terms of reference will be developed for each position.

- *A.5.2. Procure office equipment*

The project will provide equipment (e.g., four vehicles, thirty-four motorcycles, field gear, computers) to assure the working conditions for effective and efficient implementation of the field activities (see Appendix 9). This equipment will be acquired following IUCN procurement policies.

4.4 Risk analysis and risk management measures

A limited number of risks have been identified - external risks, technical & operational risks and environmental & social risks. Measures to mitigate these risks have been integrated into project design as demonstrated in Table 8. The risk level describes the residual risks taking into consideration that mitigation measures are implemented. References to relevant activities is provided in Table 8.

Table 8. Project risks and mitigation measures

Risk Description	Level	Mitigation measure(s)
External risks		
Climate variability (e.g., prolonged droughts and rising temperatures negate positive effects of project interventions)	High	Improve management and dissemination of information on climate change and wetlands (A.2.38-A.2.40, A.3.4); support improved management of watersheds and wetlands (A.1.9, A.1.25-A.1.26); support the diversification of livelihood options (A.2.1-A.2.37); coordinate with other initiatives to mitigate risks from climate variability (A.1.18).
Technical & operational risks		
Low level of cooperation and coordination between stakeholders (e.g., amongst sectors)	Low	Assure adequate analysis and engagement of stakeholders as part of process to establish ALGRN and CCBV (A.1.1, A.1.7, A.1.11-A.1.14); assure participation of institutional actors associated with water management (A.1.1); assure participation and engagement of local authorities (e.g., communes) (A.1.11-A.1.14); undertake participatory vulnerability assessments and scenario planning to bring stakeholders together and assure collective understanding (A.1.7); support regular meetings and communication between stakeholders (A.1.4, A.1.12).
Weak implementation capacity at the local and institutional levels	Medium	Training and other assistance for institutions, community-based organizations and local community members (A.1.29-A.1.31, A.2.31-A.2.37); tracking and monitoring to evaluate effectiveness and adapt as necessary (A.1.10, A.1.27-A.1.28, A.2.15, A.2.19, A.2.22, A.2.29, A.3.2)

Low compliance with resource regulations and/or ineffective compliance mechanisms	Medium	Ensure that processes to develop local conventions detailing principles and rules for the management of natural resources is community driven (A.1.21-A.1.24); assure adequate communication on regulations and their benefits (A.1.21); build capacity for community surveillance networks (A.1.15); promote positive incentives for compliance (A.1.15).
Lack of ownership of the wetland information system	Medium	Assure adequate analysis and engagement of stakeholders as part of process to establish the system (A.3.1); build capacity to maintain and use the system (A.3.2); support efforts to populate the system with accurate information (A.3.3).
Environmental & social risks		
Risks of livelihood loss caused by the restricting access to wetland resources through resource use rules and zoning regulations (in particular for vulnerable groups)	Low	The Standard on Involuntary Resettlement/Access Restrictions is not triggered as the project does not involve land use change established under formal frameworks. Instead it is considered that communities will be the driver of changes on resource use regimes themselves for the purpose of sustaining long-term use of the resources. However, care has to be taken by the project to avoid adverse social impacts and it needs to be ensured that the community decision process is adequate and reflects voluntary, informed consensus; and if adverse impacts are identified on vulnerable members of the community, that these are mitigated by appropriate measures. This is appropriately reflected in the project concept through the following activities: Assess resource dependency of social groups (A 1.19); support systematic consultation with vulnerable groups ensure adequate decision-making process reflecting voluntary and informed consensus of all relevant stakeholders (A.1.11-A.1.14); appropriate mitigation measures will be agreed and put in place if adverse impacts on vulnerable groups are identified (A.1.19, A.1.21-A.1.22); put in place positive mechanisms to promote the integration of these groups and their access to benefits provided by the project ; ensure transparency.
Watershed/wetland management activities may affect physical cultural resources	Low	The probability is considered low, but the project will monitor this risk (A.4.1). Chance Find Procedures will be available and communicated to relevant staff/operators to avoid damaging buried resources encountered unexpectedly during civil work.
Conflicts between different user groups over competition for access and rights to resources	Low	The existence of competition for resources is one of the reasons for initiating this project. Project design addresses the risk in many ways: ensure understanding of causes of wetland degradation and effects of climate change, of the process and potential benefits, across stakeholders (A.1.6-A.1.7, A.1.19-A.1.20, A.2.38-A.2.40); ensure participative process and inclusive consultation and negotiations when establishing ALGRN and developing local conventions, carte des vocations, RP and simple management plans (A.1.11, A.1.14); promote transparency, open

		communication and equal access to benefits through representative ALGRN (A.1.13); establish mechanisms for grievance mediation and conflict resolution (A.1.16).
Low uptake of adapted livelihood strategies	Medium	Build on traditional knowledge to establish effective adaptive strategies (A.1.21, A.2.8); improve understanding of current and projected impacts of climatic (e.g. rainfall variability) and non-climatic (e.g. population growth, economic development) stressors; communicate clearly on the benefits of improved practices; ensure that the identified strategies have a potential to translate into tangible benefits (increased income or food security) (A.2.14-A.2.15, A.2.18-A.2.19, A.2.22, A.2.28-A.2.29), provide training and other support to enable adoption of adapted practices (A.2.31-A.2.37); encourage monitoring and communication to demonstrate impacts and adapt practices as necessary (A.2.14-A.2.15, A.2.18-A.2.19, A.2.22, A.2.28-A.2.29).
Increased migration to wetlands under improved management	Low	Assure diagnostic assessments, scenario planning and management mechanisms take this risk into consideration (A.1.6-A.1.7, A.1.19); identify and implement appropriate restoration/maintenance/management strategies (A.1.21).
Risks of species introduced as part of the restoration develop invasive behavior	Low	Project recommends against using any non-native species in afforestation activities (A.1.21).

4.5 Consistency with national priorities and plans

The project is highly consistent with national priorities, plans, and policies (Table 9).

Table 9. Alignment of the project with key national priorities, plans and policies

National Priorities	Project Consistency
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, including those aimed at developing the mechanisms and capacity for local communities to govern and manage natural resources; activities that will help to diversify and adapt the livelihood strategies of local populations; and activities to build capacity to monitor and manage information on wetlands. These activities are directly within the framework of the second axis of the PANEDD, which focuses on establishing integrated and sustainable management of natural resources and biodiversity. It promotes the establishment of DNRM, and specifically mentions the transfer of responsibility for management to local bodies. In addition, it includes specific objectives promoting integrated water basin management, as well as the rehabilitation and integrated and sustainable management of wetlands, and highlights the importance of reinforcing the resilience of vulnerable populations in the face of climate change. The PANEDD also advocates for specific activities concerned with managing the impacts of climate change within important production systems (i.e., agro-pastoral, wood energy, NTFPs, fisheries) and stresses the importance of

	improving monitoring of the environment and associated information management. All of these components have been integrated in the project design.
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. This commitment to decentralization has been reflected in the legal framework governing rights and conditions for access to resources, including the Water Code, the Forest Code and the Pastoral Code. Based on this legal framework, the project will support the establishment of DNRM.
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 serves as Mauritania's focal point for the UNFCCC and has coordinated the preparation of three National Communications (NC) submitted to the UNFCCC in 2002, 2008 and 2014. As detailed in the Intended Nationally Determined Contribution (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 countries adaptation strategy has been developed in consideration of their participation in the UNFCCC, the UNCCD and the CBD.
National Strategy and Action Plan for Biodiversity for 2011-2020 (NBSAP)	Mauritania's priorities for biodiversity are laid out in its NBSAP, with a vision to preserve, restore and grow living diversity in all areas of Mauritania. Its objective is to maintain, in the long-term, the functioning of ecosystems and their capacity for adaptation and evolution. The plan is structured around six strategic orientations with 14 objectives. Among the objectives that relate directly to this project are the following: protect spaces and their species, preserve ecosystems and their functioning, reduce pressures on biodiversity, guarantee sustainable use of biological resources, assure equitable benefit sharing from the use of biodiversity, assure coherence of policies and reinforce governance as regards biodiversity. The strategy also stresses the importance of building the capacity of institutions responsible for NRM, including the MEDD, and local communes responsible for DNRM.

National Strategy for the Conservation of Wetlands (SNCZH)	The project is fully within the framework of the SNCZH and its objective to conserve, restore and sustainably use wetlands and their associated biodiversity, with the aim of ameliorating the conditions of local populations and guaranteeing sustainability for future generations. The program provides an important opportunity to implement this strategy for three inland wetlands and contributes to multiple of the plan's strategic axes, including: putting in place a system of governance; preserving and restoring wetlands; regulating access to wetland resources; improving the management of watersheds; developing sustainable practices for agriculture and pastoralism in wetlands; animating and implementing a strategy to conserve wetlands; reinforcing institutional and human capacity; reinforcing technical and scientific capacity; promoting sustainable techniques for the exploitation of resources; and developing income generating activities that are compatible with the management of wetlands.
National Strategy for the Institutionalization of Gender Equity (SNIG)	The project has been designed and will be implemented to support the SNIG. It will work to assure representation of women in governance and management systems, and contribute to building their economic presence. Multiple activities targeting women and promoting their empowerment in natural resource management have been included.

4.6 Project alignment with IUCN Programme

IUCN's mission is "to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable." In doing so, IUCN envisions "a just world that values and conserves nature".

The IUCN Programme 2017-2020 has the two following overarching objectives: (i) to mobilize the world community to act collectively and at all levels to prevent the loss and degradation of biodiversity, more specifically by halting the species extinction crisis and by ensuring ecosystem integrity in order to enhance the resilience of healthy natural ecosystems on which all human societies depend to prosper; and (ii) to promote equity and social justice, valuable in their own right, but particularly in the context of conservation work.

To support its mission, the 2017-2020 IUCN program is composed of three Programme Areas:

- Programme Area 1: Valuing and conserving nature;
- Programme Area 2: Promoting and supporting effective and equitable governance of natural resources; and
- Programme Area 3: Deploying nature-based solution to address societal challenges including climate change and food security.

The proposed GEF project is aligned to the IUCN Programme and will contribute in particular to the following sub-results of each of the Programme Area:

- SR 2.2: Governance at national and subnational levels related to nature and natural resources is strengthened through the application of the rights-based approach, and incorporation of good governance principles
- SR 3.3: Intact, modified and degraded landscapes, seascapes and watersheds that deliver direct benefits for society are equitably protected, managed and/or restored.

IUCN has a Central and West Africa Programme (PACO), which includes a country office in Mauritania. The proposed project offers synergies with at least one of the four PACO thematic programmes, namely the Water and Wetlands Programme.

4.7 Incremental[4] cost reasoning (for GEF projects)

The baseline for this project is defined by the IGMVSS project and other previous interventions in the project areas. The project will build on the experiences and lessons learned of other projects that have worked to establish DNRM in other geographic areas, including most notably the ProGRN supported by the German Cooperation and implemented in partnership with the MEDD, and integrate the knowledge of best practices for wetland management and sustainable adaptation of production practices attained through other projects working in these thematic areas (e.g. National Park Banc d'Arguin).

As detailed in Section 3.5, the baseline projects are primarily targeted towards improving production and food security through sustainable land management; the value added by the four components of this project are significant (Table 10). The baseline projects will primarily invest in activities related to forestry and agro-forestry, combatting deforestation and generating income for local communities. This LDCF project is additional as it represents a targeted response to address climate change stressors together with anthropogenic stressors in wetland areas, which are an important part of the resource base upon which local communities depend. These wetlands also play a significant role in the provisioning of multiple services (e.g., microclimate, water and food provisioning) and preserving biodiversity. Without the specific response proposed by this LDCF project and its ecosystem-based approach to building resilience, infrastructure development would likely continue to be the main response to the impacts of climate variability and change, including desertification, within the area of project intervention.

The project is also additional to the overall portfolio of work on wetlands in Mauritania, where the response to climate change has been largely concentrated to coastal areas. Without the project, there would be limited response to the threat of climate change on continental wetlands. By choosing three inland wetlands with significantly different characteristics (e.g., type, size), the project will provide an important learning opportunity for strategic approaches that can be replicated in other sites. Finally, the project will work to support improved knowledge management as concerns wetlands through the creation of a national database and GIS. The lack of such a system at present is a barrier to managing these resources in the face of considerable climate threats.

Table 10. Detailed incremental reasoning

Business as usual scenario	**Alternative scenario with the GEF resources**
Component 1: Restoration and management of wetlands	
The State has committed to a process of decentralization and has established a legal and regulatory framework to operationalize this process in various sectors of natural resource management. At present, there is insufficient administrative, institutional and local capacity to develop and implement DNRM in many ecologically, socially and economically important inland wetlands. This is contributing to the degradation of said ecosystems, which are already very sensitive to climatic and anthropogenic stressors. The lack of participatory, local governance and	Component 1 is structured to align with and reinforce governance and management systems for decentralized natural resource management. Under this component, decentralized governance structures will be established and have their mandates officially recognized per the legal framework of Mauritania. This provides an important framework to develop a series of management tools and implement priority actions that are critical to pro-actively manage resources in the face of climate variability and

[4] For climate change adaptation projects to be financed under the GEF, this section will be replaced by an analysis of the "additional cost reasoning".

Business as usual scenario	**Alternative scenario with the GEF resources**
management systems also contributes to increased conflicts. Previous and ongoing projects have demonstrated positive social and environmental impacts by establishing DNRM in other areas of Mauritania. At present, no operational mechanisms for coordination and planning exist at the watershed level in any of the proposed project sites. And no established systems for DNRM focusing on the entirety of wetland resources are operational at the three selected wetlands. Local communes have not been in a position to develop mechanisms to transfer responsibility for management to other local associations, and local stakeholders require additional information and capacity to sustainably manage the resources upon which they depend. Current management systems (which are largely based on open access) are unable to address all threats and without this project, wetland ecosystems will most likely continue to be degraded and their resources overexploited. This will have negative impacts to biodiversity and local livelihoods.	social changes (e.g., demographic growth, urbanization). Specifically, the project will work with stakeholders involved in watershed and wetland management, including regional delegations of ministries, local authorities (e.g., communes), notables, community-based organizations and different production groups to undertake a process to establish CCBV and ALGRN, and build their capacity to officially assume responsibility for NRM (per the existing legal and regulatory framework). The project strategy calls for extensive consultations and negotiations with these groups to assure ownership of the process. Technical support will also be provided to develop a series of management tools (including priority action and simple management plans) based on diagnostic assessments at the watershed and wetland levels. These assessments will integrate participatory vulnerability and scenario planning exercises. The intervention strategy integrates 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 to support the restoration, maintenance and management of wetlands (including the enforcement of community-driven regulations for resource use). Under this scenario, stakeholders, including vulnerable groups, will have improved means to coordinate and manage their resources. They will also be empowered to undertake this responsibility. The overall impact will be a reduction in the diminution and degradation of wetlands, and a multiplication of co-benefits.
Co-financing: - IGMVSS/ANGMV: USD 800,000 - MAVA Foundation: USD 1,528,995	GEF funds: - USD: 2,234,849
Component 2: Improvement in the adaptive capacity and the resilience of communities living adjacent to three wetlands	
Rural populations in eastern Mauritania remain nearly completely dependent on the primary sector for their livelihoods and food security. The degradation of the resource base due to climatic and non-climatic factors is acute. This continuing degradation contributes to poverty and increases the vulnerability of these	Component two of this project aims to improve the adaptive capacity and resilience of populations adjacent to the three project wetlands through the adaptation and diversification of income-generating activities

Business as usual scenario	**Alternative scenario with the GEF resources**
ecosystems and their dependent communities to climate variability and change. Other ongoing and planned projects at these sites have, are or will be investing in rural development, improving income generation and/or addressing the impacts of climate change and human threats (e.g., erosion, desertification). Most of these projects focus on building capacity within the agriculture and pastoral sectors and are lacking an ecosystem-based approach. This continues to put wetlands and their associated biodiversity at risk and does not comprehensively address the problems associated with the degradation of the resource base. At present, current levels of technical, operational and financial capacity are insufficient for regional delegations of state institutions, local communes and production groups to develop and implement adapted NRM practices that are compatible with the sustainability of wetland ecosystems. There is an ongoing need to build on existing local adaptive capacity and traditional knowledge to develop said strategies, which will combine current practices with improved technology and management techniques.	that are compatible with the sustainable use of wetland resources and biodiversity. Under this scenario, the maintenance of productive multi-use systems will be improved, and local communities will benefit from a diversification of income-generating activities being implemented using sustainable practices adapted to climate variability and covering several production systems: fisheries, non-timber forest products, agriculture and livestock. These climate-resilient livelihood strategies will be implemented and evaluated for their effectiveness. Other income generating activities that are linked to wetlands but can be managed without a negative impact to wetland resources (e.g., tourism) will also be developed. Local communities, including the administration, regional delegations, community-based organizations and production groups (including vulnerable groups) will also benefit from significant technical, operational and financial capacity building. And understanding of the causes of wetland degradation and the effects of climate change, as well as management solutions, will be raised among key stakeholders. Other ongoing or planned projects dealing with rural development and adaptation will also benefit from this project's focus on developing the resilience of wetland ecosystems and local communities. Undertaking the activities proposed under Component 2 within the framework of official mechanisms for local and decentralized management (Component 1) remains important to improve ownership of improved natural resource management strategies and to motivate stakeholders to change behaviors.
Co-financing: - IGMVSS/ANGMV: USD 2,200,000 - MAVA Foundation: USD 152,900	GEF funds: - USD 1,300,425
Component 3: Wetland knowledge management	
At present there is no national system to manage information on wetlands and significant gaps exist in the understanding of wetlands. This lack of information negatively affects	Through Component 3 of this project, a geo-referenced information system on Mauritania's wetlands, key climate features and ecosystem services will be established and made

Business as usual scenario	**Alternative scenario with the GEF resources**
stakeholders' abilities to manage and monitor the values and functions of wetlands. Without this project this status would not change.	functional. The process to establish the system will provide an important opportunity for stakeholders to collaborate and share information. It will also represent an important opportunity to fill key information gaps, by establishing an exhaustive and detailed inventory of the country's wetlands. The information management system will be designed to generate data and inform analyses on the properties and status of Mauritania's wetlands, and provide an important tool to inform decision-making and advocate on the importance of wetlands. Component 3 will contribute to building the capacity of key stakeholders, in particular the DAPL of the MEDD, which has a specific mandate to assure the management of wetlands.
Co-financing: - IGMVSS/ANGMV: USD 0 - MAVA Foundation: USD 611,598	GEF funds: - USD 404,650
Component 4: Project communication, monitoring and assessment	
Clear data and information on the impacts of DNRM and strategic interventions to improve production and build resilience to climate change are limited in the selected project sites. This weakens the ownership and motivation of stakeholders to adopt improved and adapted practices and contributes to continuing degradation of natural resources.	The project will work to document the 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 DNRM. An ESMP will be used to assure the systematic application of standards to manage and mitigate any environmental and social impacts during the course of the project. Regular reviews of the ESMP will be used to assure its effectiveness and make any adjustments or refinements to improve its effectiveness. Finally, a communication strategy will be used to support the overall goal and objectives of the project. The strategy will target numerous stakeholders who will have to change their behaviors to achieve project results, including local communities and various levels of administration. It will also work to assure the impacts and the lessons learned from this project can be used to scale up and

Business as usual scenario	**Alternative scenario with the GEF resources**
	institutionalize successful measures and best practices developed during this project.
Co-financing: - IGMVSS/ANGMV: USD 225,000 - MAVA Foundation: USD 305,799	GEF funds: - USD 297,734

Incremental cost matrix

The following incremental cost matrix only presents the confirmed co-financing.

Table 11. Incremental cost matrix

Costs	**Baseline Costs (USD)**	**Alternative Scenario Costs (USD)**	**Incremental costs (USD)**
Component 1: MAVA IGMVSS **GEF funds**	 USD 1,528,995 USD 800,000	 USD 1,528,995 USD 800,000 USD 2,234,849	 USD 2,234,849
Component 2: MAVA IGMVSS **GEF funds**	 USD 152,900 USD 2,200,000	 USD 152,900 USD 2,200,000 USD 1,300,425	 USD 1,300,425
Component 3: MAVA IGMVSS **GEF funds**	 USD 611,598 USD 0	 USD 611,598 USD 0 USD 404,650	 USD 404,650
Component 4: MAVA IGMVSS **GEF funds**	 USD 305,799 USD 200,000	 USD 305,799 USD 200,000 USD 297,734	 USD 297,734
Project management costs MAVA IGMVSS **GEF funds**	 USD 458,699 USD 800,000	 USD 458,699 USD 800,000 USD 211,884	 USD 211,884
Sub-total (USD)	***USD 7,057,990***	***USD 11,507,532***	***USD 4,449,542***
Agency fees (USD)	*/*	USD *400,458*	USD *400,458*
Total (USD)	***USD 7,057,990***	***USD 11,907,990***	***USD 4,850,000***

Table 12. Distribution of the project budget by financing types

USD	**TA**	**INV**	**Total**
Comp1	386 250	1 848 599	**2 234 849**
Comp2	184 100	1 116 325	**1 300 425**
Comp3	203 350	201 300	**404 650**
Comp4	252 734	45 000	**297 734**
PMC	211 884	-	**211 884**
Total	1 238 318	3 211 224	**4 449 542**

Table 13. Distribution of the project budget by focal areas

USD	**CC**	**Total**
Comp1	2 234 849	**2 234 849**
Comp2	1 300 425	**1 300 425**
Comp3	404 650	**404 650**
Comp4	297 734	**297 734**
PMC	211 884	**211 884**
Total GEF Project Financing	4 449 542	**4 449 542**

Table 14. Co-financing

USD	**IGMVSS/ANGMV**	**Mava**	**Total**
Comp1	800 000	1 528 995	**2 328 995**
Comp2	2 200 000	152 900	**2 352 900**
Comp3		611 598	**611 598**
Comp4	200 000	305 799	**505 799**
PMC	800 000	458 699	**1 258 699**
Total	4 000 000	3 057 990	**7 057 990**

4.8 Sustainability

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 approach is built around: (i) the creation of decentralized, local governance systems, (ii) using a community-driven approach, (iii) the integration of economic considerations, (iv) capacity building, (v) improving knowledge management, and (vi) a strong national framework and commitment from stakeholders.

4.8.1 Financial and economic sustainability

The rural economy of south-eastern Mauritania is extremely vulnerable because of its nearly complete reliance on a narrow and degraded natural resource base that is extremely sensitive to climate variability and anthropogenic pressures. This sensitivity has contributed to significant social changes in Mauritania (e.g., urbanization in the face of droughts) and is expected to continue in the face of climatic and non-climatic stressors. This project will build the resilience of local communities by both addressing the degradation of the resource base and supporting the adoption of a diversity of adapted production

(i.e., agriculture, pastoralism, fisheries, NTFPs) practices upon which they rely for their livelihoods and well-being. The development of strategies to adapt production systems will be founded on traditional knowledge and will integrate considerations of economic and environmental sustainability. The result will be a series of "best practices" to support the maintenance of inland wetlands as resilient and multi-use systems. The entire process will be community-driven and implemented through mechanisms of decentralized natural resource management. The impacts will be monitored and analyzed with stakeholders to promote financial and economic sustainability.

4.8.2 Institutional sustainability

The sustainability of the project has been an important consideration since the inception of the project concept, and stakeholders at both national and local level have been involved in the project design process. Together with the baseline projects, the project will employ a community-driven, participatory approach to establish decentralized natural resource management governance systems, including CCBV and ALGRN. The project will support communities throughout the process to establish more sustainable institutions for natural resource management, including the elaboration of natural resource regulations and the development of adaptive production practices. It will also invest heavily in building the capacity of communities to establish and implement said management systems and practices, building their experience in negotiating with stakeholders, formulating action plans, applying new practices, working in cooperatives, monitoring and managing small projects and funds. The project's strategic approach and interventions were selected both because of their demonstrated ability to deliver results and their ability to be owned and sustained by local stakeholders. Future evaluations will be required to ascertain whether these associations remain functional and effective over the long-term. At the regional and national levels, institutions will be strengthened by involving them in the project and establishing a system for management of knowledge on wetlands.

The design of the project is fully aligned with Mauritania's national priorities and will be implemented within the framework of decentralization and other relevant national policies and regulations. The strong political will of participating ministries will be an important factor in sustaining the longevity of the projects outputs. The strong relationship between government institutions and the executing agency, as well as supporting organizations, will also contribute to sustaining project interventions and outputs.

4.9 Replication

The project's goal "to increase the resilience to climate change of three inland wetlands ecosystems and adjacent communities through an ecosystem-based management approach" and associated strategies are applicable and relevant well beyond the three wetlands being targeted by this project. First, the environmental and social issues this project will address are well recognized across the Sahel region and the project builds and expands on the experiences of other projects that have worked to establish DNRM and adapted production practices at the watershed and wetland level. Secondly, during the project preparation, contacts were established with representatives of government institutions, ongoing projects and donors so as to make information available on their experiences. The lessons learned from these projects have been reviewed and incorporated into the project design as applicable. These established contacts will be maintained to assure a sharing of lessons learned and the knowledge generated through this project, which could assist other initiatives working in areas such as wetland management and climate adaptation.

This project design is aligned with the established legal framework in Mauritania and is fully integrated into the SNCZH. It also includes a national component aiming at building institutional capacity, including the creation of a national system for improving and managing knowledge on wetlands across the country. The strong institutional link will facilitate replicating the same process in other areas. Being fully integrated into the Great Green Wall Initiative, the project will also be part of a broader intervention with its own established framework. This provides an important means for the lessons learned by the project to be replicated in other areas. As part of its communication plan, the project will implement outreach actions to ensure that the innovations and lessons derived from this project are communicated and made available to potential end-users and next-users of this information.

4.10 Communication and knowledge management

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 openly accessible and applied to

achieve project objectives. As part of their broader objectives, components 1 and 2 of the project design include multiple awareness raising activities. These activities target a range of stakeholders (i.e., local government, community leaders, resource managers, different production groups and children) and are aimed at building understanding of the causes of wetland degradation and the effects of climate change, as well as the implications of future climate scenarios and management solutions. A series of communication and education materials will be developed by the project using messaging that will integrate traditional knowledge with new techniques to spread or mitigate risks related to climate change and anthropogenic pressures, including concepts of sustainable natural resource management and livelihood diversification. All materials will be branded and marked according to project guidelines and GEF communication guidelines.

Component three of this project is aimed at improving the knowledge base and access to information on Mauritania's wetlands by supporting the creation of an exhaustive and detailed national database and GIS on wetlands. As part of outcome 3.1, the project management unit will work with partners to establish a committee of stakeholders to oversee the establishment and management of these tools. The committee will be responsible for developing clear guidelines for the safeguarding and sharing of data. A commitment to assuring an open access policy will be required. The tools will be designed to generate data and inform analyses on the properties and status of Mauritania's wetlands. A series of communication products will be developed to share the results with stakeholders on a regular basis. Theses outputs will improve capacity to manage and monitor the values and functions of wetlands, and will be used to improve people's understanding of the status and trends of wetlands, including the effects of climate change.

As part of Output 4.1.3, a communication strategy that supports the project's goal will be designed and implemented. The strategy will target numerous stakeholders who will have to change their behaviors to achieve project results, including local communities and different levels of the administration. The strategy will be developed in coordination with the numerous activities proposed under components 1, 2 and 3 aimed at improving understanding and raising awareness, and will consider a variety of means and tools to share information and communicate on issues of natural resource management and 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.

4.11 Environmental and social safeguards

This project aims to improve the resilience of three continental wetlands and build the adaptive capacity and resilience of local communities by establishing improved integrated wetland management. Simultaneously, the project will seek to improve the adaptive capacity and resilience of local communities through the adaptation and diversification of climate-proof livelihoods. Over 20,000 people live in the areas adjacent to the three wetlands selected for intervention in the scope of this project. The project will build on community knowledge and practices to develop and implement climate-proof strategies for natural resource management that are sustainable and can be adapted to respond to changing conditions. Without the intervention of this project, anthropogenic pressures will continue to negatively impact and degrade the three wetland sites 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. These households will also have reduced flexibility to respond to the impacts of climate change.

The project was screened on environmental and social risks at an early stage of project development; the Screening Report in Appendix 4 summarizes the findings of this process. The conclusion of the screening is that the project is expected to generate highly positive social and environmental benefits. Despite this expectation, a few social risks were identified which were assumed to be readily addressed by project design. The environmental impacts were found to be almost exclusively positive, with one minor risk associated with invasive species. This risk was addressed with the provision that afforestation activities funded by the project would only use native species. Finally, the screening found the risk of the project failing to address the impacts from climate change to be low given the project's explicit objective to improve resilience and reduce vulnerability to climate change. The Screening Report considered thethe identified risks as minor and/or readily addressed through design and classified the project as a low risk project.

The classification was to be further informed by a more detailed examination during the PPG phase, when analyzing the environmental and socio-economic context at the selected three wetland sites. A report on this supplemental evaluation is attached in Appendix 5. Despite being considered a low risk project, a regular review of the risk management matrix (table 8) is still recommended, to ensure that even low level risks are managed and monitored throughout implementation and that new risks are well perceived.

Based on the findings from the PPG field mission and taking the final project design into consideration, the project does not trigger any of the following standards; however, the following conclusions and recommendations on environmental and social risks were drawn:

Standard on Involuntary Resettlement and Access Restrictions

The establishment of improved integrated wetland management and adaptive production practices may be expected to include measures for regulating and restricting the use of and access to natural resources. The type and magnitude of any regulations will only be known during project implementation and subsequent to: watershed and wetland assessments (Output 1.1.2 & Output 1.2.2); vulnerability assessments and scenario planning (Output 1.1.2); and the process to identify appropriate restoration, maintenance and management strategies (Output 1.2.2). The process to establish regulations on access and use will be driven by the communities with the aim of ensuring long-term and sustianble usage of the natural resources they depend on. The process will be based on extensive consultations and negotiations with all relevant stakeholder groups to ensure that decisions reflect voluntary, informed consensus (Output 1.2.2). The project is designed to assure that vulnerable groups are well represented in the process and decision-making bodies. In case negative impacts are identified, mitigation of impacts will be sought through preferred access to assistance or benefits provided by the project under component 2 (promotion of climate-resilient livelihood strategies). Monitoring will be required to assure the effectiveness of the livelihood strategies throughout project implementation. Mechanisms for grievance mediation and conflict resolution will be established to help address any potential negative social impacts based on resource management recommendations.

The Standard is not triggered because any decision on regulating the use of resources will be community-driven, following an adequate decision-making process and reflecting voluntary and informed consensus. In case adverse impacts on the vulnerable members of the community are identified, if any, appropriate mitigation measures linked to component 2 will be agreed and put in place.

No resettlement of people will be undertaken.

Standard on Indigenous Peoples

During the project preparation phase, and more explicitly visits to the three proposed project sites, it was confirmed that no indigenous groups are present in the three wetland sites identified for the field intervention.

Standard on Cultural Heritage

The project does not intend to reduce access to cultural sites or develop benefits form cultural resources, but recognizes that there is a small risk that some watershed/wetland management activities may affect physical cultural resources. No such resources were identified during the course of project design. Given the PPG consultants were not able to visit the entirety of each wetland or adjacent sites proposed for project implementation, project management should continue to monitor the presence of cultural resources.. Chance Find Procedures will be available and communicated to staff and individuals involved in civil work involving excavations to avoid any damage in case buried cultural resources are encountered unexpectedly during such work.

Standard on Biodiversity Conservation and Sustainable Use of Natural Resources

The project logical framework and activities are designed to have a uniquely positive impact on biodiversity and the risks under this standard are low. To address any minor risks, the project recommends against using any non-native species in afforestation activities. The project also recommends close coordination with other known or planned projects, as identified during the site consultation process. The alignment of overall objectives between this project and other projects working to promote development and the sustainability of natural resources provides an important opportunity to mutually reinforce positive impacts. Close coordination with other projects and national

and local institutions will also be important to assure there is no potential to trigger negative effects. Under A.1.20 a series of in-depth studies are undertaken to better understand any identified restoration, maintenance or management issues that require particular attention and in order to avoid any unintended environmental knock-on impacts.

Other social or environmental impacts

More detailed examinations of the social and environmental context of each site undertaken as part of the PPG phase support the conclusion that the project's environmental and social outcomes should be highly positive overall. Despite this conclusion, the project recognized the importance of carefully considering the needs and the socio-economic context of women and vulnerable groups (including members of Haratine ethnic groups) in the project design. 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 women and vulnerable groups was undertaken. This assessment found that the legal and regulatory framework in Mauritania does not discriminate users by gender or ethnic group. However, in the wetland areas selected for this project, customary systems remain prevalent. In these systems social differentiation plays a significant part in determining the roles of various groups in production systems and in the sharing of benefits. It can also play a role as regards their representation in governance systems.

During site evaluations, PPG consultants met with women and other vulnerable groups to better understand their role in different production systems. The consultants worked with these groups to design targeted activities aiming at assuring (i) their understanding of their rights and (ii) their engagement in establishing DNRM governance and management systems. During the consultations, vulnerable groups raised concerns over their inclusion in decision-making bodies and any benefit-sharing mechanisms. The project design encourages extensive consultation with vulnerable groups as part of the process to establish representative governance bodies and insists on their inclusion in these bodies for DNRM. It also includes targeted activities to build their capacity to adapt, improve and diversify their income-generating activities. Finally, the project framework includes the creation of mechanisms for grievance mediation and conflict resolution. The importance of assuring such mechanisms was highlighted as one of the key principles for the effective establishment of DNRM by other similar projects in Mauritania.

Climate change risks

The project recognizes the value of taking future climate scenarios into consideration when developing management strategies for the three wetland sites and their resources. The project design has taken into consideration studies of observational records and models used to project changes in climate. These studies indicate that the Sahel region of West Africa has undergone significant changes to its climate and predict that wetland ecosystems in this region will continue to be at significant risk from both anthropogenic and climate related drivers of change in the future (Niang et al., 2014). Many Global Circulation Models (GCM) suggest a temperature rise of 2 to 3°C in the southern region of Mauritania, but remain inconclusive for rainfall patterns. This is attributed in part to the lack of consistent observational (or input) data. Despite the difficulties some models have simulated some aspects of the area's climate. Studies like Mbaye et al (2015) have demonstrated the consistency of models in predicting changes such as an increase of temperature, a decrease of precipitation and a decrease in availability of water resources. The project takes the impacts and risks associated with these changes into consideration in its overall approach. While sites specific scenario modeling was not feasible during the project development phase given the scale of the available climate change projections, data gaps and the resources associated with undertaking this type of analysis across three sites, the project design includes an activity to undertake participatory vulnerability assessments and scenario planning for each of the three wetlands/watersheds.

5 Institutional framework and implementation arrangements

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

5.1 National and local decision making and planning

The execution of the project will be under the responsibility of National Agency for the Great Green Wall of the Islamic Republic of Mauritania (ANGMV).

The Steering Committee (SC): The SC will serve as a national steering committee in an advisor capacity for implementation activities. Chaired by the Secretary general of the MEDD, proposed SC members would include representatives of the relevant MEDD directorates (CCPNCC, DAPL, DPCID, DPN, GEF focal point), representatives of other ministries (Ministry of Water and Sanitation, Ministry of Agriculture, Ministry of Livestock and Ministry of Fisheries and Maritime Economy), and representatives of the co-financiers (i.e., MAVA Foundation). IUCN will participate, as an observer. The final list of SC members will be completed during the project inception phase, but no later than three months after project kick off. 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.

Implementing Agency: IUCN is the implementing agency for the project. IUCN will support the ANGMV to ensure execution of administrative and financial matters and will assist in key technical and scientific issues. Its role will also be to consolidate results, directly facilitate workshops and the convening of key stakeholders (consistent with its comparative advantage in capacity building), and secure 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 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.

5.2 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) 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 ANGMV and will be based in the ANGMV headquarter in Nouakchott.

It will consist of 3 permanent staff:

- A National Project Coordinator appointed by the MEDD Minister, with an expertise in natural resource management and the environment;
- A Project Administrative and Finance Officer; and
- A Driver.

The PMU will be supported by the following technical experts. These staff members will be hosted by the ANGMV and will be based in Kiffa (Assaba), in the future ANGMV regional office or in the DREDD one, and at the three sites (field agents).

- A Wetland Expert (Activity 1.26);
- An Agriculture and Pastoralism Expert (Activity 2.24);

- Four Rural Development Technicians or field agents (Activity 2.13, 2.17, 2.23, 1nd 2.25); and
- Two Drivers (Activity 1.26 and Activity 2.24).

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.

5.3 Procurement plan

Procurement will be carried out in accordance with the Policy and Procedure on Procurement of Goods and Services of IUCN in October 2015. This policy aims at ensuring that executing agencies obtains value for money in all its procurement activities and that procurement is conducted in an efficient and cost-effective manner that respects sustainability, the environment and ethical principles. It therefore sets the procurement method depending on the value of Goods or Services, and includes the level of delegation of authority. The following defines procurement categories, methods and thresholds.

Procurement of goods and works: Goods and works comprise materials, supplies and the construction of physical infrastructure. All procurement of goods and works shall be carried out in accordance with the IUCN procurement policy (Table 15). However, the project does not plan for any physical infrastructure in the field.

Procurement of services: Services include those provided by consulting firms or individual consultants (including IUCN Members and commission members) educational and research institutions, service companies, and government and nongovernment organizations. All procurement of services shall be carried out in accordance with the IUCN procurement policy (Table 15).

Table 15. Required procurement process for different values

Value	Process	Media
≥ CHF 100,000	Formal Request for Proposal to a broad selection of potential suppliers. Optional formal pre-selection process to reduce number of proposals.	Must be advertised on IUCN website. Resulting award must also be published on IUCN website.
CHF 25,000 – 99,999	Minimum of 3 proposals from identified suitable suppliers	No advertising required
CHF 1 – 24,999	Competitive bidding not essential but should be considered where the benefits of competitive tendering in terms of price and quality will outweigh the costs.	No advertising required

Training Programs, Conferences, Workshops, etc.: All training and workshops will be carried out on the basis of the project's joint work plans and budgets approved by the IUCN, and which will among others, identify: (i) the envisaged training and workshops; (ii) the personnel to be trained; (iii) the institutions which will conduct the training; and (iv) duration of the proposed training.

Operating Costs: Operating Costs include office supplies, operation and maintenance of vehicles, maintenance of equipment, communication, rental, utilities, consumables, transport and accommodation, travel costs and per diem, etc. Operating costs procedures will follow the World Bank Procurement Guidelines.

Project Management Unit: Terms of reference for all full-time positions will be developed in close collaboration between IUCN and the executing agencies.

The procurement plan for good, non-consultant services and consultant services is provided in Appendix 9.

6 Stakeholder engagement and participation

Successful implementation of the project will depend on the active engagement and participation of stakeholders at multiple levels. This engagement process was launched during the design phase of the project and will continue during the duration of the project.

The primary stakeholders identified include:

- State government and administrative authorities, including at the level of Wilayas, Moughatâa and Communes;
- Ministerial departments and other public institutions (e.g., MEDD, MHA, ME, MA, MPEM)
- Regional delegations of ministries (e.g., DREDD)
- CCBV (to be created in the context of this project);
- ALGRN (to be created in the context of this project);
- Community-based organizations, such as cooperatives or associations;
- Individuals of different producer groups (e.g., pastoralists, collectors of NTFP), who may or may not be formally organized into community-based organizations;
- Academic or research institutions including IUCN Commissions members, notably the commission on Ecosystem Management (CEM);
- Non-governmental organizations, including IUCN Members in Mauritania; and
- Other ongoing or planned projects.

Stakeholder engagement and participation in design phase

During project design, stakeholders at national and local levels were consulted to gather information, discuss the project concept and risks, and debate strategies for intervention. These consultations took place through meetings and workshop in Nouakchott and site visits to each of the targeted wetlands. The objectives of site visits carried out between September 9-17, 2017 together with associated stakeholder consultations were to improve understanding of numerous aspects of the site, including the status of wetland values and function; characteristics of the current production systems; vulnerable groups that could be impacted by the project; current management and governance systems; and the level of engagement of local stakeholders. A detailed questionnaire was developed to inform stakeholder interviews at each of the project sites; indicative participatory mapping sessions were also implemented (Appendix 5). Table 16 presents the number of participants that attended the consultation meetings organized during site visits.

Table 16. Number of participants attending stakeholder consultation meetings during site visits (September 9-17, 2017)

Wetland	Locality	Number of participants	Number of women (%)
Tâmourt Bougary	Bougary	37	16 (43%)
Gâat Mahmoûda	Souleymanye	18	7 (39 %)
	Djegre	11	0 (0%)
Tâmourt Na'âj	Mechra	11	0 (0 %)

	Guebou	9	0 (0%)
	Nbeika	3	3 (100%)
	TOTAL	**89**	**26 (29%)**

In the course of national and local consultations, stakeholders were invited to share thoughts on the environmental and social issues they face and discuss key barriers to tackling these issues (e.g., lack of adequate information, absence of clear and representative mechanisms for the governance and management of natural resources, insufficient technical and operational capacity). The information collected was taken into careful consideration in the design of the project's logframe and activities. The resulting logframe and proposed activities were further shared and discussed with partners during a national level workshop in Nouakchott on November 21st, 2017. The list of participants is presented in Appendix 6. 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.

Stakeholder engagement and participation during project implementation

Specific roles of each stakeholder

During the stakeholder consultations presented above, the roles of different stakeholders (Table 17) were discussed. The mandates and roles detailed below reflect the outcomes of these discussions. It should be noted that not all stakeholders at the national level and across the three project sites could be met during the project design phase. Additional consultations will be required at project inception to refine the mandates and roles of certain stakeholders. The MEDD (as agreed in consultations during project design) and project staff will play important roles in carrying out additional outreach.

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: outreach to assure clear understanding of the DNRM process; consultations and negotiations as part of efforts to create CCBV and ALGRN and elaborate associated management tools; consultations as part of efforts to establish a national database on wetlands; technical and operational capacity building activities; educational activities; collective tracking and monitoring of progress and results; and the elaboration and implementation of a communication strategy. Project staff, national and regional services of public institutions and community-level stakeholders will be supported throughout the duration of the project to enable them to engage and implement their mandate. This will stimulate the empowerment of local stakeholders and strengthen their interventions in establishing decentralized governance and management mechanisms.

Table 17. Indicative roles of identified key stakeholder groups during project implementation

Stakeholder Engagement during Project Implementation		
Stakeholder	**Mandate**	**Role in project or other forms of engagement**
State government and decentralized authorities	Responsible for governance at different levels	- Set national, regional and local agenda and priorities - Recognize official mandate of CCBV and ALGRN - Participate in CCBV and ALGRN - Beneficiaries of capacity building activities
MEDD	Lead institutional partner	- Provide technical direction - Support establishment of CCBV and ALGRN - Outreach with other ministerial departments, public institutions, academic or research institutions, NGOs, etc. - Host of national database on wetlands - Replication and institutional sustainability - Beneficiaries of capacity building activities

Other ministerial departments and other public institutions	Institutional partners with national mandates for the management and use of natural resources	- Define agenda for and represent different sectors - Support establishment of CCBV (MHA) - Participate in CCBV
Academic or research institutions	Technical partners	- Members of committee of stakeholders to oversee the establishment and management of the wetland information system - Sources of knowledge on natural resources and best practices - Provisioning of technical support
Non-governmental organizations, including IUCN Members and commissions	Technical partners	- Sources of knowledge - Participants in committee of stakeholders to oversee the establishment and management of the wetland information system - Provisioning of technical support or being beneficiaries of capacity building activities (i.e., trainings, exchange visits)
Regional delegations, including DREDD	Regional delegations of ministries	- Work with authorities to establish DNRM - Work in collaboration with CCBV and ALGRN as well as other stakeholders to develop and implement resource regulations - Provide technical assistance in multiple fields of NRM - Recognize surveillance network
CCBV	Coordination committees at the level of watersheds	- To be created in the course of the project - Structures for multi-stakeholder engagement and coordination at the level of the watershed - Coordinate diagnostic assessments and scenario planning - Define priority actions - Coordinate, manage and monitor implementation of priority actions
ALGRN	Legally mandated, local and representative associations for the management of natural resources	- To be created in the course of the project - Decentralized mechanism for the administration of natural resources management over their reference area - Establish local convention - Coordinate wetland assessments - Consult and negotiate with stakeholders to define rules for natural resource management - Coordinate development of RP - Coordinate development of simple management plans
Producer groups	Local stakeholders	- Key local stakeholders - Representatives on ALGRN - Active participants in negotiations to establish rules for natural resource use - Sources of knowledge - Responsible for adhering to regulations on natural resource use and implementation of adapted production practices - Based on their needs, beneficiaries of capacity building activities (i.e., trainings, exchange visits, small grants)

Community-based organizations	Local cooperatives or associations operating within different production systems (e.g., agricultural cooperatives, women's cooperatives for gardening)	- Specific roles to be defined at project inception, based on identified needs - Represent community members interests in the project - Mobilizing community members to implement activities - Specific to each organization, they will be responsible for adhering to regulations on natural resource use and implementation of adapted production practices - Based on their needs, beneficiaries of capacity building activities (i.e., trainings, equipment, small grants)
Individual stakeholders	Actors in different value chains that are not part of formally organized groups	- Specific roles to be defined at project inception, based on identified needs - Based on their needs (as identified through stakeholder consultation, value chain analyses, etc.), beneficiaries of capacity building activities (i.e., trainings, equipment, small grants)
Other ongoing or planned projects	Mandate is specific to each project	- Sources of information on experiences and lessons learned - Potential opportunities for collaboration to maximize impacts, replication and sustainability

Support to community-based organizations

Within the frame of component 2, the project will work with local stakeholders to collect information on the need for capacity building among community-based organizations (Table 16). These beneficiaries may be existing or new community-based associations or individuals. It is anticipated that three types of support will be provided: (i) training, (ii) equipment provided directly by the project and (ii) financial support in facilitating access to established local micro-credit/banking institutions, and any beneficiaries will have to comply with the procedures of said institutions. An open and transparent application process based on a set of defined criteria will be used to identify and select the final beneficiaries. The selection process will be overseen by a committee of key stakeholders (e.g., the project, the commune, the ALGRN). It is important that this process be participatory in order to encourage stakeholder buy-in and to assure fairness and the coherence of support provided by the project with the commune's local development plan[5]. Together with the oversight committee, the project will establish a mechanism to monitor the support provided to local beneficiaries and its impacts.

7 Monitoring and evaluation 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

[5] see http://www.dgct.mr/wp-content/uploads/2016/03/GUIDE-PDC-FR_light.pdf

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 219,700. The detailed budget of the M&E plan is provided within the detailed budget of the overall GEF project (Appendix 8).

The overall monitoring and evaluation plan is summarized in Table 18 below.

Table 18. M&E activities, timeframe and responsibilities

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 project team	Activity 4.2 (Total activity budget USD 161,000)
3. Annual Project Progress Report	Annually	Project coordinator and project team in consultation with project stakeholders	
4. Tripartite Review / Project Implementation Review (PIR)	At 18 months	MEDD (National Executing Agency), National Project Coordinator, PMU, IUCN, etc	PMC
5. Independent External Evaluation	At the mid-point and end of project implementation	Implementing agency to hire audit experts	Activity 4.7 (Total activity budget USD 58,700)
6. Budget revisions	When necessary	Project team, IUCN headquarters	PMC

8 Project financing and budget

The overall project budget is 4,850,000 USD, excluding the PPG. It comprises the following items:

- Implementing Agency Fee: 400,458, USD;
- Activities Budget: 4,449,542 USD.
    - Component 1 – : USD 2,234,849
    - Component 2 - : USD 1,300,425
    - Component 3 - : USD 404,650
    - Component 4 - : USD 297,734
    - Project Management Cost - 211,884 USD

The activity summary budget and schedule are presented in the following tables. The detailed budget is provided in Appendix 8.

Table 19. Planned project budget by activity and by year

Activities	Details	TOTAL BUDGET	Year 1	Year 2	Year 3	Year 4	Year 5
Continental wetlands adaptation and resilience to climate change		**4 449 542**	**1 001 185**	**1 089 477**	**730 752**	**719 927**	**906 202**
Component 1	**Restoration and rehabilitation of wetlands**	**2 194 849**	**542 326**	**555 900**	**313 125**	**315 125**	**468 375**
Outcome 1.1	Improved management of three watersheds through integrated approaches						
Output 1.1.1	*Three CCBV established and operational*						
Activity 1.1	Identify relevant stakeholders, elaborate guiding principles and define	10 975	10 975	0	0	0	0
Activity 1.2	Obtain formal recognition of the three CCBV through a ministerial order	2 250	2 250	0	0	0	0
Activity 1.3	Establish and make operational CCBV	45 225	0	23 625	7 200	7 200	7 200
Activity 1.4	Hold semi-annual meetings of three CCBV within each watershed	12 000	0	3 000	3 000	3 000	3 000
Activity 1.5	Capitalize on experience with CCBV to inform, scale up and institutionalize systems for watershed management	10 975	0	0	0	0	10 975
Output 1.1.2	*Three plans of priority actions at the watershed level developed and implemented in support to restoration and management of three*						
Activity 1.6	Undertake diagnostic assessments of the three watersheds to better understand physical properties, hydrological flows and allocations, anthropogenic influences impacting hydrological flows, potential of	236 500	236 500	0	0	0	0
Activity 1.7	Undertake participatory vulnerability assessments and scenario planning for each of three wetlands/watersheds	9 200	9 200	0	0	0	0
Activity 1.8	Develop plans of priority actions at the watershed level to support restoration, maintenance and management of selected wetlands	9 200	9 200	0	0	0	0
Activity 1.9	Implement plans of priority actions	560 000	0	140 000	140 000	140 000	140 000
Activity 1.10	Develop and apply a tracking system to monitor progress of CCBV and priority action plans, as well as key characteristics of watershed	18 000	0	18 000	0	0	0
Outcome 1.2	Ecological structure and function of three wetlands covering 101,250 hectares restored and maintained through decentralized,						
Output 1.2.1	*Up to five ALGRN created and operational at three wetland sites*						
Activity 1.11	Build understanding of concept (legalities, mandate) of ALGRN among stakeholders at three wetland sites	12 125	12 125	0	0	0	0
Activity 1.12	Undertake participatory cartography and delimitation of wetland and areas of associated use to be managed (e.g., carte des vocations)	40 500	40 500	0	0	0	0
Activity 1.13	Officially create (i.e., obtain local convention to formalize transfer of management) and make operational five ALGRN	236 750	0	95 125	30 750	30 750	80 125
Activity 1.14	Undertake consultations to develop intercommunity vision for manageme	12 350	6 175	6 175	0	0	0
Activity 1.15	Put in place and support local surveillance and monitoring team	254 500	0	101 750	28 000	28 000	96 750
Activity 1.16	Establish mechanisms for grievance mediation and conflict resolution	4 500	0	1 125	1 125	1 125	1 125
Activity 1.17	Establish mechanisms to track functionality of ALGRN	0	0	0	0	0	0
Activity 1.18	Exchange and learning visits to sites with more established ALGRN	40 000	0	10 000	10 000	10 000	10 000
Output 1.2.2	*Local management conventions and Régimes Particuliers (RP) to restore, maintain and manage three wetlands (and their associated*						
Activity 1.19	Undertake diagnostic assessment of three wetlands to define physical properties (including land cover), values and functions, social and cultural uses, dynamics and impacts of multi-use systems, and	90 000	90 000	0	0	0	0
Activity 1.20	Undertake a series of in-depth studies to better understand any identified restoration, maintenance or management issues that require particular attention and in order to avoid any unintended negative	75 000	37 500	37 500	0	0	0
Activity 1.21	Identify appropriate restoration/maintenance/management strategies for three wetlands (taking into consideration climate variability and anthropogenic pressures)	3 000	1 500	1 500	0	0	0
Activity 1.22	Establish rules (including zoning) to be applied across the defined management area for each wetland and regroup said rules under local conventions	1 500	0	1 500	0	0	0
Activity 1.23	Develop Régimes Particuliers (RP) for any areas with particular economic or conservation potential, or that are particularly vulnerable to degradation	1 500	0	1 500	0	0	0
Activity 1.24	Develop and apply a tracking system to monitor progress of local conventions and RP	1 500	0	1 500	0	0	0
Output 1.2.3	*101,250 hectares of wetlands restored and maintained with improved management*						
Activity 1.25	Produce clear guidance on appropriate wetland restoration, maintenance and management strategies and success measures	0	0	0	0	0	0
Activity 1.26	Implement restoration, maintenance and management activities on wetlands (e.g., firebreaks, forest protection measures from domestic grazers)	405 749	77 101	82 150	82 150	82 150	82 200
Activity 1.27	Develop and apply a tracking system for restoration, protection and management strategies to ensure they are implemented correctly (and assure they do not have negative environmental impacts)	0	0	0	0	0	0
Activity 1.28	Establish a monitoring system (in conjunction with aforementioned tracking system) that can be used to evaluate effectiveness and form an adaptive management framework to modify strategies as needed	0	0	0	0	0	0

Output 1.2.4	*Capacity of key stakeholders in restoration and management of watersheds and wetlands improved*						
Activity 1.29	Provide training to CCBV stakeholders in concepts of watershed vulnerability and integrated watershed and wetland restoration and		9 300	3 400	3 400	3 400	0
Activity 1.30	Provide operational and technical training, and equipment to AGCL to build professional capacity to fulfil their mandate	25 275	0	14 025	3 750	3 750	3 750
Activity 1.31	Provide trainings on restoration, protection and management strategies and success measures	25 275	0	14 025	3 750	3 750	3 750
Activity 1.32	Use experience to develop "best practices" wetland restoration and management guidance specific to Mauritania	27 500	0	0	0	0	27 500
Activity 1.33	Work with partners to identify opportunities for institutionalize long-term protection of wetlands, using legal means or incentives	4 000	0	0	0	2 000	2 000
TOTAL Component 1		**2 194 849**	**542 326**	**555 900**	**313 125**	**315 125**	**468 375**

Activities	Details	TOTAL BUDGET	Year 1	Year 2	Year 3	Year 4	Year 5
Component 2	**Improvement in the adaptive capacity and resilience of communities living adjacent to wetlands**	**1 300 425**	**213 156**	**376 649**	**231 349**	**247 874**	**231 399**
Outcome 2.1	Ecosystem-based management strategies adopted by communities living adjacent to three wetlands						
Output 2.1.1	*Climate-resilient livelihood strategies developed and disseminated*						
Activity 2.1	Baseline study of fisheries and development of proposed fisheries management and monitoring measures to improve long-term viability of fish stocks (e.g., zoning, quotas)	53 250	26 625	26 625	-	-	-
Activity 2.2	Value chain analysis of fish and fishery products (local, regional, national)	7 500	3 750	3 750	-	-	-
Activity 2.3	Simple management plans developed for management of fisheries and integrated with RP for management of wetlands	1 500	-	1 500	-	-	-
Activity 2.4	Baseline study on NTFP and development of proposed management measures and forest practices to improve long-term sustainability of NTFP (conditions of access and modalities of harvest)	21 000	10 500	10 500	-	-	-
Activity 2.5	Value chain analysis of NTFP and NTFP-based products (local, regional, national	7 500	3 750	3 750	-	-	-
Activity 2.6	Simple management plans developed for management of NTFPs and integrated with RP for management of wetlands	2 250	-	2 250	-	-	-
Activity 2.7	Conduct "feasibility study" to assess sustainable tourism at Matmata and Metréouka define (define modalities of access, propose tourism products, propose strategies to manage tourism and mitigate any potential negative impacts)	8 750	0	8 750	0	0	0
Activity 2.8	Compile and document community knowledge and practices for agriculture and develop proposed adaptive agriculture strategies that are compatible with wetland maintenance and management, and RP	3 600	0	3 600	0	0	0
Activity 2.9	Engage with programs working on the development of infrastructure to provision water to livestock to assure coordinated planning and monitoring of impacts	3 750	750	750	750	750	750
Activity 2.10	Develop strategies to experiment with fodder production that is compatible with wetland maintenance and management, RP and other income generating activities	7 850	0	7 850	0	0	0
Activity 2.11	Assure integration and compatibility of management and monitoring measures with RP	1 500	-	1 500	-	-	-
Output 2.1.2	*Climate-resilient livelihood strategies implemented and evaluated for their effectiveness*						
Activity 2.12	Support/establish and equip fishing cooperatives (or other identified actors)	12 500	0	12 500	0	0	0
Activity 2.13	Support implementation of techniques for sustainable fishery management, including transformation and commercialization	127 750	14 750	28 250	28 250	28 250	28 250
Activity 2.14	Develop and apply a tracking system for fisheries management measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption	0	-	-	-	-	-
Activity 2.15	Reflection exercises to evaluate experiences with fisheries management and techniques, and identify any modifications required to improve success	3 000	-	750	750	750	750
Activity 2.16	Support/establish and equip NTFP cooperatives	12 500	0	12 500	0	0	0
Activity 2.17	Support implementation of sustainable management of non-timber forest products	117 750	14 750	25 750	25 750	25 750	25 750
Activity 2.18	Develop and apply a tracking system for NTFP management measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption	0	-	-	-	-	-
Activity 2.19	Reflection exercises to evaluate experiences with NTFP management and techniques, and identify any modifications required to improve success	*3 000*	0	750	750	750	750
Activity 2.20	Promote tourism promotion and marketing for Matmata and Metréouka	10 000	0	7 475	0	2 525	0
Activity 2.21	Support local tourism services at Matmata and Metréouka	20 000	0	5 000	5 000	5 000	5 000
Activity 2.22	Develop and apply a tracking system to monitor tourism activities and impacts	0	0	0	0	0	0
Activity 2.23	Implement soil protection measures to prevent loss or reduced fertility	164 000	32 000	33 000	33 000	33 000	33 000
Activity 2.24	Install fencing (as agreed based on vision for maintenance of a multiple use system)	60 000	0	15 000	15 000	15 000	15 000
Activity 2.25	Support implementation of sustainable gardening practices	115 250	14 750	25 125	25 125	25 125	25 125
Activity 2.26	Support/establish and equip agricultural/horticulture cooperatives including women cooperatives	12 500	0	12 500	0	0	0
Activity 2.27	Promote and support implementation of agricultural adaptation	334 525	78 181	64 074	64 074	64 074	64 124
Activity 2.28	Develop and apply a tracking system for agricultural adaptation measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption	0	0	0	0	0	0
Activity 2.29	Reflection exercises to evaluate experiences with agricultural adaptation, and identify any modifications required to improve success	3 000	0	750	750	750	750
Activity 2.30	Support experiments to improve fodder production that is compatible with wetland maintenance and other income generating activities	30 000	6 000	6 000	6 000	6 000	6 000

Output 2.1.3	*Technical capacities to implement climate-resilient livelihood strategies strengthened*						
Activity 2.31	Trainings (included targeted training for women) on fisheries techniques, processing, preservation and marketing of fish and fishery products	12 800	0	3 200	3 200	3 200	3 200
Activity 2.32	Trainings (included targeted training for women) on collection, processing/transformation and marketing of NTFP	12 800	0	3 200	3 200	3 200	3 200
Activity 2.33	Trainings for eco-guides at Matmata and Metréouka	12 800	0	3 200	3 200	3 200	3 200
Activity 2.34	Trainings on soil conservation	12 800	0	3 200	3 200	3 200	3 200
Activity 2.35	Trainings on sustainable gardening principles and practices	12 800	0	3 200	3 200	3 200	3 200
Activity 2.36	Trainings (included targeted training for vulnerable groups) on agriculture adaptation measures	12 800	0	3 200	3 200	3 200	3 200
Activity 2.37	Trainings on measures for pastoralism adaptation	12 800	0	3 200	3 200	3 200	3 200
Output 2.1.4	*Local stakeholders understanding raised on the causes of wetland degradation, the effects of climate change and management solutions*						
Activity 2.38	Lead reflection exercise on perceptions and practices related to wetlands, and develop key messages on wetlands, vulnerability and responses for target audiences	7 350	7 350	0	0	0	0
Activity 2.39	Production of communication and educational materials	21 000	0	14 000	0	7 000	0
Activity 2.40	Dissemination of communication products and educational materials, and trainings on their use	17 250	0	6 000	3 750	3 750	3 750
Activity 2.41	Production of project support materials	21 000	0	14 000	0	7 000	0
TOTAL Component 2		**1 300 425**	**213 156**	**376 649**	**231 349**	**247 874**	**231 399**

Activities	Details	TOTAL BUDGET	Year 1	Year 2	Year 3	Year 4	Year 5
Component 3	**Wetland knowledge management**	**404 650**	**121 818**	**65 671**	**65 671**	**65 671**	**85 821**
Outcome 3.1	Improved knowledge management system for climate-resilient wetland ecosystems						
Output 3.1.1	*A geo-referenced information system on Mauritania's wetlands, key climate features and ecosystems services is established and functional*						
Activity 3.1	Establish structure for governance of information management system	4 000	4 000	-	-	-	-
Activity 3.2	Develop and maintain a GIS-based information management system to track a set of indicators on wetlands' conditions and functions	133 800	46 168	19 871	19 871	19 871	28 021
Activity 3.3	Work with partners to fill in knowledge and address knowledge gaps on wetlands' conditions and functions	199 350	58 150	32 300	32 300	32 300	44 300
Activity 3.4	Generate most up-to-date information on Mauritania's wetlands and use analyses to advocate on the importance of wetlands and inform decision-	67 500	13 500	13 500	13 500	13 500	13 500
TOTAL Component 3		**404 650**	**121 818**	**65 671**	**65 671**	**65 671**	**85 821**

Activities	Details	TOTAL BUDGET	Year 1	Year 2	Year 3	Year 4	Year 5
Component 4	**Project communication, monitoring and assessment**	**337 734**	**79 943**	**49 773**	**79 123**	**49 773**	**79 123**
Outcome 4.1	Project is implemented based on RBM; results and lessons learned are documented and disseminated						
Output 4.1.1	*Project Monitoring & Evaluation Plan and system in place*						
Activity 4.1	Establish a results-based Monitoring & Evaluation plan	0	-	-	-	-	-
Activity 4.2	Organize project quarterly and annual reporting, review and planning, and undertake Monitoring & Evaluation missions	161 000	54 873	26 532	26 532	26 532	26 532
Output 4.1.2	*Environmental and Social Management Plan (ESMP) developed and implemented*						
Activity 4.3	Refine and implement ESMP	0	-	-	-	-	-
Output 4.1.3	*A communication strategy is developed and implemented.*						
Activity 4.4	Develop and implement a communication strategy	33 034	8 070	6 241	6 241	6 241	6 241
Activity 4.5	Organization of annual wetland appreciation days	45 000	9 000	9 000	9 000	9 000	9 000
Output 4.1.4	*Mid-term and Final Project Evaluations completed*						
Activity 4.6	Organize project mid-term and final evaluations, and five annual audits	98 700	8 000	8 000	37 350	8 000	37 350
TOTAL Component 4		**337 734**	**79 943**	**49 773**	**79 123**	**49 773**	**79 123**

Activities	Details	TOTAL BUDGET	Year 1	Year 2	Year 3	Year 4	Year 5
Project Management Costs		**211 884**	**43 943**	**41 485**	**41 485**	**41 485**	**41 485**
Outcome 5.1	Project is effectively and efficiently managed						
Output 5.1.1	*Project management team established and functional*						
Activity 5.1	Appoint the project management unit	204 000	40 800	40 800	40 800	40 800	40 800
Activity 5.2	Procure office equipment	7 884	3 143	685	685	685	685
TOTAL Project management cost		**211 884**	**43 943**	**41 485**	**41 485**	**41 485**	**41 485**

Table 20. Project schedule by activity and by year

Outcomes, outputs and activities			Months																			
			Year 1				Year 2				Year 3				Year 4				Year 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
COMPONENT 1 Restoration and rehabilitation of wetlands																						
Outcome 1.1 Improved management of three watersheds through integrated approaches																						
Output 1.1.1 Three CCBV established and operational																						
	A.1.1	Identify relevant stakeholders, elaborate guiding principles and define mandate for CCBV																				
	A.1.2	Obtain formal recognition of the three CCBV through a ministerial order																				
	A.1.3	Establish and make operational CCBV																				
	A.1.4	Hold semi-annual meetings of three CCBV within each watershed																				
	A.1.5	Capitalize on experience with CCBV to inform, scale up and institutionalize systems for watershed management																				
Output 1.1.2 Three plans of priority actions at the watershed level developed and implemented in support to restoration and management of three selected wetlands																						
	A.1.6	Undertake diagnostic assessments of the three watersheds to better understand physical properties, hydrological flows and allocations, anthropogenic influences impacting hydrological flows, potential of alterations to impact wetlands, etc.																				
	A.1.7	Undertake participatory vulnerability assessments and scenario planning for each of three wetlands/watersheds																				
	A.1.8	Develop plans of priority actions at the watershed level to support restoration, maintenance and management of selected wetlands																				
	A.1.9	Implement plans of priority actions																				
	A.1.10	Develop and apply a tracking system to monitor progress of CCBV and priority action plans, as well as key characteristics of watershed																				
Outcome 1.2 Ecological structure and function of three wetlands covering 101,250 hectares restored and maintained through decentralized, participatory management																						
Output 1.2.1 Three to five AGLC created and operational at three wetland sites																						
	A.1.11	Build understanding of concept (legalities, mandate) of ALGRN among stakeholders at three wetland sites																				
	A.1.12	Undertake participatory cartography and delimitation of wetland and areas of associated use to be managed (e.g., carte des vocations)																				
	A.1.13	Officially create (i.e., obtain local convention to formalize transfer of management) and make operational five ALGRN																				
	A.1.14	Undertake consultations to develop intercommunity vision for management of wetland																				
	A.1.15	Put in place and support local surveillance and monitoring team																				
	A.1.16	Establish mechanisms for grievance mediation and conflict resolution																				
	A.1.17	Establish mechanisms to track functionality of ALGRN																				
	A.1.18	Exchange and learning visits to sites with more established ALGRN																				
Output 1.2.2 Local management conventions and RP to restore, maintain and manage three wetlands established																						
	A.1.19	Undertake diagnostic assessment of three wetlands to define physical properties (including land cover), values and functions, social and cultural uses, dynamics and impacts of multi-use systems, and vulnerability to climate change																				
	A.1.20	Undertake a series of in-depth studies to better understand any identified restoration, maintenance or management issues that require particular attention and in order to avoid any unintended negative environmental knock-on impacts																				
	A.1.21	Identify appropriate restoration/maintenance/management strategies for three wetlands (taking into consideration climate variability and anthropogenic pressures)																				
	A.1.22	Establish rules (including zoning) to be applied across the defined management area for each wetland and regroup said rules under local conventions																				
	A.1.23	Develop Régimes Particuliers (RP) for any areas with particular economic or conservation potential, or that are particularly vulnerable to degradation																				
	A.1.24	Develop and apply a tracking system to monitor progress of local conventions and RP																				
Output 1.2.3 101,250 hectares of wetlands restored and maintained with improved management																						
	A.1.25	Produce clear guidance on appropriate wetland restoration, maintenance and management strategies and success measures																				
	A.1.26	Implement restoration, maintenance and management activities on wetlands (e.g., firebreaks, forest protection measures from domestic grazers)																				
	A.1.27	Develop and apply a tracking system for restoration, protection and management strategies to ensure they are implemented correctly (and assure they do not have negative environmental impacts)																				
	A.1.28	Establish a monitoring system (in conjunction with aforementioned tracking system) that can be used to evaluate effectiveness and form an adaptive management framework to modify strategies as needed																				
Output 1.2.4 . Capacity of key stakeholders in restoration and management of watersheds and wetlands improved																						
	A.1.29	Provide training to CCBV stakeholders in concepts of watershed vulnerability and integrated watershed and wetland restoration and management																				
	A.1.30	Provide operational and technical training, and equipment to AGCL to build professional capacity to fulfil their mandate																				
	A.1.31	Provide trainings on restoration, protection and management strategies and success measures																				
	A.1.32	Use experience to develop "best practices" wetland restoration and management guidance specific to Mauritania																				
	A.1.33	Work with partners to identify opportunities for institutionalize long-term protection of wetlands, using legal means or incentives																				

COMPONENT 2 Improvement in the adaptive capacity and resilience of communities living adjacent to wetlands		
Outcome 2.1 Ecosystem-based management strategies adopted by communities living adjacent to three wetlands		
	Output 2.1.1 Climate-resilient livelihood strategies developed and disseminated	
	A.2.1	Baseline study of fisheries and development of proposed fisheries management and monitoring measures to improve long-term viability of fish stocks (e.g., zoning, quotas)
	A.2.2	Value chain analysis of fish and fishery products (local, regional, national)
	A.2.3	Simple management plans developed for management of fisheries and integrated with RP for management of wetlands
	A.2.4	Baseline study on NTFP and development of proposed management measures and forest practices to improve long-term sustainability of NTFP (conditions of access and modalities of harvest)
	A.2.5	Value chain analysis of NTFP and NTFP-based products (local, regional, national
	A.2.6	Simple management plans developed for management of NTFPs and integrated with RP for management of wetlands
	A.2.7	Conduct "feasibility study" to assess sustainable tourism at Matmata and Metréouka define (define modalities of access, propose tourism products, propose strategies to manage tourism and mitigate any potential negative impacts)
	A.2.8	Compile and document community knowledge and practices for agriculture and develop proposed adaptive agriculture strategies that are compatible with wetland maintenance and management, and RP
	A.2.9	Engage with programs working on the development of infrastructure to provision water to livestock to assure coordinated planning and monitoring of impacts
	A.2.10	Develop strategies to experiment with fodder production that is compatible with wetland maintenance and management, RP and other income generating activities
	A.2.11	Assure integration and compatibility of management and monitoring measures with RP
	Output 2.1.2 Climate-resilient livelihood strategies implemented and evaluated for their effectiveness	
	A.2.12	Support/establish and equip fishing cooperatives (or other identified actors)
	A.2.13	Support implementation of techniques for sustainable fishery management, including transformation and commercialization
	A.2.14	Develop and apply a tracking system for fisheries management measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption
	A.2.15	Reflection exercises to evaluate experiences with fisheries management and techniques, and identify any modifications required to improve success
	A.2.16	Support/establish and equip NTFP cooperatives
	A.2.17	Support implementation of sustainable management of non-timber forest products
	A.2.18	Develop and apply a tracking system for NTFP management measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption
	A.2.19	Reflection exercises to evaluate experiences with NTFP management and techniques, and identify any modifications required to improve success
	A.2.20	Promote tourism promotion and marketing for Matmata and Metréouka
	A.2.21	Support local tourism services at Matmata and Metréouka
	A.2.22	Develop and apply a tracking system to monitor tourism activities and impacts
	A.2.23	Implement soil protection measures to prevent loss or reduced fertility
	A.2.24	Install fencing (as agreed based on vision for maintenance of a multiple use system)
	A.2.25	Support implementation of sustainable gardening practices
	A.2.26	Support/establish and equip agricultural/horticulture cooperatives including women cooperatives
	A.2.27	Promote and support implementation of agricultural adaptation
	A.2.28	Develop and apply a tracking system for agricultural adaptation measures to monitor that they are implemented correctly, do not have negative environmental impacts, and their degree of adoption
	A.2.29	Reflection exercises to evaluate experiences with agricultural adaptation, and identify any modifications required to improve success
	A.2.30	Support experiments to improve fodder production that is compatible with wetland maintenance and other income generating activities
	Output 2.1.3 Technical capacities to implement climate-resilient livelihood strategies strengthened	
	A.2.31	Trainings (included targeted training for women) on fisheries techniques, processing, preservation and marketing of fish and fishery products
	A.2.32	Trainings (included targeted training for women) on collection, processing/transformation and marketing of NTFP
	A.2.33	Trainings for eco-guides at Matmata and Metréouka
	A.2.34	Trainings on soil conservation
	A.2.35	Trainings on sustainable gardening principles and practices
	A.2.36	Trainings (included targeted training for vulnerable groups) on agriculture adaptation measures
	A.2.37	Trainings on measures for pastoralism adaptation
	Output 2.1.4 Output Local stakeholders understanding raised on the causes of wetland degradation, the effects of climate change and management solutions	
	A.2.38	Lead reflection exercise on perceptions and practices related to wetlands, and develop key messages on wetlands, vulnerability and responses for target audiences
	A.2.39	Production of communication and educational materials
	A.2.40	Dissemination of communication products and educational materials, and trainings on their use
	A.2.41	Production of project support materials

COMPONENT 3 Wetland knowledge management		
Outcome 3.1 Improved knowledge management system for climate-resilient wetland ecosystems		
	Output 3.1.1 A geo-referenced information system on Mauritania's wetlands, key climate features and	
	A.3.1	Establish structure for governance of information management system
	A.3.2	Develop and maintain a GIS-based information management system to track a set of indicators on wetlands' conditions and functions
	A.3.3	Work with partners to fill in knowledge and address knowledge gaps on wetlands' conditions and functions
	A.3.4	Generate most up-to-date information on Mauritania's wetlands and use analyses to advocate on the importance of wetlands and inform decision-making
COMPONENT 4 Project communication, monitoring and assessment		
Outcome 4.1 Project is implemented based on RBM; results and lessons learned are documented and		
	Output 4.1.1 Project Monitoring & Evaluation Plan and system developed and implemented	
	A.4.1.1	Establish a results-based Monitoring & Evaluation plan
	A.4.1.2	Organize project quarterly and annual reporting, review and planning, and undertake Monitoring & Evaluation missions
	Output 4.1.2 Environmental and Social Management Plan (ESMP) developed and implemented	
	A.4.3	Refine and implement ESMP
	Output 4.1.3 A communication strategy is developed and implemented.	
	A.4.4	Develop and implement a communication strategy
	A.4.5	Organization of annual wetland appreciation days
	Output 4.1.4 Mid-term and Final Project Evaluations, and five audits	
	A.4.6	Organize project mid-term and final evaluations, and five annual audits
Project Management Costs		
Outcome 5.1 1 Project is effectively and efficiently managed		
	Output 5.1.1 - Project management team established and functional	
	A.5.1	Appoint the project management unit
	A.5.2	Procure office equipment

9 Appendix

Appendix 1: Bibliography and references

Appendix 2: Site selection process

Appendix 3: full list of GEF interventions in Mauritania

Appendix 4: ESMS Screening report

Appendix 5: ESMS Report

Appendix 6: List of participants to the national level workshop (Nouakchott - Nov 21st, 2017)

Appendix 7: Activities schedule / project work plan - *See Excel file attached to the project document*

Appendix 8: Detailed project budget - *See Excel file attached to the project document*

Appendix 9: Procurement plan - *See Excel file attached to the project document*

Appendix 10: GEF tracking tool – *See Excel file attached to the project document*

Appendix 11: Signed co-financing letters

Appendix 12: GEF Operational Focal Point Endorsement Letters

Appendix 13: ESMS clearance sheet

Appendix 1: Bibliography and references

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Appendix 2: Site selection process

Projet FEM/UICN

« Adaptation et résilience des zones humides continentales aux changements climatiques »

Note sur la sélection des sites d'intervention

Equipe BRLi, version du 28 août 2017 revue le 07 septembre 2017

Contexte et objectifs spécifiques

Les deux premières composantes du projet se concentrent sur la restauration et la réhabilitation de deux zones humides continentales, et sur le renforcement de la résilience et des capacités d'adaptation de leurs populations riveraines. Les interventions doivent concerner au plus trois sites.

Une liste indicative de neuf sites est présentée dans le PIF. Préparée par l'UICN et le MEDD lors de la phase d'identification, cette liste regroupe différents types de zones humides, aux caractéristiques écologiques et socio-économiques différenciées.

Dans le cadre de la préparation du projet, un processus de sélection des sites d'intervention est mis en place. Il repose sur une approche participative et fait appel à une série de critères de différents types. Ils sont principalement issus du PIF, de l'ESMS de l'UICN et de considérations relatives aux objectifs du projet et aux orientations de la Mauritanie en matière d'adaptation aux changements climatiques.

Le processus est structuré en deux étapes :

- La première étape consiste en une sélection préliminaire de *a priori* cinq sites au sein de la liste du PIF qui en comprend neuf. Elle est opérée sur base de la compilation des données bibliographiques existantes et de la prise en compte d'avis de personnes ressources. Une revue des résultats est ensuite réalisée par le MEDD et l'ANGMV. Ces institutions peuvent décider de les modifier, en proposant la prise en compte d'une ou plusieurs zones humides de la liste du PIF mais non sélectionnées de façon préliminaire, et ce au détriment des sites identifiés. Au vu du temps imparti pour la mission de terrain (voir seconde étape ci-après), et de la tenue des travaux associés, il paraît difficilement envisageable de sélectionner plus de cinq sites.
- La seconde étape permettra de finalement sélectionner au plus trois sites pour la mise en œuvre du projet. Elle sera réalisée sur base des données collectées lors de la mission de terrain (environ 10 jours effectif sur le terrain, soit 1 à 1,5 jours par site en tenant compte des délais de route) ainsi qu'en intégrant les résultats de la consultation des parties prenantes locales.

Cette note est préparée à l'attention du MEDD et de l'ANGMV concernant ce processus et plus particulièrement la première étape.

Résultats

La Figure 1 présente la localisation des neufs sites retenus dans le PIF, tandis que le Tableau 1, Tableau 2, et le Tableau 3 listent les différents critères ainsi que les informations disponibles à ce stade pour renseigner chacun d'eux.

Plusieurs constats peuvent être fait :

- Les données disponibles, très éparses et de qualités variables, ne permettent pas une analyse *ex-situ* fine,
- L'élevage et l'agriculture sont pratiquées sur l'ensemble des sites. Il est néanmoins impossible de caractériser l'étendue et l'intensité de chacune de ces pratiques pour l'ensemble des zones humides.
- L'ensemble des zones humides font globalement face aux mêmes types de menaces,
- L'avis des personnes ressource est généralement très tranché.

Figure 1 : Carte des zones humides continentales retenues dans le PIF (DPSL)

Tableau 1 : Localisation et contexte administratif des zones humides continentales retenues dans le PIF

	Localisation et contexte administratif					
ZH	**Wilaya**	**Moughataa**	**Commune(s)**	**Localités**	**Coordonnées géographiques**	**Distance au tracé de la GMV**
Lac de Mâl	Brakna	Aleg	Male	Mâl, Keouel, Bofal, Poleti	16°57'N 13°22'W	50 km
Tâmourt Bougary	Assaba	Kiffa	Eghaourat	Trig el Khdheirat, Ras el Fil	16°32'N 10°47'W	à proximité immédiate
Gâat Mahmoûde	Hodh Ech Chargui	Néma	Beribavatt, Nema, Noual, Agoueinit	Beribafat, El Boibou, Amzingui, Goumel,	16°25'N 07°38'W	85 km
Tâmourt Gounguel	Hodh El Gharbi	Aioun	Benemane	Benemane, Bousfeiya, Chelkha, Dubeye, El Mona, El Oula, Goungel, Grenvella, Hassi Hamadi, Leglig, Rida, Sweilihe-Est, Sweilihe-Ouest, Tatrarett, Terenni, Treide.	16°23'N 09°33'W	à proximité immédiate
Mare de Keur Mour	Trarza	Rosso	Jedrel Mohguen	Keur Mour, Keur Koure	16°31'04.3"N 15°32' 53.3"W	35 km
Mare de Widim	Brakna	M'bagne	Niambina, El Varae, Barabe	Diamel Vidim, Donga, Garalol, Tila, Mboto, Lilia, Tetiane	16°13'29.64"N 14°02' 55.32"W	90 km
Tâmourt Tafi El Khadar	Hodh El Gharbi	Kobeni	Kobeni	Tafi el Kadar, Gobernie, Kobenie	N15°50,717 W09°25,706	à proximité immédiate
Tâmourt en Na'âj	Tagant	Moudjeria	Moudjeria	M'Beika, Matmâta, El Mechra	17°51'N 12°07'W	75 km
Tâmour Ch'lm	Hodh El Gharbi	Aioun	Timzin, Oum Lahyadh	Agreije, Timzin, Tadert, Blemhader, Oum Lahbal, Chlim, M'Zeirigua, Boutalhaya, N'Dreinaye, Hodrea, El ghamga	16°25'N 09°03'W	50 km

Tableau 2 : Caractéristiques des zones humides continentales retenues dans le PIF

	Caractéristiques des zones humides						
ZH	**Type ZH**	**Surface ZH (ha)**	**Surface bassin (km2)**	**Durée de l'inondation (mois)**	**Pluviométrie (mm)**	**Stress hydrique – basé sur la disponibilité en eau et la demande/besoin**	**Classement / Zone importante pour la conservation des oiseaux (IBA)**
Lac de Mâl	Lac permanent	870-5 250	6 400	12	200-300	?	IBA MR014 Lac de Mâl
Tâmourt Bougary	Tâmourt	~200	?	?	100-300	?	Proposé comme aire protégée
Gâat Mahmoûde	Gâat	16 200	4000	semi-permanente	200-300	Aucune habitation humaine à proximité (présence moustiques et insectes) Pluie en déclin entre 1970 et 1990 ont été à l'orgine d'un stress mais régénération avec pluie depuis 1998-2000	IBA MR018 Gâat Mahmoude Proposée comme zone humide d'importance internationale
Tâmourt Gounguel	Tâmourt	530	132	6-12	100-300	Site très exploité et fortement utilisé par les transhumants	
Mare de Keur Mour	Mare	485	Affluent du fleuve Sénégal		100-300	?	Forêt Classée de Dagana
Mare de Widim	Mare	1240	Affluent du fleuve Sénégal		200-300	Problème avec urbanisation	
Tâmourt Tali El Khadar	Tâmourt	900	88	12	200-400	Assèchement important dû à la construction de la route Aioun-Mali (au sud)	
Tâmourt en Na'âj	Tâmourt	95 000 (to be verified)	10 000		50-200	Stress en augmentation du à la sédentarisation	IBA MR015 Tâmourt en Na'aj - Site RAMSAR
Tâmourt Ch'lim	Tâmourt	360-606	48	3-9	100-300	?	IBA MR019 Tâmourt de Chlim Proposée comme zone humide d'importance internationale

Tableau 3 : Contexte socio-économique et menaces des zones humides continentales retenues dans le PIF

	Contexte socio-économique		*Menaces*		*Présence de projets/initiatives visant à renforcer les capacités d'adpatation*
ZH	**Démographie** (nbre hab)	**Principale activités humaines**	**Menaces naturelles** (y inclus les effets de désertification)	**Menaces anthropiques**	
Lac de Mâl	33 301	• Agriculture (liée à l'importance de la retenue + lac) • Elevage • Pêche • Braconnage • Emondage/élagage	• Sols érodés • Ensablement • Dunes mobiles • Destruction des habitats	• Cultures décrue et maraîchage • Surpâturage + utilisation eau/fourrage lacustre • Urbanisation • Exploitation de la nappe phréatique	+++
Tâmourt Bougary	18 358	• Elevage • Agriculture • Braconnage • Cueillette	• Dégradation du couvert végétal • Perte de la biodiversité	• Agriculture décrue, maraîchage et ceuillette nénuphar • Coupe des arbres • Elevage • Braconnage	0
Gâat Mahmoûde	3 845	• Pêche • Agriculture • Chasse • Elevage • Cueillette	• Dégradation du couvert végétal • Perte de la biodiversité • Envasement	• Effort de pêche (du Mali) probablement non durable (non contrôlé et non organisé) • Pression sur les sols agricoles • Urbanisation • Braconnage • Surpâturage • Elagage et émondage des arbres • Charbon de bois	0
Tâmourt Gounguel	3 045	• Chasse • Cueillette • Agriculture • Elevage (située sur un axe principal de transhumance) • Préparation du charbon de bois • Gomme arabique (Goungel était un site de grande exploitation, la production a chuté)	• Baisse de la productivité des sols • Destruction des habitats • Perte de la biodiversité • Ensablement progressif	• Surpâturage • Sedentarization of transhumants • Pression sur les sols agricoles • Braconnage • Pêche (à confirmer)	++
Mare de Keur Mour	6 700	• Préparation du charbon de bois • Agriculture	• Dégradation du couvert végétal • Cueillette	• Coupe des arbres	++
Mare de Widim	11 859	• Pêche • Agriculture • Elevage • Préparation du charbon de bois	• Dégradation du couvert végétal • Cueillette	• Coupe des arbres	++
Tâmourt Tali El Khadar	11 833	• Agriculture de décrue de type traditionnel • Elevage (éleveurs transhumants conduisent chaque jour, de décembre à mars) • Cueillette • Chasse	• Dégradation du couvert végétal • Perte de la biodiversité	• Pression sur les sols agricoles • Surpâturage • Braconnage • Coupe abusive des arbres	++
Tâmourt en Na'âj	20 766	• Agriculture • Elevage • Cueillette	• Dégradation du couvert végétal (réduction de superficie et régénération insuffisante) • Ensablement	• Déboisement pour l'agriculture • Pression sur les sols agricoles • Surpâturage • Braconnage	+
Tâmourt Ch'lim	14 187	• Chasse • Cueillette (PNFL, riz, charbon, bois de construction) • Agriculture • Elevage • Agriculture de décrue	• Dégradation du couvert végétal • Ensablement	• Surpâturage • Coupe arbres (charbon)	++

A l'issue de cette première revue, dans le cadre de la première étape du processus de sélection, une première synthèse peut être réalisée (voir Tableau 4 ci-dessous).

Tableau 4 : Sélection préliminaire des sites

ZH	Distance au tracé de la GMV	Appréciation vulnérabilité		Pré-sélection
		Données disponible	Observations d'experts	
Lac de Mäl				non
Tâmourt Bougary				oui
Gâat Mahmoûde				oui
Tâmourt Gounguel				oui/non ?
Mare de Keur Mour				oui/non ?
Mare de Widim				non
Tâmourt Tali El Khadar				non
Tâmourt en Na'âj				oui
Tâmour Ch'lim				oui/non ?

Le code couleur représente le résultat qualitatif - pour chaque critère - de la hiérarchisation du site au regard du processus de sélection

La vulnérabilité est entendue ici comme étant la prédisposition des usagers des zones humides à être affectés par la variabilité et les changements climatiques. Les notions de sensibilité et de capacités d'adaptation sont suggérées dans cette approche.

Sur base de ces éléments, il est proposé que :

- Tâmourt Bougary, Gâat Mahmouda et Tâmourt en Na'âj soient retenus pour les évaluations de terrain.
- Un choix soit opéré entre la Mare de Keur Mour, les Tâmourt de Gounguel et de Ch'lim pour disposer d'un quatrième et d'un cinquième sites pour les évaluations de terrain.
- Mare de Widim ne soit pas retenue : cette zone humide Widim fait face à un problème d'urbanisation marqué qui paraît difficile à gérer.
- Tali El Khadar ne soit pas retenue : cette zone humide a été profondément perturbée par la construction d'une route, il paraît complexe d'en assurer la restauration.

Prochaines étapes

Les prochaines étapes identifiées sur base de cette analyse préliminaire sont décrites ci-dessous.

- **Commentaire du MEDD et de l'ANGMV sur résultats de la 1ère étape** : les commentaires du MEDD et de l'ANGMV sur les résultats issus de cette première étape permettront de disposer

de la liste définitive des cinq sites devant faire l'objet des travaux de terrain. Cette décision doit intervenir d'ici au **6 septembre 2017** au plus tard.

- **Collecte d'informations multithématiques lors des travaux de terrain et consultation des parties prenantes** : les travaux de terrain permettront de vérifier les données disponibles à ce jour, collecter des données additionnelles et consulter les parties prenantes.

Décision du MEDD du 07 septembre 2017

Au regard du temps limité pour les travaux de terrain, il a été décidé de concentrer ces derniers sur trois sites. Les sites de Tâmourt Bougary, Gâat Mahmouda et Tâmourt en Na'âj sont retenus pour conduire les consultations des parties prenantes.

Appendix 3: full list of GEF interventions in Mauritania

ID	Title	Focal Areas	Grant and Cofinancing	Implementing Agencies	Countries	Fund Source	Period	Status
9747	Building Core Capacity for the Implementation, Monitoring and Reporting of Multilateral Environmental Agreements (MEAs) in the Context of the Sustainable Development Goals (SDGs) in Mauritania	-	$950,000 $550,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 6	Concept Approved
9594	Strengthening Trans-boundary Cooperation for Improved Ecosystem Management and Restoration in the Senegal delta (Mauritania and Senegal)	International Waters	$3,061,009 $7,850,000	International Union for Conservation of Nature	Mauritania, Senegal	GEF Trust Fund	GEF - 6	Concept Approved
9327	Enabling preparation of Mauritania's Fourth National Communication (NC4) to the UNFCCC	Climate Change	$500,000 $60,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 6	Project Approved
9307	Enabling activities to review and update the national implementation plan for the Stockholm Convention on persistent organic pollutants (POPs)	Chemicals and Waste	$180,000 $17,000	United Nations Industrial Development Organization	Mauritania	GEF Trust Fund	GEF - 6	Project Approved
9294	Integrated Ecosystem Management Program for the Sustainable Human Development in Mauritania	Biodiversity, Land Degradation, Climate Change	$8,222,505 $23,150,000	Food and Agriculture Organization	Mauritania	GEF Trust Fund	GEF - 6	Concept Approved
8033	Continental Wetlands Adaptation and Resilience to Climate Change	Climate Change	$4,449,542 $4,500,000	International Union for Conservation of Nature	Mauritania	Least Developed Countries Fund	GEF - 6	Concept Approved
8029	West Africa Regional Fisheries Program SOP C1	International Waters	$7,000,000 $23,050,000	The World Bank	Mauritania	GEF Trust Fund	GEF - 5	Project Approved
5792	PSG-Sustainable Landscape Management Project under SAWAP	Biodiversity, Land Degradation	$4,810,000 $19,200,000	The World Bank	Mauritania	GEF Trust Fund	GEF - 5	Project Approved
5769	Promoting Sustainable Mini-grids in Mauritanian Provinces Through Hybrid Technologies	Climate Change	$1,270,142 $7,650,000	United Nations Development Programme	Mauritania	GEF Trust Fund	GEF - 5	Project Approved
5639	Stocktaking and Update of National Biosafety Framework of Mauritania	Biodiversity	$878,000 $950,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 5	Project Approved
5617	Preparation of Mauritania's Initial Biennial Update Report to UNFCCC	Climate Change	$352,000 $30,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 5	Project Approved
5580	Development of an Improved and Innovative Management System for Sustainable Climate-resilient Livelihoods in Mauritania	Climate Change	$5,000,000 $8,500,000	United Nations Environment Programme	Mauritania	Least Developed Countries Fund	GEF - 5	Project Approved
5535	Improving IWRM, Knowledge based Management and Governance of the Niger Basin and the Iullemeden Taoudeni Tanezrouft Aquifer System (ITTAS)	International Waters	$13,425,000 $77,956,945	United Nations Development Programme	Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Guinea, Mali, Mauritania, Niger, Nigeria, Algeria	GEF Trust Fund	GEF - 5	Concept Approved

ID	Title	Focal Areas	Grant and Cofinancing	Implementing Agencies	Countries	Fund Source	Period	Status
5190	Improving Climate Resilience of Water Sector Investments with Appropriate Climate Adaptive Activities for Pastoral and Forestry Resources in Southern Mauritania	Climate Change	$6,350,000 $14,580,000	African Development Bank	Mauritania	Least Developed Countries Fund	GEF - 5	Project Approved
5133	Senegal River Basin Climate Change Resilience Development Project	Climate Change, International Waters	$16,000,000 $68,600,000	The World Bank	Senegal, Guinea, Mali, Mauritania	Multi Trust Funds	GEF - 5	Project Approved
4740	Disposal of Obsolete Pesticides including POPs and Strengthening Pesticide Management in the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) Member States	Persistent Organic Pollutants	$7,450,000 $25,337,684	Food and Agriculture Organization	Burkina Faso, Cabo Verde, Chad, Gambia, Guinea-Bissau, Mali, Mauritania, Niger, Senegal	GEF Trust Fund	GEF - 5	Project Approved
4511	GGW Sahel and West Africa Program in Support of the Great Green Wall Initiative	Biodiversity, Land Degradation, Climate Change	$4,814,815 $682,172,483	The World Bank	Benin, Burkina Faso, Chad, Ethiopia, Ghana, Mali, Mauritania, Niger, Nigeria, Senegal, Sudan, Togo	Multi Trust Funds	GEF - 5	Concept Approved
4487	LME-AF Strategic Partnership for Sustainable Fisheries Management in the Large Marine Ecosystems in Africa (PROGRAM)	International Waters	$500,000 $135,000,000	The World Bank	Comoros, Mauritania, Mozambique, Tanzania	GEF Trust Fund	GEF - 5	Concept Approved
4472	GEF National Portfolio Formulation Document		$28,840 $0	GEF Secretariat	Mauritania	GEF Trust Fund	GEF - 5	Completed
4178	SPWA-CC Promoting Coherence, Integration and Knowledge Management under Energy Component of SPWA	Climate Change	$700,000 $790,000	United Nations Industrial Development Organization	Benin, Burkina Faso, Burundi, Cabo Verde, Cote d'Ivoire, Chad, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo	GEF Trust Fund	GEF - 4	Project Approved
3969	AFLDC: Capacity Strengthening and Technical Assistance for the Implementation of Stockholm Convention National Implementation Plans (NIPs) in African Least Developed Countries (LDCs) of the ECOWAS Subregion	Persistent Organic Pollutants	$8,000,000 $11,631,703	United Nations Environment Programme	Benin, Burkina Faso, Cabo Verde, Central African Republic, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Sao Tome and Principe, Senegal, Sierra Leone, Togo, Chad	GEF Trust Fund	GEF - 4	Project Approved

ID	Title	Focal Areas	Grant and Cofinancing	Implementing Agencies	Countries	Fund Source	Period	Status
3893	Support to the Adaptation of Vulnerable Agricultural Production Systems	Climate Change	$3,500,000 $10,473,000	International Fund for Agricultural Development	Mauritania	Least Developed Countries Fund	GEF - 4	Project Approved
3789	SPWA-CC: GEF Strategic Program for West Africa: Energy Component (PROGRAM)	Climate Change	$0 $0	United Nations Industrial Development Organization	Benin, Burkina Faso, Burundi, Cabo Verde, Cote	GEF Trust Fund	GEF - 4	Concept Proposed
3785	SPWA-BD: GEF Program in West Africa: Sub-component on Biodiversity	Biodiversity	$0 $0	The World Bank	Cabo Verde, Cote d'Ivoire, Nigeria, Benin, Burkina Faso, Chad, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Senegal, Sierra Leone, Togo	GEF Trust Fund	GEF - 4	Concept Proposed
3576	Partnership to Mainstream Marine and Coastal Biodiversity into Oil and Gas Sector Development in Mauritania	Biodiversity	$950,000 $4,508,859	United Nations Development Programme	Mauritania	GEF Trust Fund	GEF - 4	Project Approved
3379	SIP: Participatory Enviornmental Protection and Poverty Reduction in the Oases of Mauritania	Land Degradation	$4,190,000 $15,568,200	International Fund for Agricultural Development	Mauritania	GEF Trust Fund	GEF - 4	Completed
2770	Demonstration of a Regional Approach to Environmentally Sound Management of PCB Liquid Wastes and Transformers and Capacitors Containing PCBs	Persistent Organic Pollutants	$4,889,399 $9,638,942	United Nations Environment Programme	Benin, Burkina Faso, Chad, Cote d'Ivoire, Djibouti, Mali, Niger, Senegal, Togo, Congo DR, Mauritania, Morocco, Guinea-Bissau, Guinea	GEF Trust Fund	GEF - 4	Project Approved
2757	SIP PROGRAM: Strategic Investment Program for SLM in Sub-Saharan Africa (SIP)	Land Degradation	$1,893,673 $0	The World Bank	Benin, Botswana, Burkina Faso, Burundi, Eritrea, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger,	GEF Trust Fund	GEF - 4	Concept Approved
2614	Adaptation to Climate Change - Responding to Shoreline Change and its human dimensions in West Africa through integrated coastal area management.	Climate Change	$3,300,000 $9,729,517	United Nations Development Programme	Senegal, Gambia, Guinea-Bissau, Mauritania, Cabo Verde	GEF Trust Fund	GEF - 3	Completed

ID	Title	Focal Areas	Grant and Cofinancing	Implementing Agencies	Countries	Fund Source	Period	Status
2459	Community-based Watershed Management Project	Land Degradation	$6,000,000 $58,800,000	The World Bank	Mauritania	GEF Trust Fund	GEF - 3	Completed
2386	Adrar Solar Initiative and Decentralized Electrification in the Northern Coastline of Mauritania through Hybrid (Wind/Diesel) Systems	Climate Change	$2,700,000 $9,357,000	United Nations Development Programme	Mauritania	GEF Trust Fund	GEF - 3	Cancelled
1972	National Capacity Needs Self-Assessment (NCSA) for Global Environmental Management		$200,000 $25,000	United Nations Development Programme	Mauritania	GEF Trust Fund	GEF - 3	Completed
1956	National Adaptation Plan of Action	Climate Change	$198,000 $0	United Nations Environment Programme	Mauritania	Least Developed Countries Fund	GEF - 3	Completed
1909	Protection of the Canary Current Large Marine Ecosystem (LME)	International Waters	$8,090,000 $17,805,000	Food and Agriculture Organization	Cabo Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Morocco, Senegal	GEF Trust Fund	GEF - 4	Project Approved
1887	Climate Change Expedited Financing for (interim) Measures for Capacity Building in Priority Areas (Phase II)	Climate Change	$100,000 $0	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 3	Project Approved
1581	Enabling activities for the Stockholm Convention on Persistent Organic Pollutants (POPs): National Implementation Plan for Mauritania.	Persistent Organic Pollutants	$424,000 $39,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 2	Completed
1420	Reducing Dependence on POPs and other Agro-Chemicals in the Senegal and Niger River Basins through Integrated Production, Pest and Pollution Management		$4,105,330 $4,458,160	United Nations Environment Programme	Benin, Guinea, Mali, Mauritania, Senegal, Niger	GEF Trust Fund	GEF - 3	Completed
1109	Senegal River Basin Water and Environmental Management Program	International Waters	$7,250,000 $13,950,000	The World Bank	Guinea, Mali, Mauritania, Senegal	GEF Trust Fund	GEF - 2	Completed
990	Assessment of Capacity-building Needs for Biodiversity, Participation in CHM and Preparation of Second National Report	Biodiversity	$148,280 $23,750	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 2	Completed
481	Strengthening the Clearing House Mechanism Focal Point for the Participation in the Pilot Phase of the CHM of the CBD	Biodiversity	$14,000 $0	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 1	Completed
371	Decentralized Wind Electric Power for Social and Economic Development (Alizes Electriques)	Climate Change	$2,000,000 $73,552	United Nations Development Programme	Mauritania	GEF Trust Fund	Pilot Phase	Completed
181	Enabling Activities for the Preparation of Initial National Communications Related to the UNFCCC	Climate Change	$350,000 $50,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 1	Completed
177	Rescue Plan for the Cap Blanc Colony of the Mediterranean Monk Seal	Biodiversity	$150,000 $75,000	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 1	Completed
165	National Biodiversity Conservation Strategy, Action Plan and First National Report to the CBD	Biodiversity	$233,000 $0	United Nations Environment Programme	Mauritania	GEF Trust Fund	GEF - 1	Completed

Appendix 4: Environmental & Social Management System Questionnaire and Screening report

Template -
ESMS Manual

IUCN Environmental & Social Management System (ESMS)

Date: 07 March 2017

ESMS Questionnaire & Screening Report - for field projects

This template has been designed for field projects. Another template using a simplified version of the ESMS Questionnaire is available for non-field projects such as projects which support policy making, strategy development or upstream planning processes or provide knowledge through capacity building or knowledge products. Very small projects such as organizing workshops, meeting or conferences, position papers, scientific paper, reports, preparation of scientific materials for subsequent use in conferences or communication are outside the scope of the ESMS and don't require the completion of the ESMS Questionnaire.

Project Data

The fields below are completed by the project proponent

Project Title:	Continental wetlands adaptation and resilience to climate change		
Project proponent:	IUCN		
Executing agency:	Mauritania National Great Green Wall Agency, Direction des Aires Protégées et du Littoral		
Funding agency:	GEF / LDCF		
Country:	Mauritania	Contract value (add currency):	4,449,541 (in $)
Start date and duration:	Project duration 48 months	Amount in CHF:	4.493.950
Has a safeguard screening or ESIA been done before?	☐ yes ☒ no	Provide details, if yes:	

Step 1: ESMS Questionnaire

The fields below are completed by the project proponent; the questionnaire is presented in Annex A

	Name and function of individual representing project proponent	Date
ESMS Questionnaire completed by:	Mohamed Lemine BABA, IUCN country representative Mauritania	14/03/2017
ESMS Screening is *(tick one of the three options)*	1. ☒ required because the project budget is ≥ CHF 500,000 2. ☐ required – despite being a small project (< CHF 500,000) the project proponent has identified risks when completing the ESMS Questionnaire 3. ☐ not required because the project budget is < CHF 500,000 and the project proponent confirms that no environmental or social risks have been identified when completing the ESMS Questionnaire	

Step 2: ESMS Screening

To be completed by IUCN ESMS reviewer(s): only needed when the options 1 or 2 above (marked in red) are ticked

	Name	IUCN unit and function	Date
IUCN ESMS Reviewer:	Linda Klare	ESMS Coordinator	3.5.2017
	Awaiss Aboubacar	PACO - Water and Wetlands Program Coordinator	2.5.2017
	Title		Date
Documents submitted at Screening stage:	PIF		12.5.2015
	ESMS Screening Questionnaire		

ESMS Screening Report[1]	
Risk category:	☒ low risk ☐ moderate risk ☐ high risk
Rationale: Summarize findings from the questionnaire and explain the rationale of risk categorization *See the following sections of the questionnaire for details:* **section A** *for findings about the stakeholder engagement process,* **Section B** *on the 4 Standards,* **Section C** *on other E&S impacts and* **Section D** *on risk issues related to Climate change*	The project aims at restoring wetland ecosystems for climate change adaptation and resilience. Because these wetlands are important for pastoralist livelihoods, restoring these ecosystems is expected to generate not only environmental but also social benefits by reducing the vulnerability of pastoralists' livelihood to climate change. Further positive impacts are expected for the local population as the project will promote income generating activities aimed in particular to benefit vulnerable groups, women and young people. The project follows a participatory approach for resource management, evidenced, among others, through its objective to define and implement a participatory wetland management plan. This element was the subject of special consideration during the process of developing the national wetland strategy. The involvement of the communities living in the wetland sites and in particular the pastoral groups in defining the plan will allow addressing their needs and concerns and will also strengthen their ownership . While a few social risks have been identified (see section B and C), it is considered that these are either already addressed by the project or can be readily addressed when finalizing the detailed project design during the PPG phase. It should also be noted that a few issues as specified in sections B and C below deserve further analysis – to be included in the ToR of the PPG consultant(s). Environmental impacts are expected to be exclusively positive with one minor risk related to invasive species which is expected to be readily addressed through appropriate handling procedures (see section B4). Risks related to the project failing to appropriately address impacts from climate change are considered low as it is the project's explicit intention to reduce vulnerabilities to climate change. However, the PPG needs to ensure that climate scenarios and their impacts on water resources are well taken into consideration (see section D).
Required assessments	☐ Full Environmental and Social Impact Assessment (ESIA) ☐ Partial Environmental and Social Impact Assessment (ESIA) ☐ Social Impact Assessment (SIA) ☒ Other: Socio-economic context analysis including gender
Required actions for gender mainstreaming	The PIF describes the project's intention to promote gender equality and indicates the plan to undertake, as part of project preparation, an assessment of needs of all men and women involved in the project. In order to improve gender responsive project design, the following recommendations are made by the screening team: • Undertake a targeted gender analysis – as integral part of the socio-economic context analysis of the selected intervention sites - to review the project and its context systematically on potential risks of affecting women as well as identifying opportunities for women empowerment. • Ensure ample consultation of women in gender analysis; • Examine gender roles in natural resources management, differences in access to and control over resources and women's representation in governance processes and bodies; • Identify needs, barriers and potential disadvantages women face; • Explore women's skills and knowledge specific to resource management and development opportunities;

[1] For projects below CHF 500,000 where no risks have been identified the screening report is completed by the project proponent; low risk projects don't require assessments - hence only the section on the rationale needs to be completed.

	• Integrate specific gender measures to address identified issues in the project design; this might include o Measures to ensure equitable presence of women in advisory or decision-making bodies set up or supported by the project; o Capacity building in identified technical areas or aiming more generally at empowering women; o Measures to strengthen of women's rights, in particular related to ownership or access to land and other production factors; o Measure to enhance the economic and social benefits to women; component 2 which aims at supporting alternative income generation offers ample opportunities for providing tangible benefits, e.g. related to market gardening, poultry farming, renewable energy for micro-economy, development of local products, ecotourism etc. • Provide gender specific indicators for the results framework.	
ESMS Standards	**Trigger**	**Required tools or plans**
Involuntary Resettlement and Access Restrictions *(see section B1 for details)*	☐ yes ☐ no ☒ TBD	☐ Resettlement Action Plan ☐ Resettlement Policy Framework ☐ Action Plan to Mitigate Impacts from Access Restriction ☐ Access Restrictions Mitigation Process Framework
Indigenous Peoples *(see section B2 for details)*	☐ yes ☐ no ☒ TBD	☐ Indigenous People Plan
Cultural Heritage *(see section B3 for details)*	☐ yes ☐ no ☒ TBD	☐ Chance Find Procedures
Biodiversity Conservation and Sustainable Use Natural Resources *(see section B4 for details)*	☐ yes ☒ no ☐ TBD	☐ Pest Management Plan

Annex A: ESMS Questionnaire

Project summary

To be completed by project proponent - Please summarise the project briefly using no more than one page. The summary can be in form of bullet points. Include goal/objectives, expected results/outcomes, outputs (project deliverables) and main activities.

Mauritanian wetlands ecosystems are facing increased vulnerability to climate variation because of climate variability itself and anthropic pressures. This generates a vicious circle towards the decline of wetlands and increased vulnerability for the related ecosystem and livelihoods. An appropriate response will include an approach encompassing both the restoration of wetlands ecosystem and activities that will reduce the vulnerability of livelihoods. The project will therefore promote an approach that will respond to the two types of causes highlighted above. It will respond to climate change by i) restoring the services wetlands provide to the environment with a special focus on the water resource, and ii) increasing the adaptive capacity of populations and livelihoods. The resilience of the wetlands themselves will provide co-benefits such as the conservation of biodiversity. This resilience of wetlands, which will allow for the maintenance and restoration of a biodiversity vital to a regional ecosystem, will help increase the resilience of pastoral populations and their capacity for adaptation. However, in order to achieve this, it is essential to regulate the use of wetlands by means of the appropriate participatory management plans, which involve all stakeholders concerned.

Project Objective: Restoration of wetland ecosystem for climate change adaptation and resilience		
Project Components	**Project Outcomes**	**Project Outputs**
Restoration and rehabilitation of wetlands	The functions linked to wetland ecosystem services are restored.	Up to 3 wetlands sites are restored taking into account climate change threats.
	Participatory management approaches are implemented.	Participatory management plans are established.
	Capacity building of the key stakeholders facilitates the decentralized management of the selected wetlands.	Key stakeholders at the Government and local communities' level are trained to enable decentralized management of wetlands.
Improvement of the resilience and the capacity for adaptation of populations living near to wetlands	Diversification of the income of local populations and support for activities generating income to benefit vulnerable groups, notably women and young people (small-scale irrigation, drip irrigation, improved fishing and fish transformation techniques on a village scale, fodder production, beekeeping, small-scale renewable energy installations).	Local communities benefit from management plans enabling the diversification of activities and more resilient livelihoods to climate change variations.
	Local populations and stakeholders are aware of the degradation of wetlands, the causes of this degradation, the effect of climate change on wetlands and conservation measures to counter it.	Key stakeholders in local communities are trained to diversified activities.
	Building the capacity of village communities.	Diversified income generating activities are disseminated and adopted by local communities.
Wetland knowledge management and monitoring / assessment	Improved understanding of the status of and trends in the wetlands.	Database sensing all Mauritania wetlands and their key characteristics (including biodiversity status) is functional.
	Use is made of an operational geographic information system and a database for Mauritanian wetlands.	A geographical information system is established and functional.
	Increased understanding of the effects of climate change on wetland biodiversity and ecosystems.	Local communities and stakeholders are involved in training on disseminating climate change knowledge on wetlands.
Project communication, monitoring and assessment	Communication.	At least a six-monthly newsletter informing on project status is prepared and sent (# recipients to be determined).
	Monitoring and assessment of the project and dissemination of the results.	Monitoring and evaluation system is in place and updated with adequate indicators linked to both IUCN and GEF respective M&E tools.

A. Process of stakeholder engagement during project conceptualization
1. Has a project stakeholder analysis been carried out and documented – identifying not only interests, needs and influence of stakeholders but also whether there are any stakeholders that might be affected by the project? Does the stakeholder analysis disaggregate between women and men, where relevant and feasible? It is recommended to add the stakeholder analysis to the documents submitted at screening stage.
To be completed by project proponent
No formal stakeholder analysis has been carried out at this stage of the project design. Once the final project sites are determined, a comprehensive stakeholder analyses will be conducted, taking into account the interests, needs and influence of all stakeholders potentially affected by the project and disaggregated between women and men where relevant.
IUCN ESMS Reviewer
It is understood that the analysis will require having first decided on the sites. The analysis should be done at the outset of the PPG phase in order to guide stakeholder consultation and particular needs assessments to be carried out during that phase. It will be important to distinguish the interests, needs and potential negative impacts or risks of women. The proponent is encouraged to involve stakeholders (political decision makers, CSO and local communities etc.) into the site selection process.
2. Has information about the project – and about potential risks or negative impacts – been shared with relevant groups? Have consultations been held with relevant groups to discuss the project concept and risks? Provide details about the groups involved. Have women been consulted (provide details)? Did the consultations include stakeholders that were identified as potentially affected? Has this been done in a culturally appropriate way to allow meaningful engagement of women and of potentially affected groups? Have results from the consultations been taken up and influenced project design?
To be completed by project proponent
Within the framework of this project, IUCN and the Government's executive agency – the National Agency for the Great Green Wall - have held consultation meetings as part of the preparation of this project, with the livestock keepers' associations in eastern Mauritania, nature conservation NGOs that have particular expertise on wetlands (the IUCN Member organizations Naforé and Nature Mauritanie), and technicians from organizations for development and cooperation as well as universities. Since one of the project's objectives was the definition and implementation of a participatory wetland management plan, the involvement of populations living around wetlands and pastoral populations in particular, is a condition for the success of this project. IUCN recognizes the need to involve NGOs and civil society in ecosystem restoration, conservation and management measures. IUCN and the executive agency appointed by the Government for this project agreed on the involvement of NGOs recognized in Mauritania for wetland management. IUCN will also involve Mauritania's civil society through these technical networks (in the field of ecosystem management, or social policies and practices) that cover West Africa. Further information on the civil society actors who may become partners in the project's implementation, will be listed during the project preparation stage, with a view to sending a request for their endorsement to the CEO of the Global Environment Facility (GEF). Moreover, the local groups and livestock farmers' associations will be involved in the preparatory process and the implementation of the project through its components 1 (within the framework of the establishment of the participatory wetland management methods) and 2 (within the framework of the measures to diversify income and raise awareness about the degradation of wetlands). The project will be defined and implemented in line with the gender integration procedures used by IUCN in all its projects and activities. The project will be prepared by analyzing the needs of all the men and women involved in the implementation of the project. The actions implemented are aimed at favoring equality between men and women, both with regard to the project's expected benefits and in its implementation on a daily basis. Numerous consultations will be carried out in order to define the characteristics and requirements that will need to be taken into account to ensure gender equality in this project.
IUCN ESMS Reviewer
Consultation of stakeholders is important for good project design; however, for the ESMS stakeholder engagement comes yet with another angle: to ensure that groups that might be affected by the project (e.g. by promoting changes of resource management regimes) are appropriately involved so that they can voice their concerns at an early stage of project design and that measures are identified to mitigation potential negative impacts. It is understood that so far no negative social impacts have been identified, but the PPG team should ensure that the social context is appropriately analysed, potential concerns are perceived and that affected groups, if any, are involved in the design of relevant project activities. The intention for mainstreaming gender is well received. During the PPG these intentions need to be concretized through focussed activities and clear indicators.

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B. Potential impacts related to ESMS standards			
B1: Standard on Involuntary Resettlement and Access Restrictions			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Will / might the project involve relocation or resettlement of people? **If yes, answer a-b below**	TBD	*Shaded cells do not need to be filled out*	
a. Describe the project activities that require resettlement?		The populations' transition towards a more sedentary way of life, which is happening without adequate planning, has had negative impacts on the ecosystem functioning of the wetlands and their natural resources. Depending on the choice of the final project sites, some of the projects' restoration activities might demand an improved spatial planning and thus, a relocation of people may become necessary. However, the project will not cause any major physical displacement of people. In addition to that, any relocation will be for the benefit of the population in order to reduce the vulnerability of their livelihoods and to increase their adaptation capacity to cope with the effects of climate change.	In general projects should be designed in a way to avoid relocation of people by all means given that such process require managing comprehensive and complex processes involving extensive stakeholder consultation, FPIC and planning and implementation of compensation processes. It should also be pointed out that not infrequently what supposedly seems as beneficial change might be ambiguous and also perception might change over time; physical places where people live are deeply rooted in people's livelihoods, culture, and identity and implementation of relocation process is often challenged by a number of challenges (e.g. problem of available land, dissatisfaction with compensation package, expectations not materialized etc.). Hence, relocation should be the last resort.
b. Have alternative project design options for avoiding resettlement been rigorously considered?		TBD during the project preparation phase and the identification of the final project sites.	
2. Does the project include activities that involve restricting access to land or natural resources? (e.g., establishing new restrictions, strengthening enforcement capacities through training, infrastructure, equipment or other means, promoting village patrolling etc.); **if yes, answer a-g below**	Yes		
3. Does the project include activities that involve changes in the use and management regimes of natural resources? **If yes, answer a-g below**	Yes		
4. Does the project create situations that make physical access more difficult to livelihood resources (e.g. to multiple use zones, to schools or medical services etc.)? **If yes, answer a-g below**	TBD		
Answer only if you answered yes to items 2, 3, or 4.			
a. Describe project activities that involve restrictions		The project will allow a participatory wetland management system to be set up with validated development plans and for it to be implemented in the selected sites (zoning, setting up of decision-making bodies, local regulations, management measures to deal with wetland use conflict). Such participatory management systems will enable the relevant stakeholders to plan and effectively manage in a sustainable way the use and access to wetlands and their natural resources. Any restrictions on access to land or natural	Project trigger the access restriction element of the Standard mostly in situations where restrictions are established under formal and statutory frameworks (e.g. legal framework for protected area) and peoples and communities are then obliged to adhere to these land-use rules. Situations where communities establish resource use regimes themselves for the purpose of sustaining long-term use of the resources, are usually not considered under this Standard; this is because the restrictions are based on own decisions and are not

		resources will therefore jointly be determined by the relevant stakeholders with the objective to restore the biodiversity and maximize the benefits of the use of the natural resources of the wetlands.	imposed on them by third parties. However, the ESMS still requires that project management can ensure that such community decisions process is adequate and reflects voluntary, informed consensus, and that appropriate measures have been put in place to mitigate adverse impacts, if any, on the vulnerable members of the community.
b. Explain the project's level of influence: will it define restrictions, put in place restrictions, strengthen enforcement capacities or promote restrictions indirectly (e.g., through awareness building measures or policy advice)?		Participatory wetland management system with validated development plans will be set up and implemented in the selected sites (zoning, setting up of decision-making bodies, local regulations, management measures to deal with wetland use conflict). In addition to that, the project will allow the introduction of a legislative framework regulating wetlands on a national level (establishing that each zone should have its own development plan), whilst increasing the local stakeholders' capacity and knowledge of wetland management. Key stakeholders at the Government and local communities' level will therefore be trained to enable decentralized management of wetlands. The project will also help raise the awareness of local populations and stakeholders about the degradation of wetlands, the causes of this degradation and conservation measures (involving local populations and know-how), in order to create a citizen movement in favor of the sustainable use of wetlands in Mauritania.	
c. Has the existing legal framework regulating land tenure and access to natural resource (incl. traditional rights) been analysed, broken down by different groups including women, if applicable?		The project will be developed within the framework of the implementation of the national strategy for the conservation of wetlands, prepared thanks to the technical advice by IUCN Mauritania and financed by the Ramsar Convention on Wetlands and approved by the Government in October 2014. The project will help to develop a legislative framework to manage wetland ecosystems in a participatory way including all groups involved.	To be addressed by the PPG consultant(s).
d. Explain whether the country's existing laws recognise traditional rights for land and natural resources: are there any groups at the project site whose rights are not recognised?		TBD with the final selection of the project sites.	To be addressed by the PPG consultant(s).
e. Have the implications of access restrictions on people's livelihoods been analysed, by social group? Explain who might be affected and describe the impacts. Distinguish social groups (incl. vulnerable groups, indigenous peoples) and men and women.		TBD with the final selection of the project sites. However, any possible restrictions will be jointly developed by all stakeholders concerned. In addition to that, the project is helping to diversify the income of local populations and supporting activities generating income for the benefit of vulnerable groups, notably women and young people.	Assessing the implications of use restrictions should be addressed by PPG consultant(s), including assessing local uses of natural resources.
f. Will the project include measures to minimise adverse impacts or to compensate for loss of access? If yes, specify measures. Are they feasible, culturally appropriate and gender inclusive?		TBD with the final selection of the project sites. In order to reduce the pressure of the surrounding communities in the wetlands, the project promotes the	To be addressed by the PPG consultant(s).

		diversification of income for the local communities as well as the promotion of sustainable practices related to the management and use of forest and water resources specifically. The project will help implement activities leading to the diversification of income for local populations through support for income-generating activities through the promotion of alternative production (market gardening, poultry farming, renewable energy for the micro-economy, etc.) and the improvement of other traditional crops as well as the enhancement and development of local products (e.g.: timber products, market garden produce, fish, the promotion of ecotourism, etc.) and local crafts (local production of improved cooking stoves). Special focus is given on activities generating income for vulnerable groups, notably women and young people (small-scale irrigation, drip irrigation, improved fishing and fish transformation techniques on a village scale, fodder production, beekeeping, small-scale renewable energy installations).	
g. Has any process been started or implemented to obtain free, prior and informed consent (FPIC) from groups affected by restrictions?		TBD with the final selection of the project sites. However, the project design implies a participatory approach involving all stakeholders concerned.	FPIC is only required when the standard is triggered.
5. Is there a risk that the project might negatively affect current land tenure arrangements or community-based property rights to resources, land, or territories through measures other than access restrictions?	No	The project is taking into account good practices of current land use management regimes to develop participative and sustainable management plans.	
6. Has any project partner in the past been involved in activities related to forced eviction, resettlement or access restrictions?	No		
Conclusion of ESMS Reviewer[2] on the Standard on Involuntary Resettlement and Access Restrictions			
Standard triggered? Yes / No / TBD - Explain why	NO	The Standard is not triggered as the project does not involve involuntary resettlement or access restrictions established under formal and statutory frameworks. However, as communities might themselves establish resource use regimes for the purpose of sustaining long-term use of the resources, care has to be taken by the project to avoid that this leads to adverse social impacts. Hence, it needs to be ensured that such community decisions process is adequate and reflects voluntary, informed consensus, and that appropriate measures have been put in place to mitigate adverse impacts, if any, on the vulnerable members of the community. This should be appropriately reflected in the project concept through the formulation of project activities and/or principles or by providing explicit methodological guidance.	
Are assessments required to better understand the impacts and identify mitigation measures? What specific topics are to be assessed? Have measures for avoiding impacts already been considered? Are they sufficient?			

[2] If the project budget is < CHF 500,000 this field (and the equivalent fields below) needs to be completed by the project proponent (instead of the IUCN ESMS Reviewer).

B2: Standard on Indigenous Peoples[3]			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Is the project located in an area inhabited by indigenous peoples, tribal peoples or other traditional peoples or to which these groups have a collective attachment? **If yes, answer questions a-j**	No		To be on the safe side this should be addressed by the PPG consultant(s).
2. If indigenous peoples do not occupy land within the project's geographical area, could the project still affect their rights and livelihood? **If yes, answer questions a-j**	No		
Answer only if you answered yes to 1 or 2 above.			
a. Name the groups; distinguish, if applicable, the geographical areas of their presence and influence (including the areas of resource use) and how these relate to the project site.			
b. What are the key characteristics that qualify the identified groups as indigenous groups?			
c. How does the host country's Government refer to these groups (e.g., indigenous peoples, minorities, tribes etc.)?			
d. How do these groups identify themselves?			
e. Is there a risk that the project affects indigenous peoples' livelihood through access restrictions? While this is covered under the Standard on Involuntary Resettlement and Access Restrictions, if yes, please specify the indigenous groups affected.	No	No indigenous groups will be affected.	
f. Is there a risk that the project affects indigenous peoples' material or non-material livelihoods in ways other than access restrictions (e.g., in terms of self-determination, cultural identity, values and practices)?	No		
g. Is there a risk that the project affects specific vulnerable groups within indigenous communities (for example, women, girls, elders)?	No		
h. Does the project involve the use or commercial development of natural resources on lands or territories claimed by indigenous peoples?	No		
i. Does the project intend to promote the use of indigenous peoples' traditional knowledge?	No		
j. Has any process been started or implemented to achieve the free, prior and informed consent (FPIC) of indigenous peoples to activities directly affecting their lands/territories/resources?			
k. Are some of the indigenous groups living in voluntary isolation? If yes, how have they been consulted? How are their rights respected?	No		

[3] The coverage of indigenous peoples includes: (i) peoples who identify themselves as "indigenous" in strict sense; (ii) tribal peoples whose social, cultural, and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations; and (iii) traditional peoples not necessarily called indigenous or tribal but who share the same characteristics of social, cultural, and economic conditions that distinguish them from other sections of the national community, whose status is regulated wholly or partially by their own customs or traditions, and whose livelihoods are closely connected to ecosystems and their goods and services

l. Explain whether opportunities are considered to provide benefits for indigenous peoples? If yes, is it ensured that this is done in a culturally appropriate and gender inclusive way?			
Conclusion of ESMS Reviewer on the Standard on Indigenous Peoples			
Standard triggered? Yes / No / TBD - Explain why	No	An initial assessment has not indicated any conditions that would trigger the Standard. However, once the project intervention sites are selected the PPG consultant(s) should verify whether there is any presence of indigenous peoples, tribal peoples or other traditional peoples as defined in footnote 3. If presence was confirmed, potential impacts on their social or economic livelihood should be assessed and, where relevant, addressed by mitigation measures.	
Are assessments required to better understand the impacts and identify mitigation measures? What specific topics are to be assesed? Have measures for avoiding impacts already been considered? Are they sufficient?			
B3: Standard on Cultural Heritage*			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Is the project located in or near a site officially designated or proposed as a cultural heritage site (e.g., UNESCO World Cultural or Mixed Heritage Sites, or Cultural Landscapes) or a nationally designated site for cultural heritage protection? **If yes, answer a-d below**	No		
2. Does the project area harbour cultural resources such as tangible, movable or immovable cultural resources with archaeological, historical, cultural, artistic, religious, spiritual or symbolic value for a nation, people or community (e.g., burial sites, buildings, monuments or cultural landscapes)? **If yes, answer a-d below**	No		
3. Does the project area harbour a natural feature or resource with cultural, spiritual or symbolic significance for a nation, people or community associated with that feature (e.g., sacred natural sites, ceremonial areas or sacred species)? **If yes, answer a-d below**	No		To be on the safe side this should be addressed by the PPG consultant(s).
a. Will the project involve infrastructure development or small civil works such as roads, levees, dams, slope restoration, landslides stabilisation or buildings such as visitor centre, watch tower?			
b. Will the project involve excavation or movement of earth, flooding or physical environmental changes (e.g., as part of ecosystem restoration)?			
c. Is there a risk that physical interventions described in items a. and b. might affect known or unknown (e.g., buried) cultural resources?			
d. Does the project plan to restrict local users' access to known cultural resources or natural features with cultural, spiritual or symbolic significance?			

[4] Cultural heritage is defined as: tangible, movable or immovable cultural resource or site with paleontological, archaeological, historical, cultural, artistic, religious, spiritual or symbolic value for a nation, people or community, or natural feature or resource with cultural, religious, spiritual or symbolic significance for a nation, people or community associated with that feature.

4. Will the project promote the use or development of economic benefits from cultural resources or natural features with cultural significance?	No		
Conclusion of ESMS Reviewer on the Standard on Cultural Heritage			
Standard triggered? Yes / No / TBD - Explain why	TBD	The project does not intend to reduce access to cultural sites or develop benefits form cultural resources but there is a small risk that civil works/ infrastructure might affect physical cultural resources. To be on the safe site the existence of such resources or potential or encountering buried ones will be determined during the PPG phase.	
Are assessments required to better understand the impacts and identify mitigation measures? What specific topics are to be assesed? Have measures for avoiding impacts already been considered? Are they sufficient?			
B4: Standard on Biodiversity Conservation and Sustainable Use of Natural Resources			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Is the project located in or near areas legally protected or officially proposed for protection including reserves according to IUCN Protected Area Management Categories I - VI, UNESCO Natural World Heritage Sites, UNESCO Biosphere Reserves, Ramsar Convention on Wetlands? **If yes, provide details on the protection status and answer questions a-d**	Yes	The only protected area on the preliminary list of potential project sites is the Ramsar site: Lake Gabou and the hydrographic network of the Tagant plateau.	
2. Is the project located in or near to areas recognised for their high biodiversity value and protected as such by indigenous peoples or other local users? **If yes, provide details and answer questions a-d**	No		
3. Is the project located inmear to areas which are not covered in existing protection systems but identified by authoritative sources for their high biodiversity value[5]? **If yes, provide details and answer questions a-d**	Yes	Mauritanian inland wetlands are havens of biodiversity due to the habitat they provide to both the fauna (aquatic, terrestrial and migratory) and flora found there. These sites are of vital importance for the trans-Saharan migration of certain Palearctic migratory species. They are also important wintering areas for a number of rare threatened European species such as the Egyptian vulture and storks. The survival of relict populations of the West African crocodile (threatened species according to IUCN Red List of Threatened Species) and a number of other species of reptiles and large mammals, from the Sudanian domain, largely depends on the management of the wetlands.	
Answer only if you answered yes to items 1, 2, or 3 above.			

[5] Areas important to threatened species according to IUCN Red List of Threatened Species, important to endemic or restricted-range species or to migratory and congregatory species; areas representing key evolutionary processes, providing connectivity with other critical habitats or key ecosystem services; highly threatened and/or unique ecosystems (e.g. to be determined in future by the evolving IUCN Red List of Ecosystems); areas identified as Key Biodiversity Areas (KBA) and subsets such as important Bird and Biodiversity Areas (IBAs), important Plant Areas (IPAs), important Sites for Freshwater Biodiversity or Alliance for Zero Extinction (AZE) sites.

a. If the project aims to establish or expand the protected area (PA), is there a risk of adverse impacts caused by the project on natural resources on areas beyond the PA?	n/a		
b. If the project aims at changing management of a PA, is there a risk of adverse direct and indirect impacts on other components of biodiversity?	No		
c. If the project plans any infrastructure for PA management or visitor use (e.g., watch tower, tourisms facilities, access roads), is there a risk of adverse impacts on biodiversity (consider the construction and use phases)?	No		
d. If the project promotes ecotourism, is there a risk of adverse impacts to biodiversity, e.g., due to water/waste disposal, disturbance of flora/fauna, overuse of sites, slope erosion etc.)?	No		The project might promote ecotourism; however negative impacts on biodiversity related to tourist frequenting place of high biodiversity value (e.g. disturbance of nesting areas) seem very low.
4. Will the project introduce or translocate species as a strategy for species conservation or ecosystem restoration (e.g. erosion control, dune stabilisation or reforestation)? **If yes, provide details and answer questions a-d**	Yes	Measures will be taken to reduce silting up and erosion and to stabilize dunes. Finally, based on IUCN's work, in particular the Red List of Threatened Species and actions undertaken elsewhere in Mauritania (Diawling National Park) and in the Sahel region, actions will be carried out aimed at regenerating flora and plant cover by means of the reintroduction of local, indigenous plants to wetlands, and afforestation with local species, which are more resilient to climate change.	
5. Does the project involve plantation development or production of living natural resources (e.g., agriculture, animal husbandry or aquaculture)? **If yes, provide details and answer questions a-d**	Yes	The project promotes the diversification of income for the local communities through the promotion of alternative production (market gardening, poultry farming, etc.).	
Answer only if you answered yes to items 4 or 5 above.			
a. Does this project involve non-native species or is there a risk of introducing non-native species inadvertantly?	No	In order to restore flora and plant cover, local, indigenous plants to wetlands are reintroduced and afforestation with local species which are more resilient to climate change. Market gardening activities will be supported by the improvement of traditional crops.	To be on the safe side the project should establish a protocol to guide species selection and should not promote permanent, stagnant water regimes. While it is understood that the project generally favors native species, in case where non-native species are deemed beneficial, the project must establish a technical protocol allowing the introduction of the non-natives species. This should be done in cooperation with the national research and academic institutions for better monitoring and surveillance of the process. In the field, technical services will need to justify this choice of the species and to control the context of their production and their introduction. Given the pastoral needs, particular attention will be given by the project to the regime of the concerned wetlands.
b. If a.is yes, is there a risk that these species might develop invasive behaviour?	No		
c. Is there a risk that the project might create other pathways for spreading invasive species (e.g. through creation of corridors, introduction of	No		

facilitatory species, import of commodities, tourism or movement of boats)?			
d. Is there a risk that species introduction causes adverse impacts on local people's livelihood?	No		
6. Is there a risk that the project negatively affects water flows on-site or downstream (including increases or decreases in peak and flood flows and low flows) through extraction, diversion or containment of surface or ground water (e.g., through dams, reservoirs, canals, levees, river basin developments, groundwater extraction) or through other activities?	No	The project aims at maintaining and restoring water flows.	
7. If the project involves civil works or infrastructure development outside areas of high biodiversity value, is there a risk of significant impact on biodiversity?	No		
8. Is there a risk that the project negatively affects water dynamics, river connectivity or the hydrological cycle in ways other than direct changes of water flows (e.g., water infiltration and aquifer recharge, sedimentation)? Also consider reforestation projects as originators of such impacts.	No		
9. Is there a risk that the project affects water quality of waterways (e.g., through diffuse water pollution from agricultural run-off or other activities)?	No		
10. Is there a risk that the project affects ecosystem functions and services not covered above, in particular those on which local communities depend for their livelihoods?	No	The project will promote an approach that will respond to anthropogenic and climate change induced pressures by i) restoring the services wetlands provide to the environment with a special focus on the water resource, and ii) increasing the adaptive capacity of populations and livelihoods. The resilience of the wetlands themselves will provide co-benefits such as the conservation of biodiversity. This resilience of wetlands, will allow for the maintenance and restoration of a biodiversity vital to a regional ecosystem, which will help increase the resilience of pastoral populations and their capacity for adaptation.	
11. In case the project promotes the use of living natural resources (e.g., by proposing production systems or harvest plans), is there a risk that this might lead to unsustainable use of resources?	No		
12. Does the project intend to use pesticides, fungicides or herbicides (biocides)? **If yes, provide details and answer questions a-b**	No		
a. Have alternatives to the use of biocides been rigorously considered or tested?			
b. Has a pest management plan been established?			
13. In case the project intends to use biological pest management techniques, is there a risk of adversely affecting biodiversity?	n/a		
14. Is there a risk that the project will cause adverse environmental impacts in a wider area of influence (landscape/ watershed, regional or global levels)	No		

including transboundary impacts?			
15. Is there a risk that consequential developments triggered by the project will have adverse impacts on biodiversity and ecosystem services? Is there a risk of adverse cumulative impacts generated together with other known or planned projects in the sites?	No	The project is in line with the national strategy for the conservation of wetlands in Mauritania approved in October 2014. It will be the first project to be approved within the framework of this strategy. Coordination will sbe held with relevant projects active in areas related to wetland conservation and management. First, project activities will be coordinated with all the wetland protection and conservation projects implemented on the Mauritanian coastline, as well as all the technical and financial partners working on the wetlands or on a subject that has an impact on their evolution. This will help ensure that the appropriate procedures are put in place for dealing with the coastal and continental wetlands in an integrated manner. This coordination among coastal and inland initiative will contribute to ensure that species conservation through the enhanced resilience of wetlands ecosystems to climate change is made in coherent manner. Also, the project will be prepared in collaboration with the following projects: "Development of an improved and innovative delivery system for climate resilient livelihoods" (LDCF/UNEP) and "Improving climate resilience of water sector investments with appropriate climate adaptive activities for pastoral and forestry resources in Southern Mauritania" (LDCF/AfDB), "Support to the adaptation of vulnerable agricultural production systems in Mauritania" (LDCF/IFAD), the "Mauritania Sustainable Land, water and forest management project " (GEF/World Bank). Close coordination will be established between the project and the MAVA Foundation, which is one of the Mauritanian Government's key partners in the conservation of the biodiversity of these wetlands, in particular those located on the coastline. The MAVA Foundation will be associated with the project through a specific initiative on sustainable management and conservation of the biodiversity of continental wetlands.	Agreed, but we should see what the PPG phase will come up with in terms of other current or planned activities taking place by other institutions at the sites. PPG consultant(s) should recommend the local coordination and partnerships needed for each site, to ensure that all actions will be mutually reinforcing (and not mutually contradicting) or triggering adverse cumulative ecological impacts.
Conclusion of ESMS Reviewer on the Standard on Biodiversity Conservation and Sustainable Use of Natural Resources			
Standard triggered? Yes / No / TBD - Explain why	No	The Standard is not triggered as impacts on biodiversity are expected to be exclusively positive. There is a low risk of minor impacts related to restoration/reforestation (invasive species), which can be readily addressed through appropriate handling to be described in the project document.	
Are assessments required to better understand the impacts and identify mitigation measures? What specific topics are to be assesed? Have measures for avoiding impacts already been considered? Are they sufficient?			

C. Other social or environmental impacts			
C1: Other social impacts			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Is there a risk that the project affects human rights (e.g., right to self-determination, to education, to health, or cultural rights) – other than those of indigenous peoples which are dealt with in the previous standard? Differentiate between women and men, where applicable.	No		
2. Is there a risk that the project creates or aggravates inequalities between women and men or adversely impacts the situation or livelihood conditions of women or girls?	No		While it is understood that the project intends to promote gender equality, it is nevertheless recommended that the potential of unintended impacts on women is looked at in detail once the sites are selected - as part of a targeted gender analysis. This should include analysing roles played by women and men in natural resources use and management and gender differences in access to, use of and control over resources, women's representation in governance processes and potential barrier to participation (general but specifically to project activities).
3. Explain whether the project use opportunities to secure and, when appropriate, enhance the economic, social and environmental benefits to women?		Special attention is given to activities generating alternative income for vulnerable groups, notably women and young people (small-scale irrigation, drip irrigation, improved fishing and fish transformation techniques on a village scale, fodder production, beekeeping, small-scale renewable energy installations).	When designing income generating activities, the PPG team needs to ensure appropriate involvement of women and other targeted groups.
4. Explain whether the project provide, when appropriate and consistent with national policy, for measures that strengthen women's rights and access to land and resources?			The project is in line with its objectives in the implementation of the national wetland conservation strategy and more particularly in its priority actions where the right of access to resources is a guarantee of success for any action aimed at improving the livelihoods of local populations.
5. Is there a risk that the project benefits women and men in unequal terms that cannot be justified as affirmative action?[6]	No		
6. Is there a risk that the project might negatively affect vulnerable groups[7] in terms of material or non-material livelihood conditions or contribute to their discrimination or marginalisation (only issues not captured in any of the sections above)?	No		To be addressed by the PPG consultant(s).
7. Is there a risk that the project would stir or exacerbate conflicts among communities, groups or individuals? Also consider dynamics of recent or expected migration	Yes	The measures for the regulation and use of wetland ecosystem services risk generating frustration in some users. However, the projects' participative approach for the development.	There might be a low risk in case benefits provided by the project might be distributed in a way that is considered by some groups as not fair. The project should avoid any

[6] Affirmative action is a measure designed to overcome prevailing inequalities by favouring members of a disadvantaged group who suffer from discrimination. However, if not designed appropriately these measures could aggravate the situation of a previously advantaged groups leading to conflicts and social unrest.

[7] Depending on the context vulnerable groups could be landless, elderly, disabled or displaced people, children, ethnic minorities, people living in poverty, marginalised or discriminated individuals or groups.

including displaced people.		adoption and implementation of the management plans will enable a joint understanding and help to prevent conflicts among stakeholders.	conflicts arising from such perceptions by informing relevant stakeholders about the grievance mechanism. To be added as note to the ToR of the PPG phase.
8. Is there a risk that the project affects community health and safety (incl. risks of spreading diseases, human–wildlife conflicts)?	No		
9. Is there a risk that a water resource management project could lead to an outbreak of water-related disease?	No		To be addressed by the PPG consultant(s).
10. Might the project be directly or indirectly involved in forced labour and/or child labour?	No		
11. Is the project likely to induce immigration or significant increases in population density which might trigger environmental or social problems (with special consideration to women)?	Yes	The restoration of the wetlands is expected to enhance the services they provide to the environment itself but also to human related activities. This may generate of risk of increased migration towards wetlands and therefore increased pressure. The projects' component 1 will therefore specifically enable the creation of management plans that are specific to the management and use of wetlands. Such management plans will integrate this risk into their recommendations and will contribute to ensuring that use and access to wetlands is managed according to relevant stakeholders' need and considering environmental limits and the socio-economy of the zone.	To be addressed by the PPG consultant(s).
12. Is there a risk that the project could negatively affect the livelihoods of local communities indirectly or through cumulative (due to interaction with other projects or activities, current or planned) or transboundary impacts?	No		The project works at two angles, promoting approaches to restore wetlands ecosystem and activities that will reduce the vulnerability of livelihoods. In fact, one criterion for selecting the final sites is high population level combined with high livelihoods dependence on natural resources. Despite the intention to improve vulnerabilities, social impacts might occur inadvertently, e.g due to a lack of comprehensive knowledge of social systems. Therefore the need for a diligent analysis of the socio-economic context during the PPG phase.
13. Is there a risk that the project affects the operation of dams or other built water infrastructure (reservoirs, irrigation systems, canals) e.g., by changing flows into those structures? If yes, has an inventory of existing water resources infrastructures in the project area been compiled and potential impacts analysed?	No	The project activities will help to restore the water flow in the wetlands.	To be looked at by the PPG consultant(s).
14. Are there any statutory requirements for social impact assessments in the host country the project needs to adhere to?	No		
15. Is there a risk that the project might conflict with existing legal social frameworks including traditional frameworks and norms?	No	All stakeholders concerned will be involved in the development of participatory management plans.	The PPG team need to provide an overview of relevant legislation, if any.

C2: Other environmental impacts			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Will the project lead to increased waste production, in particular hazardous waste?	No		
2. Is the project likely to cause pollution or degradation of soil, soil erosion or siltation?	No	Measures will be taken to reduce silting up and erosion and to stabilize dunes in order to maintain and restore water flows.	
3. Might the project cause pollution to air or create other nuisances such as dust, traffic, noise or odour?	No		
4. Will the project lead to significant increases of greenhouse gas emissions?	No	The project will help to reduce GHG emissions	
5. Is there a risk that the project triggers consequential development activities which could lead to adverse environmental impacts, cumulative impacts due to interaction with other projects (current or planned) or to transboundary impacts (consider only issues not captured under the Biodiversity Standard)?	No		
6. Are there any statutory requirements for environmental impact assessments in the host country the project needs to adhere to?	No		
7. Is there a risk that the project might conflict with existing environmental regulations?	No		
Conclusion of ESMS Reviewer on other Social or Environmental Impacts			
Are any significant negative environmental or social risks expected?	no	The project is expected to have environmental and social impacts that are highly positive overall. Some areas, however, deserve a more detailed examination to be undertaken during the PPG phase when analysing the environmental and socio-economic context of the selected sites (see comments above). The context analysis should include a special focus on gender which will allow identifying specific needs or risks; it will also provide the basis for addressing potential disadvantages and historical gender biases assuring a gender responsive project design.	
Are assessments required to better understand the impacts and identify mitigation measures? What specific topics are to be assesed? Have measures for avoiding impacts already been considered? Are they sufficient?			

D. Climate change risks (Risks caused by a failure to adequately take the effects of climate change on people and ecosystem into consideration)			
	Project proponent		**IUCN ESMS Reviewer**
	Yes, no, n/a, TBD	*Answer question, provide further detail where relevant*	*Comments, additional considerations*
1. Have the historical, current, and future trends in climate variability and change including climate sensitivity[8] been analysed in the project area?	No	Climate variability is a key element of the decline of inland wetlands in Mauritania. The main direct and indirect impacts of climate variability and change on Mauritania's major development sectors were identified during the vulnerability and adaptation studies conducted as part of the preparation of the CNI, PANA, SCN and TCN (May 2014). These impacts were identified through the combination of objective and factual observations, consultations and information sources from local knowledge in the field and a few presumptions of causality backed by current scientific knowledge.	
2. Is the project area prone to specific climate hazards (e.g., floods, droughts, wildfires, landslides, cyclones, storm surges, etc.)?	Yes	Droughts, bush fires, desertification, erosion, land degradation, lags in the commencement and ending of the rainy season, pockets of drought during the rainy season, decrease in the length of both the rainy season and farming season	
3. Are changes in biophysical conditions in the project area triggered by climate change expected to impact people's livelihoods? Are some groups more susceptible than others (e.g., women or vulnerable groups)?	Yes	In Mauritania, wetlands and pastoralist livelihoods are intimately related. A decline in the environment status of wetlands affects livelihoods. Since wetlands are a key determinant of pastoralist livelihoods, the decline of these ecosystems due to climate change has direct consequences on the life of pastoralists who are therefore extremely vulnerable to climate change. It is estimated that direct impact of climate change on pastoral resources includes a decrease in the production of fodder, which constitutes the basic cattle feed and is heavily dependent on climatic conditions, particularly on rainfall. Also, ponds may dry-up as a result and prose problems for livestock watering. Grasslands are likely to decrease and access to livestock feed may be difficult, due to pastures degradation and insufficiency. The indirect and socio-economic impacts of climate change on pastoral resources will be reflected by high cattle and meat prices resulting from reduced supply stemming from livestock mortalities caused by droughts/floods; the conversions of a large number of nomadic herders into settlers breeders; a decline in the incomes of stockbreeders; and a change in the composition of herds through the gradual replacement of cattle by small ruminants and camels.	

[8] Sensitivity is the degree to which a system can be affected, negatively or positively, by climate-related stimuli. IPCC, 2001

		The project's focus on wetlands will contribute to ensure that these ecosystems are maintained through some specific activities as a response to the climate change threats they are subject to. The project is also additional to the work on wetlands in Mauritania overall (inland and continental) where the response to climate change is limited and concentrated to coastal areas. Without the project, there would be no responses to climate change threats in inland Mauritania.	
4. Is there a risk that climate variability and changes might affect the effectiveness of project activities or the sustainability of intended changes?	Yes	The project's objective is to restore wetland ecosystems for climate change adaptation and resilience. However, existing water resources are vital to achieve the projects outcomes.	The PPG consultant(s) should review available information about different climate scenarios and their impacts on water resources and analyse risks or implications for project activities.
5. Could project activities potentially increase the vulnerability of local communities to current or future climate variability and changes?	No	The project helps to improve the resilience and the capacity for adaptation of populations living near to wetlands.	
6. Could project activities potentially increase the vulnerability of the local ecosystem to current or future climate variability and changes?	No	The project's objective is to restore wetland ecosystems for climate change adaptation and resilience.	
7. Is there a risk that the project might lead to climate maladaptation[9] through yielding short-term benefits while increasing longer-term climate risks?	No		
8. Explain whether the project seek opportunities to enhance the adaptive capacity of communities and ecosystem to climate change?		This project, focusing on inland wetlands adaptation and resilience considers biodiversity and ecosystem conservation in order to generate adaptation benefits. In fact, maintaining water flows in wetlands is essential for biodiversity conservation. This biodiversity is essential to ensure co-benefits to local communities and their livelihoods. In addition to that, the project will promote the diversification of activities generating income for the local communities.	
Conclusion of ESMS Reviewer on the Climate Change Risks			
Are negative impacts expected from the project?	No	The impacts are expected to be largely positive as it is the project's explicit intention to promote livelihood options that are more resilient to climate change. However the PPG consultant(s) need to take impacts of different climate scenarios on water resources into consideration when developing project activities.	
Are assessments required to better understand the impacts and identify mitigation measures? What specific topics are to be assesed? Have measures for avoiding impacts already been considered? Are they sufficient?			

[9] Maladaptation is a business-as-usual development, which by overlooking climate change impacts, inadvertently increases exposure and/or vulnerability to climate change. OECD, 2008

Appendix 5: ESMS Report

2. ESMS REPORT

2.1 OBJECTIVES

The following report addresses comments and questions raised in the ESMS Questionnaire & Screening Report for the "Continental wetlands adaptation and resilience to climate change" project in Mauritania.

- Section 2.2 provides an overview of the process of stakeholder engagement during the Project Preparatory Grant (PPG) phase of project design.
- Section 2.3 provides specifics on the project's compliance with the International Union for Conservation of Nature (IUCN) Standards.

2.2 PROCESS OF STAKEHOLDER ENGAGEMENT DURING PROJECT DESIGN

2.2.1 Site selection

A pre-selected list of nine potential wetlands for project intervention was developed jointly by the Government of Mauritania and the IUCN during the formulation of the Project Identification Form (PIF).

As part of the project's preparatory phase, a selection process was applied to identify the most suitable sites for program intervention from amongst the pre-selected wetlands. The selection process was based on collective consideration of diverse types of criteria. These included criteria related to the characteristics of the wetland; the coherence of the sites' characteristics with the program's objectives and capacity; the ecological and social context of each wetland, with particular attention paid to natural and human pressures; the degree of degradation of the wetland; and potential co-benefits to project intervention.

At the start of this process, a note presenting available information on selected criteria was produced by the PPG consultants. The intention was to use field visits to gather additional information to inform criteria and assure a participatorily process to identify up to three sites for project intervention. In the end, a decision was made by the Ministry of the Environment and Sustainable Development (MEDD) to reduce the list of potential sites to three before site visits by the PPG consultants. The selection process was finalized in consultation with the IUCN, the National Agency for the Great Green Wall in Mauritania (ANGMV) and the Ministry of the Environment and Sustainable Development (MEDD).

At the conclusion of this process, the following three sites were selected project intervention: Tâmourt Bougary, Gâat Mahmoûda and Tâmourt en Na'âj (see *Figure 2-1*). *Tableau 2-1* and *Tableau 2-2* present an overview of basic information on the three sites.

Figure 2-1 : Map of sites selected for project intervention

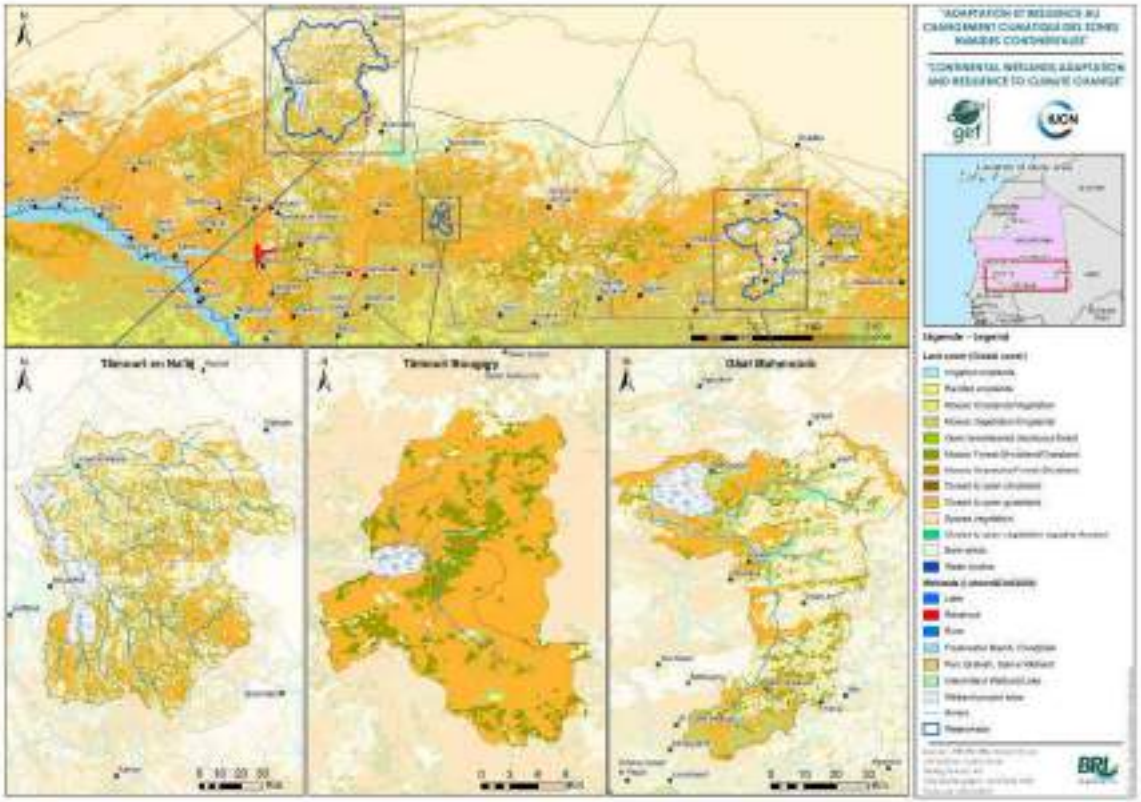


Tableau 2-1 : An overview of the three sites selected for project intervention

Wetland	Administrative context					Physical characteristics				International designations
	Wilaya	Moughataa	Commune(s)	Localities	Population	Type of wetland	Wetland area (ha)	Watershed coverage (km2)	Annual rainfall (mm)	
Tâmourt Bougary	Assaba	Kiffa	Eghaouat	9: Voum Lekhdeirat, Oum Lebsar, Chiwa, Ras El Vill (1500 inhabitants), El Gaa, El Vaddi (120 inhabitants), Oum Lebhar (500 inhabitants)	2 500	Tâmourt (permanent)	1 750	660	100-300	
Gâat Mahmoûda	Hodh Ech Chargui	Néma	Beribawatt	13: Souleymania, Diaguéré 1 et 2, Awainatt, Arafatt, Ghouds, Ahmedou, Chelkha, Hassi Jamaa, Gamel, Ain Oulad Oueis, Gdeuya, Nezaha	3 850	Gâat (semi-permanent)	24 300	4 400	200-300	- Important Bird Area (IBA MR018) - Proposed as a wetland of international importance under Ramsar Convention
Tâmourt Na'âj	Tagant	Moudjeria	Tâmourt Na'âj	31 villages (could be significantly more according to some sources)	~15 000 (3037 households)	Tâmourt	75 200	12 200	50-200	- Important Bird Area (IBA MR015) - Ramsar site

Tableau 2-2 : Stakeholder groups and NRM at the three sites selected for project intervention

Wetland	Stakeholder groups	Production systems	NRM management issues and observed trends
Tämourt Rouguy	• The State and its administration • Local community group of the de Ehel Sidi Mahmoud (multi-system users, control rights to fishing, flood recession agricultural areas and tourism) • Other resident agro-pastoralist groups • Resident Haratine (most important production systems are agriculture and NTFPs; potential for fisheries) • Transhumant pastoralists • Local fisheries committee • Ongoing projects (RIMRAP, PRAPS?) • Women's cooperatives for NTFPs and gardening	• Livestock (transhumant and sedentary pastoralism) • Agriculture (rain-fed, flood recession, market gardening) • NTFP production • Wood collection • Fisheries • Hunting	• Diminution of water resources (water diverted from wetland for agriculture on three oueds • Degradation of vegetation cover (charcoal/wood collection) • Loss of biodiversity • Siltation • Fisheries under pressure and diminishing; evolution in the modes of transforming fish due to economic constraints and the diminution of the resource • Expansion in area under agriculture; decrease in agricultural yield: agriculturalists are no longer able to support themselves in light of trend for pastoralists to become more sedentary • Increase in livestock visiting the wetland during the lean season; divagation of livestock; predation of livestock by crocodiles • Decrease in tourists since 2012, with the amplification of the terrorist risk in the Sahel • Conflict between crocodiles and NTFP collectors • Mortality of palms
Eäat Mahmoûda	• The State and its administration • Local community group of the Ouled Sidi Heiballah de Kunta (largely agro-pastoralists) • Other resident agro-pastoralist groups groups • Resident Haratine (most important production systems are agriculture and NTFPs) • Transhumant pastoralists • Malian fisherman (recently asked to leave) • Ongoing projects (RIMRAP, PRAPS, local fisheries project) • Local cooperatives	• Livestock (transhumant and sedentary pastoralism) • Agriculture (rain-fed, flood recession, market gardening) • NTFP production • Wood collection • Fisheries • Hunting	• Diminution of water resources • Natural resources (fish stocks, forests) are in a relatively stable state and the level of exploitation of these resources is considered moderate, given their abundance and natural characteristics (swampy ground, mosquitos) which make them inhospitable to herds. There have been few changes in modes of agro-pastoral production. • Some degradation of vegetation cover (charcoal/wood collection) • Loss of biodiversity • Siltation • Significant number of Malian fisherman; the "owner" fraction of the local community is interested in learning techniques to improve and organise the commercialisation of fish for export to Mali. Fisheries are perceived to be abundant. • The collection of NFLs and wood has been affected by the presence of Malian fisherman, that by their sheer numbers constitute a significant new user group. • Fishing inhibits circulation of livestock
Tämourt Na'Aj	• The State and its administration • Local community group de Kunta (largely agro-pastoralists, some fisheries, exclusive rights to fishing Mechra fishing site) • Other resident agro-pastoralist groups • Resident Haratine (most important production systems are agriculture and NTFPs) • Transhumant pastoralists • Malian fisherman (on Lac de Gabou) • Ongoing projects (RIMRAP, AGPO) • 4 AGPO (Association de gestion participative des Oasis) • 32 cooperatives for gardening in 20 villages, and 10 cooperatives in Nbeika • Local fisheries association • Local women's cooperatives	• Livestock (transhumant and sedentary pastoralism) • Agriculture (rain-fed, flood recession, oasis agriculture, market gardening) • NTFP production • Wood collection • Fisheries • Hunting	• Degradation of vegetation cover • Loss of biodiversity • Siltation • Sites for flood recession agriculture used to move, with nomadic groups moving to accommodate the location of best beds in the wetland. Today, the system is modified to allow for farming close to their villages. • The yield and area of rain-fed and flood recession agriculture culture is decreasing due to desertification and climate change. • Rivers feeding the pool of Gabou have been obstructed by silting, which could lead to complete drying of the pool, loss of arable land, the loss of watering sites during the lean season and the end of fishing. Pastoralists must make sumps. • Increase in number of livestock using wetland during lean season • Strong parasitism of livestock due to sedentary nature of rearing • Decline in tourism to Matmata since 2012, with the amplification of the terrorist risk in the Sahel • Market gardening is becoming more important to women's economy to compensate for the loss of productivity in other agricultural systems. The activity is constrained by the capacity of groundwater in the dry season. • An increase in salinity of groundwater in palm grove

Following the selection of sites, stakeholder consultation was carried out at the level of each site using a detailed questionnaire (see *Annexe I*).

The objective of site visits and stakeholder consultations was to improve understanding of numerous aspects of the site, including the status of wetland values and function; characteristics of the current production systems; vulnerable groups that could be impacted by the project; current management and governance systems; and the level of engagement of local stakeholders.

At each site, the PPG consultants made efforts to discuss the project concept and risks with relevant groups, and debate strategies for intervention for the project. The information collected during site visits and the results of stakeholder consultations were taken into careful consideration in the design of the project's logframe and activities.

Tableau 2-3 provides a synthesis of stakeholders consulted by site.

Tableau 2-3 : Synthesis of stakeholders consulted during site visits by PPG consultants

Wetland	Locality	Number of people interviewed	Number of women interviewed (%)
Tâmourt Bougary	Bougary	37	16 (43%)
Gâat Mahmoûda	Souleymanye	18	7 (39 %)
	Djegre	11	0 (0%)
Tâmourt Na'âj	Mechra	11	0 (0 %)
	Guebou	9	0 (0%)
	Nbeika	3	3 (100%)
TOTAL		89	26 (29%)

2.2.2 Vulnerable groups

During the process of stakeholder engagement, particular attention was made to identify and consult with vulnerable groups. In the scope and context of this project, groups that have been identified as vulnerable include Haratine and women.

Haratine constitute the largest minority group in Mauritania. They may have origins in different groups such as the Bambara, Fulani, Soninké or Wolof people, but have adopted a common language, Arabic, and culture (Hellweg, 2012). According to Minority Rights Group International, the group "is essentially composed of Moors (or Beidanes) and are descendants of black ethnic groups that were captured by the majority white Maures or Berber- Arabs and have been discriminated against and have lived under slavery for years" (Das, 2016). Being descendants of a castelike, endogamous system with hereditary occupations has made Haratine vulnerable to discrimination based on social and descent criteria.

Despite adoption of the Slavery Act in 2007 and a revised law on slavery that was approved in 2015, more recent reports continue to criticize the perceived lack of commitment to implement the law and end practices of discrimination against Haratine. (MRG, 2015). In 2012, the concluding observations on the initial report of Mauritania to the United Nation's Committee on Economic, Social and Cultural Rights (CESCR) confirmed that these group remains extremely economically vulnerable, noting "with concern that, despite the progress achieved in poverty reduction, a large proportion of the population, especially women, former slaves and descendants of slaves, still lives in poverty, including extreme poverty" (p.6).

During the project preparation phase, PPG consultants took particular effort to consult with and gather relevant information on the rights and use of natural resources by Haratine (men and women) and women (of all ethnic groups). Both groups are present at all project sites, where they are recognized as legitimate residents with rights to access local resources. However, they are often restricted to specific roles in production systems and can be marginalized within customary governance arrangements for land and resource management. The project also worked to identify potential risks specific to these groups. Based on these efforts, the project integrates significant opportunities and activities to benefit these groups, mitigate their risks and address their political and economic marginalization.

The project aims to improve the adaptive capacity of local community members, including vulnerable groups, through enhanced governance of wetlands and the adaptation and diversification of livelihoods. The project will work to assure vulnerable groups are adequately represented in governance and management mechanisms for natural resource management that will be developed by the communities themselves. Recognizing the significant role these groups these groups play in different production systems (i.e., agriculture, non-timber forest product production, fisheries) and their near 100% dependence on natural resources for food security and livelihoods, the project will develop targeted strategies and activities to promote the adaptation of production chains in which they play key roles in supply and transformation. Finally, the project will build the capacity of these groups to organize and act collectively, thus mitigating the risk that they do not share equally in associated benefits.

2.3 COMPLIANCE WITH IUCN STANDARDS

The following sub-sections provide direct responses to the remarks of the ESMS reviewer on the questionnaire completed during the project conception phase.

- The conclusion of the ESMS reviewer on whether the standards are triggered and their accompanying comments are included in boxes for reference.
- All questions or responses of the questionnaire for which the IUCN ESMS reviewer specifically requested additional information during the PPG phase are addressed individually at the end of each sub-section.

2.3.1 Standard on Involuntary Resettlement and Access Restrictions

Standard triggered? **No**

ESMS Reviewer: The Standard is not triggered as the project does not involve involuntary resettlement or access restrictions established under formal and statutory frameworks.

However, as communities might themselves establish resource use regimes for the purpose of sustaining long-term use of the resources, care has to be taken by the project to avoid that this leads to adverse social impacts. Hence, it needs to be ensured that such community decisions process is adequate and reflects voluntary, informed consensus, and that appropriate measures have been put in place to mitigate adverse impacts, if any, on the vulnerable members of the community.

This should be appropriately reflected in the project concept through the formulation of project activities and/or principles or by providing explicit methodological guidance.

During the project preparation phase and more explicitly visits to the three proposed project sites, it was confirmed that no resettlement of people will be undertaken in the context of this project. It was, however, noted that authorities at Gâat Mahmoûda have asked Malian fisherman using the site to leave. Stakeholders reported that the first Malian fisherman arrived at the site 17 years ago, but the number of Malian fisherman increased sharply in 2013 during the conflict in Mali. These fisherman were reported to have been given access to fish by local authorities, without the consent of other local community stakeholders, and had open access to the resource. Last year, under pressure from local communities, authorities revoked their permission to fish and asked the fisherman to leave the area this year.

As regards the potential for adverse social impacts, the project will support the establishment of decentralized community associations for the local and collective management of resources (AGLC). This process involves a series of consultations and negotiations with stakeholders to develop the AGLC and the "rules" that will be integrated into local conventions for resource management and other management tools (e.g. particular regimes and simple management plans).

The methodology proposed has been tested under previous programs (ProGRN, 2008). The lessons learned from ProGRN were carefully considered in the design of this project, most notably as regards guidance to assure representation of vulnerable groups and the establishment of mechanisms for grievance mediation and conflict resolution (GIZ, 2011). These considerations are reflected in activities as well as the proposed indicators to monitor project implementation and impacts.

ESMS QUESTIONNAIRE & SCREENING REPORT QUESTIONS:

B1-1 (page 6 of 19): During the project preparation phase, it was confirmed that no resettlement of people will be undertaken in the context of this project. Therefore, the TBD response is now **"no"**.

B1-4 (page 6 of 19): Following the PPG design phase, it is not anticipated that the project will create physical access to livelihood resources more difficult. The response to this question is now **"no"**.

B1-4 c (page 7 of 19): Yes, the existing legal framework regulating land tenure and access to natural resources has been analyzed and the rights of vulnerable groups, including women, has been considered in the design of the project.

In brief, the 1983 land reform ordonnance (*Ordonnance 83-127 du 05 juin 1983 portant réorganisation foncière et domaniale*) recognized women as being equal to men and formally provided women the right to own land. The current formal land registration system also allows smallholder farmers in rural areas, including women to register their property as common territory in the name of a cooperative.

A World Bank (2015) case study case study on women's access to land in Mauritania, commissioned by the Community of Practice of Finance Ministers on Gender Equality, found that less than 8% of the total number of deeds registered at the national level were held by women. This percentage was even lower in rural areas where most of the population still lives according to a common system of customary law. Under the informal customary system, male landowners with large holdings are responsible for ensuring community members, including Haratine and women, have access to land; however, this system is not recognized by the state meaning land tenure is not secured. In addition to individual deeds, women's cooperatives in multiple *wilayas* have received permanent land titles, with more pending. The case study explained that "Strengthening the role of the cooperative has been favorable to women because it affords them access to larger plots of land and credit, and increases their ability to organize in order to receive government and donor support. Women's cooperatives have expressed a strong interest in acquiring definitive titles for the land they work to secure their investments" (p. 7).

The case study, undertaken based on recommendations in the Land Governance Framework Report (LGAF), concluded:

> In practice, women have not acquired the same rights and duties as men in the Mauritanian land tenure system. While women's rights are formally recognized in the new system, customary law and other traditions persist. There is a definitive need for affirmative action on the part of government to make up for the past exclusion of women from landholding, especially as Sharia and the new law both recognize the right of women to own land. The important finding here is that many women own land in both urban and rural areas, but rarely have access to property by succession. There has been a slight improvement in women's access to land, particularly through irrigated perimeters. But the underrepresentation of women in decision-making spheres at the national and local levels remains a major handicap for women. This is particularly reinforced by the fact that most women are not familiar with the law and do not understand their rights (pg. 11).

Rights and conditions for access to resources are mandated through multiple codes, including the Water Code (*Loi n°2005-030 du 02 février 2005 portant Code de l'eau*), the Forest Code (*Loi n° 97-007 du 20 janvier 1997 abrogeant et remplaçant l'ordonnance n° 82-171 du 15 décembre 1982 portant Code forestier*) and the Pastoral Code (*Loi n° 2000-044 portant Code pastoral en Mauritanie*). These laws regulating resource rights and use, do not differentiate users by gender or ethnic group. However, as is the case for land tenure, rural communities in most areas continue to observe traditional systems when it comes to the management of specific resources. In these systems social differentiation plays a significant part in determining the roles of various groups in production systems and in the sharing of benefits. It can also play a role as regards representation in governance systems.

Finally, the legal framework in Mauritania (i.e., legal codes and associated decrees) also allows for the transfer of the mandate of management of certain natural resources to local community-based associations based on the establishment of local conventions. This project will support local communities to develop representative associations for the local and collective management of natural resources. The program will support the process to create these AGLC and their local conventions, working to assure that these bodies are representative and that vulnerable groups are part of decision-making processes to elaborate resource "rules". The program will also work directly with vulnerable groups to assure their understanding of their rights and build their capacity to adapt, improve and diversify their income-generating activities.

B1-4 d (page 7 of 19): As explained above, Mauritania's laws recognize the rights of all users at the project sites.

B1-4 e (page 7 of 19): The project will support community-driven processes to develop local conventions detailing principles and rules for the management of natural resources. Additional effort to consider the implications of any use restrictions will be assessed once this process has been advanced. The project will also support the establishment of clear mechanisms for grievance mediation and conflict resolution.

B1-4 f (page 7 of 19): The project will work with local communities to determine strategies that improve the adaptive capacity of wetlands and local communities to climate change and anthropogenic pressures. The elaboration of management rules will be community-driven and result from a negotiation process. The project will work to assure that vulnerable groups are well represented in the process and decision-making. It is anticipated that these strategies will be elaborated in a manner to minimize adverse impacts. Any compensation mechanisms would only be considered and decided upon at the time of project implementation.

2.3.2 Standard on Indigenous Peoples

Standard triggered? **No**

ESMS Reviewer: An initial assessment has not indicated any conditions that would trigger the Standard. However, once the project intervention sites are selected the PPG consultant(s) should verify whether there is any presence of indigenous peoples, tribal peoples or other traditional peoples as defined in footnote 3. If presence was confirmed, potential impacts on their social or economic livelihood should be assessed and, where relevant, addressed by mitigation measures.

During the project preparation phase and more explicitly visits to the three proposed project sites, it was confirmed that no indigenous groups will be affected by the project.

2.3.3 Standard on Cultural Heritage

Standard triggered? **TBD**

ESMS Reviewer: The project does not intend to reduce access to cultural sites or develop benefits form cultural resources but there is a small risk that civil works/ infrastructure might affect physical cultural resources. To be on the safe site the existence of such resources or potential or encountering buried ones will be determined during the PPG phase.

No such resources were identified during the course of the PPG phase. Given the PPG consultants were not able to visit the entirety of each wetland or adjacent sites proposed for project implementation, the project should continue to monitor whether this standard will be triggered by any of the strategies developed during the course of the project.

2.3.4 Standard on Biodiversity Conservation and Sustainable Use of Natural Resources

Standard triggered? **No**

ESMS Reviewer: The Standard is not triggered as impacts on biodiversity are expected to be exclusively positive. There is a low risk of minor impacts related to restoration/reforestation (invasive species), which can be readily addressed through appropriate handling to be described in the project document.

The PPG consultants confirm that the project logical framework and activities are designed to have a positive impact on biodiversity. To achieve this outcome the project will integrate traditional knowledge with targeted technical expertise to develop sustainable natural resource management strategies and techniques that are compatible with biodiversity.

The project will also undertake a series of studies to evaluate the status of resources, including biodiversity, and develop particular regimes to address values under particular threat. These will all be integrated into the DGRN mechanism developed.

Finally, the project has proposed a series of activities (tracking and monitoring systems, reflection exercises) and aimed at ensuring natural resource measures are implemented correctly and do not have negative environmental impacts.

ESMS QUESTIONNAIRE & SCREENING REPORT QUESTIONS:

B4-15 (page 14 of 19): During the site visits by PPG consultants, information on other existing or past projects or initiatives that have been implemented at each of the sites was collected and documented.

In the case of ongoing projects or initiatives, the consultants worked to identify points of contact and gather information about ongoing and planned activities (e.g., sites, objectives, progress, evaluation) to support future coordination and collective planning. Additional information was gathered on initiatives that were considered opportunities for synergy.

Further coordination during the process to develop strategies and techniques for adapted natural resource management will be required. As such, the project proposes to support the creation and build the capacity of coordination committees (i.e., CCBV) in each of the watersheds in which the three wetland sites are found and one or more AGLC at each of the wetland sites. A key objective of these groups will be to engage with all stakeholders (including other projects) to improve coordinated planning, management and monitoring of resources and the impacts of interventions.

2.3.5 Other social or environmental impacts

Standard triggered? **No**

ESMS Reviewer: The project is expected to have environmental and social impacts that are highly positive overall. Some areas, however, deserve a more detailed examination to be undertaken during the PPG phase when analysing the environmental and socio-economic context of the selected sites (see comments above). The context analysis should include a special focus on gender which will allow identifying specific needs or risks; it will also provide the basis for addressing potential disadvantages and historical gender biases assuring a gender responsive project design.

The PPG consultants concur that the project's environmental and social outcomes should be highly positive overall. More detailed examinations of the social and environmental context of each site was undertaken as part of the PPG phase based on available literature, site visits and consultations with stakeholders. Gender was a significant aspect of these efforts.

ESMS QUESTIONNAIRE & SCREENING REPORT QUESTIONS:

C1-2 (page 15 of 19): The PPG consultants collected significant information on the role of women in different production systems.

Across the project sites women and Haratines play a significant role in the management and use of natural resources. Women are the most predominant group in the in the collection of certain NTFPs and gardening, and the transformation of certain NTFP products (see *Tableau 2-4* for additional details). Women also contribute to other production chains by hoeing and harvesting both rainfed and flood recession crops, collecting timber, and making butter and milk curd. Their rights to collect NTFPs is well recognized (apart from gum Arabic which is traditionally collected by men).

However, access to agricultural land is under the authority of a local representative of the tribe, and they have no rights as regards management of forest plantations on exploited land. In particular cases women have organized into cooperatives under the control of notables, and have even been attributed land in anticipation of the future financing of projects.

However, they do not have the necessary capacity to capitalize on this opportunity and are lacking skills to improve the value of NTFP through transformation or marketing.

C1-3 (page 15 of 19): The PPG team worked to gather information on and consult with women and other vulnerable groups to identify and design targeted activities. These activities include specific capacity building (awareness raising, trainings and support for cooperatives) under component two of the logframe. The project will also promote the inclusion of women and Haratine in the AGLC to assure their representation in decision-making.

C1-5 (page 15 of 19): The project is designed to improve the adaptive capacity of wetlands and adjacent communities. A large part of the project is focused on developing representative governance bodies for DRGN, developing the management framework for wetlands and promoting the adoption of adapted strategies and techniques for livelihood activities. Most of the project's activities will benefit men and women.

C1-6 (page 15 of 19): As explained above, the project has been designed to positively impact vulnerable groups by assuring their representation in decision-making bodies and is not expected to negatively affect vulnerable groups.

C1-7 (pages 15 & 16 of 19): As the ESMS reviewer remarked, the risk of inequitable benefit sharing will need to be addressed. This risk, along with the risk for tension over principals geared at assuring representation of vulnerable groups in AGLC was raised to PPG consultants during the site visits. The project framework includes the creation of mechanisms for grievance mediation and conflict resolution. The importance of this highlighted as one of the key principles for the effective establishment of DGRN via the creation of AGLC by ProGRN (GIZ, 2011).

C1-9 (pages 15 & 16 of 19): Based on the information collected by the PPG consultants and the strategic framework developed for this project there is no reason to expect the water resource management proposed would lead to the out-break of water-related disease. This is something that should be monitored as strategies for watershed/wetland management are further developed in the course of the project.

C1-11 (page 16 of 19): The project is designed to build the resilience of these wetlands to climatic (e.g. rainfall variability) and non-climatic (e.g. population growth, economic development) stressors. It recognizes that climate change and anthropogenic pressures are already having an impact on the project sites and that these factors are expected to continue to impact these areas in the future. Any increased migration towards the wetlands as a result of this project, which we maintain is a risk, would contribute to these pressures and need to be considered in the process to identify and implement appropriate restoration/maintenance/management strategies. This consideration has been taken into account in project design through the inclusion of diagnostic assessments of project sites to better understand physical properties, hydrological flows and allocations, anthropogenic influences impacting hydrological flows, potential of alterations to impact wetlands, etcetera. The project will also engage external capacity to lead participatory vulnerability and scenario planning exercises in each of the three watersheds where project sites are located. This activity will be coordinated with the diagnostic assessments, and aims to further assure management strategies are strategic and well-adapted to changing conditions. It is also intended to raise the understanding of stakeholders on the impacts of climate change and human activities and allow a framework for discussion and negotiation on appropriate management measures.

Tableau 2-4 : The role of different groups in NTFP production system

Species	Local common name(s)	Product(s)	Uses	Market chains	Site prevalence and practices						Barriers to production
					Tâmourt Bougary	Collection or transformation	Gâat Mahmoûda	Collection or transformation	Tâmourt en Na'âj	Collection or transformation	
Nymphéa lotus	Nénuphar, dayri	Tuber	Food, fodder	None	X	Women	X	None	X	Women	
Ziziphus mauritiana	Jujube, nbeg	Fruit	Food, medicine	Local, regional, national	X	Women	X	Women	X	Women	
Balanites egyptiaca	Muraau blanc, teichott	Fruit (tsuggal)	Food, medicine	Local, regional, national	X	Children	X	Women	X	Children	
Acacia nilotica nilotica	Amour	Pod (awlaha)	Tanning of skins	Local (skins sometimes national)	X	Women		Women	X	Women	• Transport and storage facilities
Acacia senegal	Acacia gommier, arouar	Gum arabic (drained from cuts in bark)	Gum arabic	Regional, national	X	Men	X	Men	X	Men	
Hyphaene thebaica	Doumier, kharoub	Fruit	Food	Local, regional	X	Children (collection) and women (transformation)					• Progressive diminution of its range from the north (climate change) is putting it in competition with *Acacia tortilis* • High mortality rates from disease
Sclerocarya birrea	Marula, dembou	Fruit	Food, medicine	Local	X	Children					
	Taqla thanthor	Leaf	Food	Local, national (?)			X	Women	X	Women	
Typha spp.		Flower	Stuffing for cushions				X	Women			

C1-12 (page 16 of 19): The PPG consultants gathered as much information as possible on the socio-economic context of each wetland site and has taken this information into account in designing the project's logframe and activities. The project has proposed an approach that will be community driven and build off traditional systems for adaptation. Reflection exercises are planned to examine the success and impacts of restoration/maintenance/management strategies and will provide an important opportunity to detect any inadvertent social impacts.

C1-13 (page 16 of 19): The wetlands selected are each part of broader local and regional hydrological regimes that are important hydrologically, economically and ecologically. The management of these water resources is complex and involves a broad range of stakeholders. To improve coordination and assure informed and strategic decision-making at the level of regional or sub-regional watershed areas, and support the improvement or maintenance of the values and functions of three selected wetlands (Output 1.2.), the project will support the creation and build the capacity of coordination committees (*Comité Coordination du Bassin Versant* - CCBV) in each of the watersheds in which the selected wetlands are situated. The primary function of the CCBV will not be to take over the roles of existing water-related agencies, but rather to strengthen coordination, planning, policy setting and monitoring of each watershed. As regards detailed information on dams and water infrastructure, this data will be collected as part of diagnostic assessments. These assessments will aim to not only compile this type of information, but also convert it into a format that can be used to inform strategic decision-making.

C1-15 (page 16 of 19): The project is designed to build off traditional systems using provisions in legal framework to convey the management of resources to local communities (as described under the sub-section on the Standard on Involuntary Resettlement and Access Restrictions above). The mechanism has been tested successfully through other programs in Mauritania, where stakeholders have reported it prevented and reduced conflicts over natural resource use, improved the inclusion of vulnerable groups and had a positive impact on the state of natural resources (GIZ, 2011).

2.3.6 Climate change risks

Standard triggered? **No**

ESMS Reviewer: The impacts are expected to be largely positive as it is the project's explicit intention to promote livelihood options that are more resilient to climate change. However, the PPG consultant(s) need to take impacts of different climate scenarios on water resources into consideration when developing project activities.

The project recognizes the value of taking future climate scenarios into consideration when developing management strategies for the three wetland sites and their resources. Studies of observational records and models used to project changes in climate indicate that the Sahel region of West Africa has undergone significant changes to its climate and predict that wetland ecosystems in this region will continue to be at significant risk from both anthropogenic and climate related drivers of change in the future (Niang et al., 2014). Many Global Circulation Models (GCM) suggest a temperature rise of 2 to 3°C in the overall Southern region of Mauritania, but remain inconclusive for rainfall patterns (see *Figures* 2-2, 2-3, and 2-4 below). This is attributed in part to the lack of consistent observational (or input) data. Despite the difficulties some models have in simulating some aspects of the area's climate, studies like Mbaye et al (2015) have demonstrated the consistency of models in predicting many changes. These changes include: the increase of temperature, a decrease of precipitation, a decrease in availability of water resources, a decrease of river discharge, a decrease in run-off, actual evapotranspiration and soil moisture. The project is taking the impacts and risks associated with these changes into consideration in its overall approach. Sites specific scenario modeling was not feasible during the development phase given the scale of the available climate change projections, data gaps and the resources associated with undertaking this type of analysis across three sites. As such, the project includes the following activity as part of the process to develop sites-specific management strategies and NRM techniques:

- *Undertake participatory vulnerability assessments and scenario planning for each of three wetlands/watersheds*
  Recognizing that climate change and anthropogenic pressures are already having an impact on the project sites and that climatic and non-climatic factors are expected to continue to impact these areas in the future, the project will engage external capacity to lead participatory vulnerability and scenario planning exercises in each of the three watersheds where project sites are located. This activity will be coordinated with diagnostic assessments, and aims to further assure management strategies are strategic and well-adapted to changing conditions. It is also intended to raise the understanding of stakeholders on the impacts of climate change and human activities and allow a framework for discussion and negotiation on appropriate management measures.

ESMS QUESTIONNAIRE & SCREENING REPORT QUESTIONS:

D-4 (page 19 of 19): The PPG team has reviewed available information on the probably impacts of climate change in the Sahel region of Mauritania, where all three sites are situated. As explained above, the predictions of these models are relatively consistent in the types of changes that are anticipated. Figures 2 through 4 below presents the projected future average high temperature, average low temperature and average total rainfall based on an average of the eight GCMs available on the Climate Change Knowledge Portal (World Bank, CGIAR, CCAFS, CIAT) for three 3 Special Report on Emissions Scenarios (SRES): Low (B1), Medium (A1B) and High (A2).

Figure 2-2 : Projected future average high temperature at three project sites based on an ensemble of the eight GCMs available on the Climate Change Knowledge Portal for three SRES: Low (B1), Medium (A1B) and High (A2) (Source: Girvetz et al., 2009)

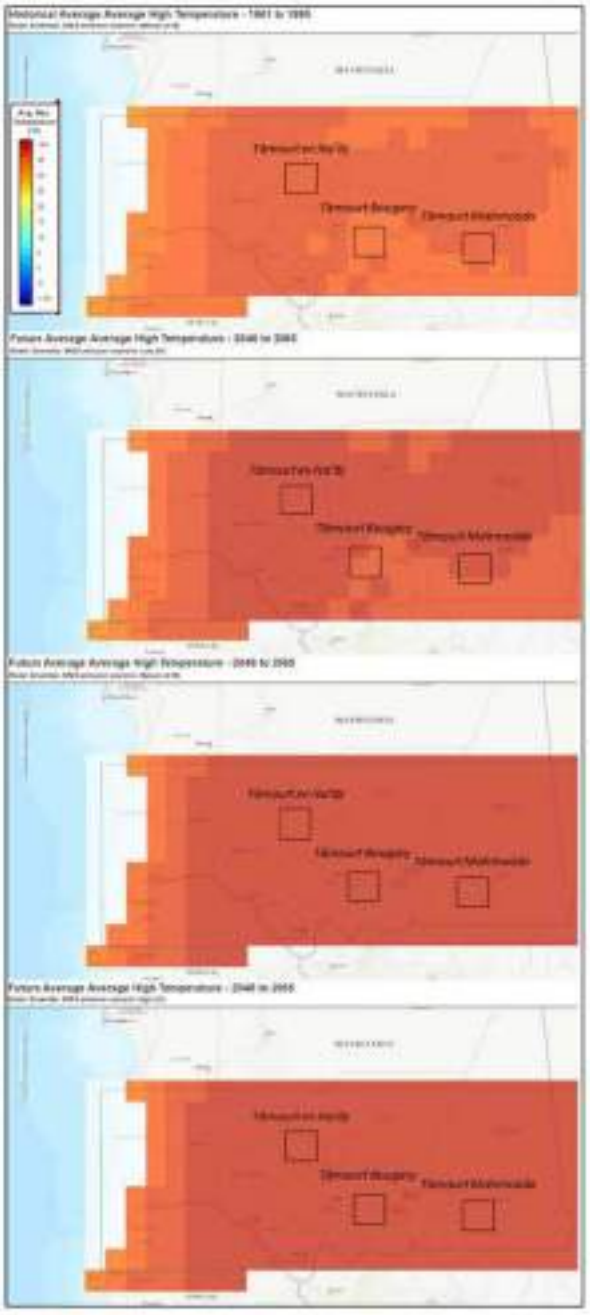


Figure 2-3 : Projected future average low temperature at three project sites based on an ensemble of the eight GCMs available on the Climate Change Knowledge Portal for three SRES: Low (B1), Medium (A1B) and High (A2). (Source: Girvetz et al., 2009)

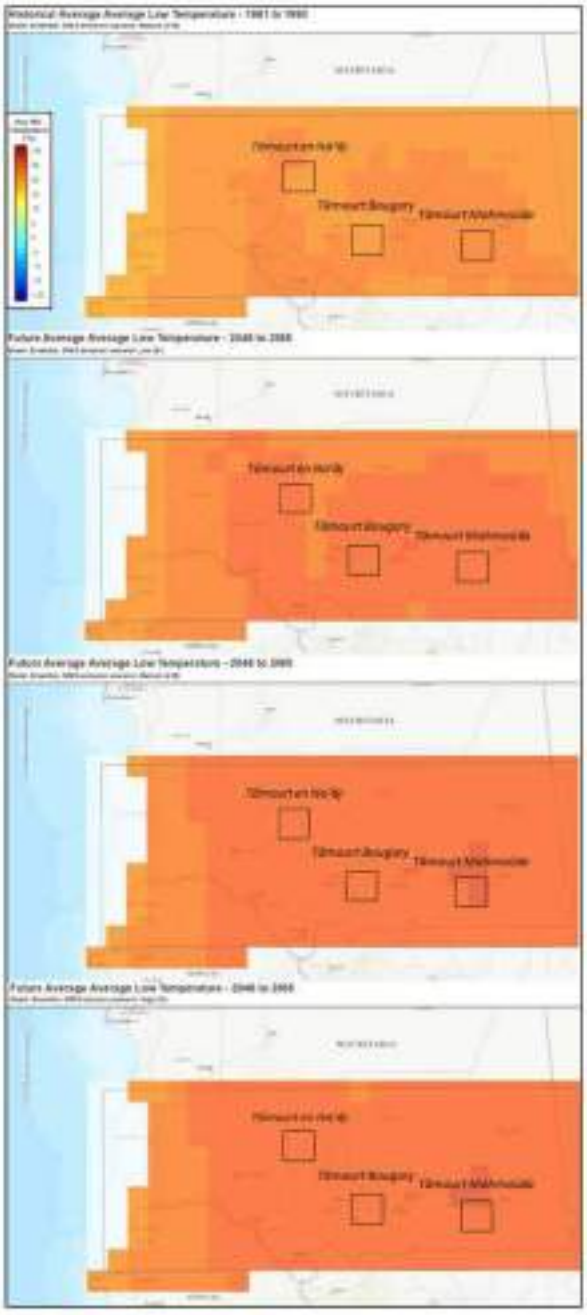
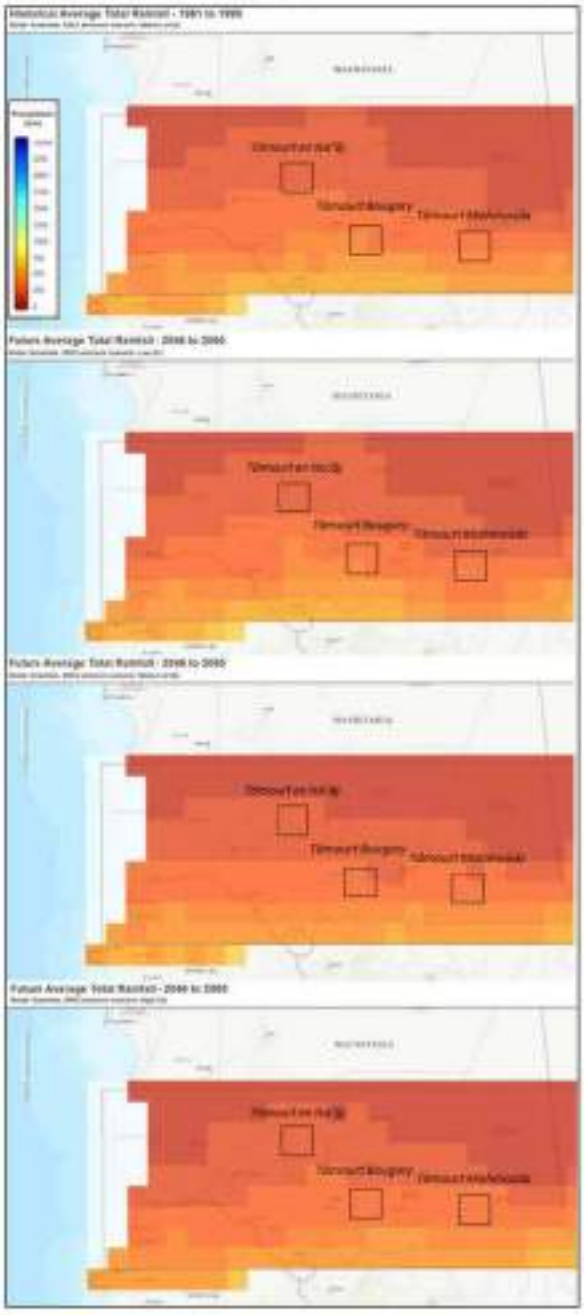


Figure 2-4 : Projected future average total rainfall at three project sites based on an ensemble of the eight GCMs available on the Climate Change Knowledge Portal for three SRES: Low (B1), Medium (A1B) and High (A2). (Source: Girvetz et al., 2009)



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Annexe 1: Protocole de collecte de données relatif à la phase de visites et consultations de terrain

Mission terrain projet « zones humides »

PROTOCOLE D'ENQUETE SUR LES ZONES HUMIDES PRESELECTIONNEES

SEQUENCE-TYPE DE COLLECTE DES DONNEES :

0. **Avant l'arrivé sur le site** : collecte de renseignement auprès des personnes participantes à la mission, ayant une connaissance des sites

1. **Jour 1 / Reconnaissance** : visite du site (avec personnes ressources – recommandés par maires + ST) et balayage des thèmes clés

2. **Jour 1 / Débriefing** : échanges internes équipe en soirée, pour viser les compléments à collecter

3. **Jour 2 / Approfondissement** : synthèse des informations, prospective et capacités
Cartographie participative en petits groupes, unique voire multiples sur plusieurs villages ou avec différents acteurs (configuration à établir selon des critères de connaissance, représentativité, liberté de parole, groupes vulnérables) : 20-25 personnes maximum. Ne pas convoquer une réunion d'assemblée.

4. **Jour 2 / Visite(s) et entretien(s) complémentaire(s)** tôt le matin ou avant le départ sur un site suivant (notamment avec leaders d'organisation potentiel de mise en œuvre).

5. **Jour 2 / Débriefing** : échanges internes équipe en soirée, pour synthétiser

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Cartographie participative : plutôt informelle, en trois temps, avec maximum 20-25 personnes (bien identifiés leur position et rôle social) :

1. État des lieux (saisonnier),
2. Prospective (évolution, mesures à prendre),
3. Capacités (qui peut faire quoi)

Base graphique : dessin sable et/ou papier blanc (+ image Google Earth comme support)

Remarques :

- Définir comment introduire la mission, de façon diplomate, mais franche (présélection, dimension développement, engagements écolo)
- Éviter l'assemblée générale trop stratégique pour accéder à de l'information constructive
- Diviser les groupes et préférer les entretiens informels sur site (hors résidence des notables, hors mairie), avec différents informateurs représentatifs de la diversité des intérêts
- Renouveler les visites de terrain si nécessaire, en changeant de guide éventuellement, pour voir d'autres aspects, mais en équipe pluridisciplinaire.

Noter pour chaque entretien :

- Le lieu de l'entrevue,
- Le rôle social de la personne entretenue,
- Le groupe représenté par la personne interrogée.

1. **Description générale zone humide et systèmes production**

Information à collecter
Type de ZH
Superficie(s) de l'écosystème ZH (ha)
Description et superficie du BV (ha)
Perception pluviométrie
Nombre de mois d'inondation
Période(s) d'inondation
Description des valeurs biodiversité de la ZH
- Quelles sont les principales espèces animales et végétales qu'on rencontre dans cette zone humide ? - Y a –t- il des espèces animales et/ou végétales qui sont disparues ? Si oui, pourquoi ? - Y a –t- il des espèces animales et/ou végétales qui sont en voie de disparition ? Si oui, pourquoi ? - Y a –t- il des espèces animales et/ou végétales qui sont apparues ? Si oui, pourquoi ?
Identification des localités directement concernées par ZH + BV
Histoire du peuplement autour de la mare, évolution du site et événements critiques. **Situation actuelle :** - Quels villages/campements utilisent la ZH ? (préciser la commune) - Utilisation par les anciens villages/par les villages et campements récents
Données démographiques des localités concernées ZH + BV
- Nombre habitants / inscrits sur liste électoral / nombre de foyers - Identité communautaire de chaque village (origine géographique des fondateurs // tribu(s) ou fraction) - Importance de la migration saisonnière de résidents (% homme - % femme) – Activités + destination - Importance des transhumants et autres usagers des RN non-résidents
Description et caractérisation de l'organisation de l'espace en périphérie de la ZH + BV
- Position des localités par rapport au réseau hydrographique - Position des localités par rapport au réseau de communication - Existence de zone en voie d'urbanisation - Occupation du sol en périphérie de la ZH - Est-ce que les ménages des plus pauvres sont dans des zones particulières (comme sur le bord d'une zone / communauté) ?
Description et caractérisation de l'usage de l'eau de la ZH (hors système de production)
- Nombre de localités concernées par source d'approvisionnement en eau domestique en saison sèche et en hivernage. - Lieu de puisement pour l'eau potable, de lessive, de rejet des déchets (solide, liquide, etc.) - Problèmes/atouts du point de vue social, sanitaire, environnemental, etc.
Utilisation des ressources naturelles : les enjeux (partage des bénéfices)
- Quelles sont les ressources utilisées ? - Quelles sont leur niveau d'abondance ? - Quelles sont leur évolution/tendance ? Pourquoi ? - Quelles sont leur répartition spatiale ? - Quelles sont les activités d'utilisation des RN qui posent problème ? - Quelles sont les synergies ou concurrence entre les différentes activités d'utilisation ?
Description et caractérisation de l'ensemble des systèmes de production dans ZH + BV (agriculture, élevage, PFNL, pêche, bois énergie, etc.) et évaluation de leur importance relative dans les différents types de systèmes d'activités familiaux (nombre de ménages, etc.)
Agriculture :

- Localisations et appartenances communautaire des agriculteurs, - Systèmes de culture - Foncier (lieu résidence propriétaires, taille champs familiaux, surface faire valoir direct/indirect) - Spéculations, variétés, - Travail du sol, intrants, calendrier, type de main d'œuvre, rendement, - Destination récolte, % des besoins vivriers couverts, revenus le cas échéant
Elevage : - Localisations et appartenances communautaires des éleveurs - Systèmes d'élevage (type de troupeau, taille, composition spécifique, races) - Proportion grands transhumants/sédentaires, - Grands pâturages du BV (source d'eau associée) et de la mare - Espèces fourragères herbacées et ligneuses - Type de main d'œuvre (berger transhumant, soins du troupeau sédentaire, vente) - Produits et utilisation des produits animaux (vente, rôle sociale, troc) et des revenus.
PFNL : - Types de produits (espèces et partie(s) des plantes, organes concerné) - Espaces-ressources et calendrier de collecte. - Pour chaque produit : répartition du travail de collecte, transformation stockage vente. - Utilisation des revenus (responsable, destination).
Bois : Pour chaque produit (construction, équipement, combustible) : - Espèces prélevées - Espaces-ressources - Répartition du travail de collecte, transformation stockage vente - Utilisation des revenus (responsable, destination)
Pêche : - Origine des pêcheurs (communauté, résidence etc.) - Technique de pêche (engins, pratiques) - Période - Régulation collective - Produits (espèces, quantité/ an) - Destination, valorisation, utilisation des revenus si échange (troc, vente)
Chasse : - Type de gibier et produits - Pratiques - Identité des chasseurs - Evolution
Economie des familles : interaction économique entre les différentes activités locales liées aux RN et avec les autres revenus extérieurs
Importances relatives des différentes activités dans l'usage de la ZH (priorité selon les différents groupes identifiés). **Interactions** : complémentarité/concurrence entre activités pour l'accès aux RN
Situation de la ZH dans l'espace régional - Localisations, distances des **services utilisés par les habitants** (réseau routier, santé, éducation primaire et secondaire, banque, administration territoriale). - **Systèmes d'échanges autour des productions locales** (échange de proximité, "filières"), lieux de vente et d'approvisionnement pour les différentes activités productives et les produits de base. => identification des pôles économiques auquel la ZH est liée. - **Personnalités locales** ayant eu une position politique et/ou économique influente pour la ZH.

- **Les changements socio-économiques dans les 5-10 ans passés qui ont affecté la ZH + BV :** mouvements migratoires nouveaux, équipements publics, politique locale/étatique, intervention de développement, etc.
Description et caractérisation de l'impact des activités humaines sur la ZH+BV et leurs ressources et évaluation de leur importance relative et des effets de concurrence/synergie entre elles.
Description et caractérisation de l'impact du climat sur la ZH et évaluation de leur importance relative
Perception du changement climatique - Quels changements ou phénomènes nouveaux avez-vous observé au cours des 30 dernières années ? Pluie, Température, Calendrier des saisons, Fertilité des sols, Biodiversité ? **Impacts** du changement climatique sur les activités économiques - Faible pluviométrie // Fortes températures // Erosion // Appauvrissement des sols // envasement des // réduction des surfaces inondées // Baisse de productivité // Maladies // Ravageurs // Pertes de récolte // Problèmes de conservation // Décalage de production // Inadaptation des variétés ou espèces // Pénibilité du travail // Baisse des revenus Pratiques paysannes pour faire face au changement climatique - Quelles pratiques ont changé depuis 30 ans ? - Assolement et rotation // Changement des variétés // Modification des itinéraires techniques // Utilisation d'éléments fertilisants // Gestion des ressources en eau // Lutte contre les ravageurs et espèces invasives // Dates et modes de récolte // Modes de conservation des récoltes //
Description et caractérisation des effets de la désertification et évaluation de leur importance relative
Description et caractérisation du stress hydrique (actuel et futur) sur base de la disponibilité en eau, la demande et les besoins
Description et caractérisation du/des système(s) de gestion existant(s) de la ZH et de ses ressources, y compris système de suivi (y leçons tirées du processus de conception/mise en œuvre du point de vue des acteurs)
- **Description des règles traditionnelles d'accès et de gestion des RN** : ressources faisant l'objet d'une gestion (objectifs), autorité délivrant l'accès, ayant droits pris en compte, règles de priorité, de temporalité, mode de contrôle, de résolution de conflit. - **Description du processus de conception du dispositif de gestion "moderne" s'il existe** : cadre institutionnel et juridique, organisation de l'unité de gestion (préciser le degré d'initiative locale et le mode d'accompagnement), délimitation des espaces-ressources, définition des règles (intégration des usages coutumiers), des mesures de contrôles. - Relater des éléments **d'ajustement, d'actualisation du dispositif et des règles**, en cours d'action. - Relater des **problèmes gérés, problèmes non résolus** relatifs à la GRN dans l'espace de gestion et dans le BV. - **Auto-évaluation de la performance du système de gestion** (efficacité, légitimité, équité, degré d'autonomie)
Décrire et caractériser le type d'intervention requis à l'échelle de l'hydrosystème (ZH + BV)
Opinions des différents acteurs (groupes d'intérêts, autorités) sur : - **Les actions possibles et prioritaires** à mener (toute nature confondue) : organisation, aménagement, équipements, RC techniques - **Pour chaque action identifiée : l'approche requise** (échelle de gestion de l'intervention, partage des responsabilités et des investissements, compétences externes requises, contraintes de calendrier, autres opportunités existantes à saisir) **=> élaboration d'un plan sommaire d'action prévisionnel.**

2. Analyse des parties-prenantes

Information à collecter
Description du degré d'organisation de la communauté
- **Systèmes d'autorité** : qui se charge de représenter la communauté ? y a-t-il différents types de représentants de la communauté à l'extérieur ? - **Division sociale du travail** : dans la famille : femmes, jeunes femmes, jeunes hommes, homme, enfants dans la communauté, selon le statut social, la "caste", etc.)
Identification des différents groupes d'intérêts concernant le partage de l'accès et des bénéfices rendus par la ZH et du BV et de leurs interrelations.
- **Villages/campements** concernés par l'agriculture, le pâturage, le collecte de bois (œuvre, énergie), la cueillette (distinguer les différents PFNL), la pêche, le charbonnage. - Caractérisation des **différents types d'usagers** : résidence (y compris allochtones), appartenance sociale (ethnie, statuts, genre, lien à l'autorité locale traditionnelle et étatique) - Les groupes connus pour leurs **spécialité** (agriculture, charbonnage, pêche, etc.) - Les **différents types d'éleveurs** en fonction de leur mode d'usage de la ZH (type de ressource, période, dimension du troupeau, mode de conduite, pression de prélèvement)
Nombre potentiel de bénéficiaires du projet (et % de femmes) distingués
Quantification des personnes/foyers par groupe d'intéressés par la restauration de la ZH et le développement socio-économique local.
Identification et description des groupes vulnérables
Critères de vulnérabilité relative des différents groupes d'intérêts locaux : - Importance de leurs activités dépendantes de l'usage de la ZH dans l'économie des familles - Degré de sécurité d'accès aux ressources de la mare - % moyen de couverture des besoins alimentaires avec les productions familiales, sources de financement des aliments achetés (emplois ruraux précaire, migrations urbaines, etc.)
Liste des **organisations existantes** avec brève description (type, domaine(s) d'intervention) : rôle, relations, responsabilités
Organisations communautaires : Nom du groupement, année de création/ initiative de qui ? Objectifs/vocations/ services rendus/ nombre d'adhérents/montant adhésions/ moyens en place
Caractérisation du niveau d'intérêt et de motivation des parties prenantes pour le projet
Perception de l'intérêt de développer des interventions sur ZH ? Domaines clés pour intervention
Description des barrières/contraintes éventuelles à la mise en œuvre du projet
- Y a-t-il des **personnes qui s'opposent à une gestion durable** de la ZH ? - Y a-t-il des **conflits** entre différents groupes pour l'usage, de l'eau, de la forêt des pâturages ? - Est ce que le voisinage de l'élevage et des champs de cultures pose problèmes ? - Y'a-t-il des personnes vulnérables qui seraient pénalisés par un projet de conservation de la forêt (ex. charbonniers pauvres, etc.) ? - Y a-t-il des **rivalités politiques** qui compliqueraient l'attribution des responsabilités de gestion, la décentralisation de la GRN ? Relation village, mairie, DREDD, préfet, wali ? - Comment passent les relations entre inspecteurs DREDD, gestionnaires, usagers de la ZH ?
Liste des organisations pouvant potentiellement être associées à la mise en œuvre du projet et description (+capacités, ressources, expérience) – par exemple AGLC, AGPO, Coopératives, etc.
Quels acteurs, quels groupes ou organisations (traditionnel, moderne) ont déjà l'expérience locale pour gérer les ressources communes autour de la ZH ? Démarches de restauration, de gestion ? Quel est le **réseau de compétences** (interne/externe) ?
Description de l'éventuel besoin de création de nouvelles organisations pour la mise en œuvre du projet

L'organisation existante a-t-elle des objectifs et des pratiques compatibles avec ceux du projet ? / Est-elle capable et légitime pour assumer la mise en œuvre du projet ? [OU SI PAS D'OL :] Y a-t-il eu **l'idée** ou des initiatives de gérer la ZH ou certaines ressources de la ZH ? **Qui est l'initiateur** ? **Qui faudrait-il impliquer** pour bien gérer, partager l'accès et les bénéfices de façon acceptable pour les populations voisines ?
Identification et description des projets/initiatives actuels et/ou antérieurs intervenant dans la zone et le potentiel de synergie et de valorisation de leurs acquis
Histoire des interventions sur le terrain (locales ou externe) : acteurs, objets, réalisations visibles Quelles **initiatives ont réellement été bénéfiques** pour toute ou partie de la population et pour la ZH ? Si achevées : comment trouver la trace des résultats sur le terrain ? Qu'est ce qui fonctionne ? Si en cours : réalisations en cours (site, objets, avancement, évaluation), plan d'action prévu (site, objets, avancement, opportunité). Qui sont les points focaux locaux ?
Identification des organisations pouvant avoir leur capacité renforcée par le projet
- Organisations ayant un bureau constitué et une dynamique collective / actives sur le terrain / portant des idées d'initiatives des leaders. Diagnostic organisationnel rapide des organisations potentielles : - Relever son parcours : contexte création, réalisation, mode d'accompagnement - Mesurer 1) la finalité réelle de l'organisation : pragmatisme orienté résultat OU opportunisme financier, etc. ; 2) sa représentativité sociale
Proposition d'activités pour le renforcement des capacités (technique, organisationnelle, opérationnelle, etc.) des organisations, y compris coûts, capacités techniques requises et nombre de bénéficiaires désagrégé par type
Diagnostic organisationnel rapide (suite) : 1. SWOT rapide à 4 thèmes Activités / Moyens / Gouvernance / Gestion financière 2. Partenariat existant 3. Piste de collaboration

3. Restauration/réhabilitation de la ZH (prospective)

Information à collecter
Identification du besoin de restauration/réhabilitation de la ZH et caractérisation (par exemple, superficie avec perte d'habitats, changement d'espèces etc.)
Proposition d'interventions/activités de restauration/réhabilitation, y compris coûts, capacités techniques requises et surface(s) visée(s), et description de leur potentiel d'atténuation des impacts négatifs générés par les activités anthropiques et les changements climatiques
Identification des partenaires techniques pouvant mettre en œuvre ces activités
Evaluation de la compatibilité de ces interventions avec la gestion durable des ressources naturelles et la biodiversité
Description de l'intégration de ces interventions dans un plan de gestion de la ZH et de son BV
Proposition d'indicateurs et de valeurs de référence + cible pour évaluer et suivre la mise en œuvre et l'impact des interventions de réhabilitation/restauration

4. Plan de gestion des zones humides (prospective)

Information à collecter
A quelle(s) échelle(s) la ZH est-elle aujourd'hui gérée ? Quelle est la superficie sous gestion ?
Quelles sont les limites de la zone gérée ? Villages inclus dans le périmètre ou bien dans l'organisation ? Cela correspond à quelle partie de bassin d'oued?
Quelle entité locale légitime (existant ou à construire) est envisageable en tant que gestionnaire ? Qui sont les parties prenantes locales potentielles (gestionnaires, membres, autorités, partenaires) ?
- Faire citer une entité existante et argumenter sur sa légitimité et sa capacité - Identifier le territoire et les groupes d'ayants droits qui doivent être associés pour rendre l'entité légitime
Existe-t-il **une convention locale** qui concerne la ZH ou son BV ?
Si oui, description de son processus de conception, son contenu et évaluation de sa mise en œuvre par les parties prenantes locales, Si non, estimation de l'opportunité d'en élaborer une.
Existe-t-il **un plan de gestion** de la ZH et ou de son BV ?
Si oui, description de son cadre de développement + mise en œuvre, de l'avancement de sa mise en œuvre, des contraintes etc. Si non, description du cadre dans lequel il pourrait être développé, des parties-prenantes, etc.
Identification des partenaires techniques pouvant appuyer au développement du plan de gestion, y compris coûts
Parmi les intervenants déjà présents [Cf. 2.10.]. Identifier éventuellement des partenaires pertinents encore non implantés localement ou en voie de.
Identification des besoins des services techniques de l'environnement (spécifique au) territoire administratif de la ZH, en termes de renforcement de capacité d'accompagnement des dispositifs locaux de gestion des ZH (matériel et méthode)
Perception de leur mission, Anecdote sur leurs pratiques de terrain (aménagement, surveillance, collaboration avec les AGLC, etc.), Evaluation de leur capacité d'intervention préventive ou en cas de problème (braconnage, charbonnage, feux, etc.), Forces/Faiblesses ?
Description des plans de développement sectoriels existants ou à venir pour la ZH et son BV et du niveau actuel de leur mise en œuvre.
Quels sont les changements souhaités localement relatifs à la ZH, au BV ?

Décrire l'état amélioré souhaité du point de vue des différents acteurs locaux (groupes d'intérêts, autorités), concernant le milieu naturel et les ressources, et les bénéfices tirés.
Nombre de plan de gestion à produire pour la ZH Nombre d'hectares de ZH qui seront restaurés/réhabilités au travers du plan de gestion Nombre d'hectares de ZH qui auront un gestion améliorée/renforcée au travers du plan de gestion

5. Diversification des moyens d'existence (prospective)

Information à collecter
Identification et caractérisation de l'évolution des systèmes de production avec les changements climatiques et l'accroissement des pressions anthropiques sur les ressources (voir avec partie I) et autres...
Après description des différents SP, **questions finales** : - **Qu'est ce que vous avez dû changer** dans votre manière de produire, de travailler avec les contraintes d'aujourd'hui (le climat, la sédentarisation, les migrations, etc.) ? Ce que vous ne pouvez plus faire ? Comment vous êtes-vous adaptés ? - **Ceux qui s'en sortent le mieux**, qui sont-ils, qu'ont-ils choisi de faire ? Ont-ils des facilités de s'adapter que d'autres n'ont pas ? Pourquoi ?
Proposition d'activités/interventions pour la diversification des moyens d'existence y compris coûts, capacités techniques requises et nombre de bénéficiaires désagrégé par type
Pistes d'appui-conseil souhaités par les populations, leaders locaux en matière d'AGR (existantes*, ou nouvelles) : objet, groupe, lieu, calendrier, démarche d'appui permettant une bonne appropriation locale. **pour l'existant : pistes de rectification : mode de transformation/valorisation, organisation productive, partage des bénéfices, filière.*
Evaluation de la compatibilité de ces interventions avec les changements attendus du climat et de la pression anthropique
- Pensez-vous que ces pistes d'action seront **durables face aux évolutions climatiques annoncés** qui engendrent moins de pluie, plus d'ensablement, moins de régénération végétale naturelle ? - Pensez-vous que ces actions auront un **effet significatif face à l'utilisation globale** des pâturages, les prélèvements sur la forêt, les pratiques d'utilisation de l'eau (qualitatif, quantitatif) ? - **Prend-on en compte les usagers transhumants/saisonniers** dans les mesures de gestion environnementale/de développement, de façon adapter leurs pratiques si elles s'avèrent nuisibles à la durabilité des ressources ?
Evaluation de la compatibilité de ces interventions avec la gestion durable des ressources naturelles et la biodiversité
Selon vous, est ce que [les pistes identifiées] parviendront à faciliter le renouvellement des ressources et du milieu naturel ? A quelles **conditions** ?
Proposition d'indicateurs et de valeurs de référence + cible pour évaluer et suivre la mise en œuvre et l'impact des interventions de diversification des moyens d'existence
Quel type d'appui aux AGR les améliorerait de façon durable ? - produire plus pour sécuriser l'alimentation ? (Production/productivité visée) - mieux valoriser ? (Rentabilité visée) - mieux partager les bénéfices ? (Panel de bénéficiaires attendus) - assurer le renouvellement de la ressource ? (Niveau de prélèvement raisonnable estimé)

6. Analyse genre

Information à collecter
Description de l'effort entrepris pour consulter les femmes (ou certaines femmes) et les résultats de cet effort
Avons-nous pu rencontrer des femmes ? Comment sont elles présentées (appartenance à une orga., savoir faire, etc.) ? Avons-nous pu échanger avec d'autres femmes que les leaders d'organisations/notables/commerçantes ?
Nombre d'individus consultés
Nombre de femmes consultées
Description des rôles selon le genre dans l'organisation et l'exécution des systèmes de production Description des savoir-faire des femmes en lien avec la ZH et les ressources naturelles
Enumérer les activités productives spécifiques aux femmes (collecte de PFNL, artisanat), et les séquences féminines dans les activités mixtes (élevage de maison, transformation des produits de l'élevage, de la cueillette).
Description et caractérisation de la représentation des femmes dans les processus de **gouvernance** et de gestion des ressources naturelles et de la ZH
Y'a-t-il des organisations féminines (même informelle, twiza, etc.) ? dans quels domaines ? Qui sont les leaders (famille, statuts, résidence) ? Y'a-t-il des femmes leaders pour organiser les activités productives (agriculture, cueillette) et leur valorisation (commerçantes des produits locaux) ?
Description des **besoins, contraintes et désavantages** dont les femmes font l'objet
Quels sont les préoccupations majeures des femmes ? En saison sèche ? En hivernage ?
Proposition de mesures pour assurer **une représentation équitable** des femmes dans les organes de décision et de gestion qui seront supportés par le projet et indication des valeurs de référence et cibles
Si une OGRN existe : pensez-vous que vos représentants soit en mesures de prendre en compte vos préoccupations ? Si pas d'OGRN : Pour vous représenter et gérer, qui serait à même de bien défendre vos intérêts/préoccupations ?
Proposition d'interventions/activités de **développement des savoir-faire des femmes**, y compris coûts, capacités techniques requises et nombre de bénéficiaires
- Que peut apporter le projet pour améliorer vos activités traditionnelles ? - Formation à des techniques améliorées de procès ? - Equipement ? Commercialisation ? - Accompagnement à l'organisation/gestion ?
Proposition de mesures de **renforcement des droits des femmes**, en particulier en ce qui concerne les droits de **propriétés ou d'accès à la terre/facteurs de production**
- Pour produire [précisez chaque fois l'activité], avez vous accès à la terre, aux moyens de faire la campagne, aux arbres, etc ? Quelles sont les femmes qui n'ont pas cela? Précisez... (ethnie, ancienneté, situation familiale...) - Besoins des femmes chefs de familles spécifiques ?
Proposition d'interventions/activités de **diversification des moyens d'existence** et de génération de revenus spécifiques aux femmes, y compris coûts, capacités techniques requises et nombre de bénéficiaires
Quel type d'appui aux AGR améliorerait ce qui existe aujourd'hui ? - Produire plus pour sécuriser l'alimentation ? (production/productivité visée) - Mieux valoriser ? (rentabilité visée) - Mieux partager les bénéfices ? (panel de bénéficiaires attendus)

- Assurer le renouvellement de la ressource ? (niveau de prélèvement raisonnable estimé)
Description des **risques potentiels générés par le projet sur les groupes vulnérables dont les femmes**
- Comment faire pour éviter une faible appropriation du projet ? - Y a-t-il des familles pauvres locales qui n'ont d'autres choix que de faire le charbonnage et la chasse vivrière ? Comment le projet pourrait les affecter ? - Quand on dit "il faut associer tout le monde" ? Tout le monde c'est qui ? Chaque village ? Chaque famille, même ceux qui ne sont pas notables mais sont capables de mobiliser des moyens, des travailleurs ? Chaque courant politique ? etc. - Quel genre de problème social plus sérieux pourraient causer un tel projet de restauration de la ZH ? Problème foncier (équipement/gestion en commun sur terre privée ou exclusive à un groupe...) ? - Une entente foncière pour la gestion partagée de la ZH est-elle possible ?
Proposition d'indicateurs et de valeurs de référence + cible pour évaluer et suivre la mise en œuvre et l'impact des interventions à l'attention des groupes vulnérables
- Qu'est-ce que le projet peut prétendre viser pour les populations vulnérables pour alléger leur dépendance aux activités nuisibles à la ZH : trouver des alternatives ? sécuriser d'autres activités moins nuisibles ? - Pour les activités écologiquement durables pratiquées par les populations, que faire pour mieux les valoriser : organiser l'aval d'une filière collectivement, créer un système de warrantage (forestier ou agricole) ? - A quoi pourrait on "voir" que les conditions de vie des populations les plus précaires liées à la ZH seraient améliorées ?

Appendix 6: List of participants to the national level workshop (Nouakchott - Nov 21st, 2017)

MINISTERE DE L'ENVIRONNEMENT ET DU DEVELOPPEMENT DURABLE

CELLULE DE COORDINATION DU PROGRAMME NATIONAL SUR LE CHANGEMENT CLIMATIQUE

REUNION D'ECHANGE ET D'ENRICHISSEMENT DU DOCUMENT DU PROJET "ADAPTATION ET RESILIENCE AU CHANGEMENT CLIMATIQUE DES ZONES HUMIDES CONTINENTALES" MEDD/IUCN/FEM

NOUAKCHOTT LE 21 NOV 2017

FICHE DE PRESENCE

NO	DATE	NOM ET PRENOM	INSTITUTION	E-MAIL	EMARGEMENT
1	21/11/2017	[illegible]	PNUD	[illegible]	
2	21/11/2017	[illegible] Lehlou	ANGDV/MEDD	[illegible]	
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MINISTERE DE L'ENVIRONNEMENT ET DU DEVELOPPEMENT DURABLE

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NO	DATE	NOM ET PRENOM	INSTITUTION	E-MAIL	EMARGEMENT
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