

# **Strengthening the resilience of ecosystems and populations in four regional hubs in northern Mauritania**

## **ANNEX 7**

### **STAKEHOLDER CONSULTATIONS AND ENGAGEMENT PLAN**



## Acronyms and abbreviations

Please note acronyms followed by an asterisk are constituted from terms originally in French.

AE	Accredited Entity
AGPO*	Participatory Oasis Management Association
ARE*	Multisector Regulatory Authority
CBD	Convention on Biological Diversity
CCPNCC*	Coordination Cell for the National Climate Change Programme
CCRA	Climate Change Risk Assessment
CEDAW	International Convention on the Elimination of all forms of Discrimination Against Women
CNRE*	National Water Resource Centre
CSLP*	Strategy Framework Against Poverty
CTC	Coordination and technical committee
DREDD*	Regional Delegation for Environment and Sustainable Development
EbA	Ecosystem-based adaptation
EE	Executing Entity
ENFVA*	National School of Agricultural Training and Extension
ESS	Ecosystem services
GCF	Green Climate Fund
GGW	Great Green Wall
GoM	Government of Mauritania
LDC	Least developed country
MADR*	Ministry of Agriculture and Rural Development
MAED*	Ministry of Economic Affairs and Development
MASEF*	Ministry of Social Affairs, Children and Family
ME*	Ministry of Livestock
MEDD*	Ministry of the Environment and Sustainable Development
MHA*	Ministry of Water and Sanitation
MID*	The Ministry of the Interior and Decentralisation
MUAT*	Ministry of Housing, Urbanism and Regional Planning
NAP	National Adaptation Plan
NAPA-Rim*	National Adaptation Programme of Action to Climate Change
NDC	Nationally Determined Contributions
ONSER*	National Rural Water Agency
PANE II*	National Action Plan for the Environment II
PANEDD*	National Action Plan for Environment and Sustainable Development
PAN-LCD	National Action Plan against Desertification in Mauritania
PC	Project Coordinator
PDDO*	Oasis Sustainable Development Programme
PDEDD*	Political Declaration of the Environment and Sustainable Development
PMU	Project Management Unit
PNDA*	National Agricultural Development Plan
PNDE*	National Livestock Development Plan
PSC	Personal Status Code
PSC	Project Steering Committee
SCAPP II*	National Strategy for Accelerated Growth and Shared Prosperity II
SDSR*	Development Strategy for the Rural Sector
SNADEA*	National Water and Sanitation Policy and Strategy
SNAT	Schéma National d'Aménagement du Territoire
SNEDD*	National Strategy and Plan of Action for the Environment and Sustainable Development
SNFP*	National Company of Boreholes and Wells
SNSA*	National Strategy for Food Security
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

## 1. Introduction

This document summaries the consultations and a stakeholder engagement plan in support of the Funding Proposal for the proposed project entitled '*Strengthening the resilience of ecosystems and populations in four regional hubs in northern Mauritania*'. Co-financed by the Green Climate Fund (GCF) and the Government of Mauritania (GoM), with the United Nations Environment Programme (UNEP) as the accredited entity (AE), the project aims to increase resilience to the current and projected impacts of climate change for populations living in the expanding rural-urban hubs of Aoujeft, Rachid, Tamchekett and Nema. These hubs are located along the most vulnerable strip of Mauritania (the southern border of the Sahara - the northern border of the Sahel). This will also contribute towards preventing desertification from moving further south and affecting the country's very fragile and most fertile lands<sup>1</sup>.

This Stakeholder Analysis serves to inform the development of the Stakeholder Engagement Plan and facilitate the prioritisation of engagement activities with stakeholders. The sections provided in this annex offer: i) a pre-assessment of the current policy and institutional context on climate change, environmental and economic development policies in Mauritania; ii) an overview of the relevant stakeholders identified for the design and implementation of the proposed project, as well as their role of engagement with the project; and iii) a pre-assessment of the gender context in Mauritania.

## 2. Pre-assessment of policy and institutional context

### 2.1. Legal and strategic framework

Several strategic frameworks have been developed in Mauritania that address the challenges of climate change vulnerability and desertification. These climate change, environmental and economic development policies are discussed in Table 1 and includes a broad assessment of existing gaps, how the relevant policy or framework aligns with the proposed project, as well as opportunities to bolster existing frameworks<sup>2</sup>.

**Table 1.** Overview of the Republic of Mauritania's legal and strategic framework relevant to the project<sup>3</sup>.

Instrument/policy	Summary of the description, gaps assessment and relevance to the proposed project
Climate change policies	
National Adaptation Programme of Action to Climate Change (2004)	<p>The National Adaptation Programme of Action to Climate Change (NAPA-Rim)<sup>4</sup> acknowledges the severity of climate change and the need for international support to adapt to impacts, given Mauritania's least-developed country (LDC) status. The NAPA-Rim was drafted by the former Department of the Environment, and highlights desertification and the associated consequences as the most notable impact of climate change in Mauritania. Several other impacts are also listed and include, <i>inter alia</i>, increasing water scarcity, lowered water tables, reduced fish stocks and sea-level rise in coastal areas.</p> <p>According to the NAPA-Rim, pastoralism has often been undermined as a strategy for adapting to climate variability, despite the fact that it offers many benefits. Promoting pastoralism and nomadism should, therefore, be a critical consideration in future plans that aim to improve country adaptation. Other adaptation priorities in the NAPA-Rim include: i) investing in water-saving techniques and technology; ii) restoring small dykes and wetlands; and iii) promoting integrated land management.</p> <p>The proposed project aligns with the NAPA-Rim in that both recognise that desertification is the most severe climate change impact in the country. The Policy includes the implications of desertification in different sectors, such as livestock, agriculture and oases economies. Some identified adaptation options in the Policy are also recommended in the proposed GCF project, such as stabilising dunes, strengthening nomadism, promoting oasis economies, and improving water monitoring and use. The Policy addresses the need to prioritise institutional mechanisms for nature conservation and climate change adaptation. In addition, it acknowledges that the GoM does not have the financial capacity to implement climate change-adaptation projects, identifying the need for tapping into international funding mechanisms. However, its proposed adaptation options and projects do not include land use</p>

<sup>1</sup> GCF. 2019. Concept note: Strengthening the resilience of ecosystems and populations in four regional hubs in northern Mauritania (UNEP).

<sup>2</sup> Annex 2: Feasibility Study

<sup>3</sup> Annex 2: Feasibility Study

<sup>4</sup> GoM. 2004. National Adaptation Programme of Action to Climate Change. Available at: <https://unfccc.int/resource/docs/napa/mau01e.pdf> Accessed on 27 August 2022.

	<p>planning at the regional level (only in Nouakchott) nor does the Policy address gender considerations.</p> <p>The proposed GCF project is superseded by the National Adaptation Plan (NAP), which is described below.</p>
National Adaptation Plan (NAP)	Mauritania's NAP is currently under development. The government is receiving readiness and preparatory support from the GCF to capacitate local institutions, which will aid the NAP's development. The proposed GCF project will complement the ongoing NAP efforts through its proposed activities, discussed in Section B.3 of the Funding Proposal.
National Communication on Climate Change IV (2019)	<p>The National Communication on Climate Change IV emphasises Mauritania's heightened vulnerability to climate change<sup>5</sup>. Impacts highlighted in this communication include: i) projections that water availability will decrease by 15%; ii) the expansion of the Sahara Desert toward the south of the country; and iii) desert encroachment into agricultural land. These impacts are expected to negatively affect agricultural yield and food and water security in the country.</p> <p>The proposed project will complement recommendations stipulated in the National Communications on Climate Change IV. Section B.3 of the Funding Proposal outlines proposed measures that correspond with the recommendations in the National Communications on Climate Change IV. These measures include strengthening natural resource management and governance and increasing gender inclusion.</p>
Nationally Determined Contributions (2021)	<p>The Nationally Determined Contributions (NDCs) delineate Mauritania's adaptation needs<sup>6</sup>. The impacts of climate change on water availability, agriculture and livestock are discussed in the document. It also provides an overview of the identified priority sectors for adaptation, which include nature conservation, agropastoral systems and fisheries.</p> <p>The activities proposed by the project will advance the NDCs through the implementation of sustainable livestock-breeding practices, reforestation interventions and strengthened institutional capacity, with a strong focus on improving the adaptation capacity of rural communities along the Sahara-Sahelian border. Interventions that aim to decrease the impact of desertification in these communities will contribute toward the adaptation goals stipulated in the NDC document. The climate adaptation interventions proposed by the project have been designed in line with the land-use planning, gender responsiveness, institutional requirements and financial needs described in the NDC.</p>
Environment and conservation policies	
National Action Plan against Desertification in Mauritania (2002)	<p>The Programme d'Action National de Lutte Contre la Desertification en Mauritanie 2022 (PAN-LCD) highlights the multifaceted nature of desertification. With this foundational understanding, it aims to ensure that the challenges around desertification are incorporated into a sustainable, national development plan that encompasses technical, socioeconomic, judicial and institutional facets.</p> <p>The PAN-LCD has resulted in the formulation of several sustainable development programmes and created awareness of the role that socioeconomic-development objectives play in addressing desertification. In addition, the Plan defines the regulatory and institutional frameworks to combat desertification in Mauritania, including potential internal and external funding streams. The proposed GCF project aligns with the PAN-LCD in that it also acknowledges the multifaceted nature of desertification. Similar to the recommendations in the PAN-LCD, it proposes that strategies to combat desertification be incorporated across different plans, policies and government bodies.</p> <p>Several gaps are identified in the PAN-LCD. These include the need for: i) an operational land-use planning authority, the Schéma National d'Aménagement du Territoire (SNAT), to coordinate local development plans; and ii) coordination with United Nations conventions, such as United Nations Framework Convention on Climate Change (UNFCCC) and Convention on Biological Diversity (CBD), and institutional actions to mainstream desertification. Gaps in the PAN-LCD itself include gender equity being included in planning mechanisms.</p> <p>Upon its completion, the NAP (discussed above) will supersede the PAN-LCD.</p>
Political Declaration of the Environment and	The Déclaration de Politique d'Environnement et de Développement Durable (PDEDD) is centred around addressing poverty, state transparency and the conservation of natural

<sup>5</sup> GoM. National Communication on Climate Change IV. Available at: <https://unfccc.int/documents/200088> Accessed on 30 August 2022.

<sup>6</sup> GoM. 2021. Contribution Déterminée Nationale Actualisée (CDN) 2021–2030. Available at: [https://unfccc.int/sites/default/files/NDC/2022-06/CDN-actualis%C3%A9e%202021\\_%20Mauritania.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/CDN-actualis%C3%A9e%202021_%20Mauritania.pdf) Accessed on 30 August 2022.

Sustainable Development (2011)	<p>resources<sup>7</sup>. The following national priorities are stated within the document: i) promoting sectoral reforms based on the development of human, material and financial resources; ii) establishing Good Environmental Governance (Bonne Gouvernance Environnementale), which is a framework for planning, implementing, monitoring and evaluating national interventions; iii) abiding by international conventions on climate change adaptation and biodiversity conservation; iv) promoting renewable energy; v) engaging with international, national and regional mechanisms for the research, education and dissemination of sustainable management; and vi) improving urban management. These priorities will be achieved through the reinforcement of institutional capacity in environmental management, integrated resource management and the implementation of international conventions on climate, such as the UNFCCC and the Kyoto Protocol.</p> <p>Although comprehensive, the PDEDD has several gaps, including the absence of land-use planning and gender considerations. In addition, there is no mention of financing sources for the proposed international reforms — despite the identification of ratified international convention for financing. A full review of the PDEDD will be conducted under the proposed GCF project, identifying necessary measures to integrate land use planning and gender considerations into the project design.</p> <p>The proposed GCF project aligns with PDEDD's objectives of improving institutional capacity and governance for environmental management and sustainable development. The PDEDD also includes climate change considerations in its narrative. For example, one PDEDD action is to implement international conventions, such as climate change, biodiversity and desertification. It is also acknowledged that institutional capacity needs to be strengthened to implement environmental and sustainable development goals.</p>
National Action Plan for the Environment II (2012–2016)	<p>The Plan d'Action Nationale pour l'Environnement II (PANE II) was elaborated to create a framework that supports all environmental policies<sup>8</sup>. The objective of the plan includes the development of best practices for environmental conservation and natural resource management. Climate change is recognised as a threat to livelihoods and food security, particularly in rural settings, with the mainstreaming of sustainable development and environmental affairs proposed to address this challenge.</p> <p>PANE II is subdivided into seven sub-programmes: i) environmental evaluation and regulation; ii) sustainable management of natural resources; iii) conservation, restoration and management of biodiversity; iv) prevention of extreme weather events; v) adaptation to climate change; vi) information, education and communication of environmental affairs; and vii) institutional reforms. Through PANE II, the Ministry of the Environment and Sustainable Development (MEDD, by its acronym in French) becomes an independent institution to implement environmental management practices across sectors.</p> <p>The proposed GCF project complements PANE II's objective of mainstreaming natural resource management and reinforcing institutions and governance. In addition, PANE includes a governance apparatus for environmental conservation, climate change and natural resource management. It contains information regarding the existing legislation on natural resource management, which is discussed as uncoordinated in the absence of clearly defined roles and responsibilities of relevant institutions. The conflicting framework hinders effective natural resource management and the implementation of land-use planning and environmental protection interventions.</p> <p>The proposed GCF project will not review the PANE II under Activity 1.1.1 as the Policy has been superseded by the National Strategy and Plan of Action for the Environment and Sustainable Development (SNEDD; discussed below).</p>
National Strategy and Plan of Action for the Environment and Sustainable Development (2017–2030) and National	<p>The Stratégie Nationale de l'Environnement et du Développement Durable (SNEDD) supersedes PANE II. It provides a strategic foundation for integrating environmental, climate and sustainable development goals into other sectoral policy frameworks<sup>9</sup>. The implementation of SNEDD, through the National Action Plan for Environment and Sustainable Development (PANEDD), is part of the wider national institutional framework for development policies.</p>

<sup>7</sup> GoM. 2011. Déclaration de Politique d'Environnement et de Développement Durable. Available at: <https://airesmarines.ugar.ca/27/1/DPEDDRIM.pdf> Accessed on 27 August 2022.

<sup>8</sup> GoM. 2012. Plan d'Action National pour l'Environnement 2012-2016 (PANE II). Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC146663> Accessed on 27 August 2022.

<sup>9</sup> GoM. 2017. Available at: <https://www.fao.org/faolex/results/details/es/c/LEXFAOC175844/#:~:text=Sp%C3%A9cifiement%2C%20la%20SNEDD%20vise%20%C3%A0,%C3%A9cosyst%C3%A9miques%20et%20des%20ressources%20naturelles>. Accessed on 27 August 2022.

<p>Action Plan for Environment and Sustainable Development (PANEDD).</p>	<p>SNEDD and accompanying PANEDD underpin the GoM's coordination mechanisms for monitoring environmental challenges. The initiative is divided into four strategic components: i) integrated environmental governance adapted to challenges; ii) integrated and sustainable management of natural resources and terrestrial biodiversity; iii) sustainable management of the marine and coastal environment; and iv) strengthened prevention and management of pollution and anthropogenic threats. PANEDD operationalises the necessary actions for each of these four strategies, including the relevant implementing institution, financing plan and a monitoring and evaluation plan.</p> <p>The SNEDD includes gender considerations in the proposed institutional reforms for integrated environmental management and suggests women-only positions in the organisations involved in the implementation of the PANEDD. It also includes measures to improve environmental governance in the context of climate change and baseline challenges, including partnerships between institutions, financing streams, and institutional reform. Financing mechanisms for the implementation of various actions are considered.</p> <p>The proposed GCF project aligns with the SNEDD and PANEDD through shared goals of strengthening land-use management and institutional governance, both of which address climate change impacts. Notably, climate change is mainstreamed into the SNEDD plan, with desertification considered a priority. In addition, local and decentralised natural resource management is recognised within land-use planning considerations. These considerations are not, however, included in the PANEDD, with land-use planning activities largely absent. Under Activity 1.1.2, the proposed GCF project will complement the SNEDD with a review to advance land-use planning considerations.</p>
<p>National Biodiversity Strategy and Plan of Action (2011–2020)</p>	<p>The Strategie et Plan d'Action National de la Biodiversité<sup>10</sup> is aligned with the Convention on Biological Diversity. The strategy's primary goals include the conservation of wetlands, coastal ecosystems and forests through the long-term maintenance of ecosystem functions. These functions include their capacity to adapt to environmental change, particularly desertification and climate change. The strategy describes six major focal areas: i) creating the desire to act on behalf of biodiversity; ii) preserving life and its ability to evolve; iii) investing in biodiversity conservation; iv) assuring the sustainable and equitable use of biodiversity; v) assuring policy coherence and the effectiveness of actions; and vi) developing, sharing and using knowledge<sup>11</sup>. National targets and accompanying actions, indicators and implementation costs have been established to support these goals.</p> <p>Within the abovementioned framework, the strategy includes measures to ensure the sustainable management of rangelands and reduced pressure on pastoral and forest resources. In addition to ensuring the structural integrity of ecosystems, this strategy contributes to Mauritania's poverty-reduction efforts and also explicitly addresses the inclusion of women and pastoralists in biodiversity management and governance participation.</p> <p>Several gaps are highlighted in the strategy. These include limited coordination between multiple agencies involved in biodiversity conservation and an outdated institutional and administrative framework for coordinating biodiversity actions. In addition, the inclusion of women and pastoralists in biodiversity management is limited to only one of the strategy's activities. Climate change considerations, monitoring mechanisms and a detailed overview of financing sources are also absent from the strategy. Under Activity 1.1.1, the proposed GCF project will present a review of the strategy to include climate change and gender considerations and further expand financing sources to strengthen the National Biodiversity Strategy and Plan of Action.</p> <p>The proposed GCF project aligns with the National Biodiversity Strategy through the promotion of nature-based solutions that support biodiversity conservation, alternative natural resource-based sustainable livelihoods and sustainable livestock practices. Similar to the proposed project, the strategy recommends addressing desertification to bolster biodiversity. A national land-use plan (SNAT) is also suggested to address the challenge of rural migration to urban centres.</p>

<sup>10</sup> GoM. 2011. Stratégie et Plan D'action National de la Biodiversité 2011-2020. Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC160741/> Accessed on 27 August 2022.

<sup>11</sup> GoM. 2014. Strategie national de conservation des zones humides. Available at: <https://rim-rural.org/2019/10/01/snczhstrategie-nationale-de-conservation-des-zones-humides-en-mauritanie/>. Accessed on 27 August 2022.



National Strategy for Wetland Conservation (2014)	<p>The Strategie Nationale de Conservation des Zones Humides highlights the urgency of wetland conservation in Mauritania, with emphasis on their value, uniqueness and fragility<sup>12</sup>. The goal of the strategy is to outline the approach to conservation restoration and sustainable management of wetland ecosystems. Locally, wetland systems are referred to as, <i>inter alia</i>, tamourts, gâats, oueds, tichillits, oases and sebkhas (Section 1.5.3 of Annex 2: Feasibility Study) and include perennial, semipermanent or temporary water bodies.</p> <p>Several principles for wetland management are described in the strategy and include: i) participatory management; ii) transparency, equity and social justice; iii) shared responsibility for the environment; iv) decentralisation of decision-making; v) precautionary and preventative measures; and vi) the coordination of synergies. Its objectives are to: i) implement a wetland governance system; ii) implement a legal framework specific to wetlands; iii) preserve and restore wetlands; iv) regulate access to wetland resources; v) maintain and improve the state of wetlands; vi) improve watershed management; vii) develop sustainable agricultural and animal husbandry practices in wetlands; viii) implement the strategy of wetland management; ix) strengthen institutional and human capacity; x) strengthen technical and scientific capacity; xi) promote sustainable exploration practices of natural resources; xii) develop income-generating activities compatible with the sustainable management of wetlands; and xiii) implement a financing mechanism.</p> <p>The proposed project aligns with the Wetland Conservation National Strategy in its approach to strengthening community management of natural resources, including wetlands. The strategy establishes governance principles for the wetland conservation plan, such as decentralised decision-making, and aims to implement a governance system for wetland conservation and reinforces existing institutional capacities. It also incorporates an overview of national and international financing sources, although the specific amounts required to operationalise interventions are not disclosed.</p> <p>Several gaps are present in the National Strategy for Wetland Conservation. First, good wetland management is described as a suitable method for preventing and addressing the challenge of desertification. However, the strategy only refers to climate change projects and policies in Mauritania without including climate change scenarios in its design. Moreover, the strategy does not disclose land-use planning activities for wetland conservation under the action plan despite being informed by existing land-use policies. Finally, the strategy does not include gender considerations in its plans. Given these gaps, the proposed GCF project will review the National Strategy of Wetland Conservation to include climate change, gender and land-use planning considerations under Activity 1.1.1.</p>
Great Green Wall Implementation Strategy and Plan of Action (2009)	<p>Albeit not a national policy, Mauritania is included in the Great Green Wall (GGW) Implementation Strategy and Plan of Action. The GGW is a project implemented across 22 countries in the Sahel that aims to regenerate land along the southern and northern border of the Sahara Desert, where annual rainfall is below 400 mm. In particular, the GGW strengthens the implementation of national action plans to address desertification, targeting sustainable development and poverty reduction in the desert margin south of the Sahara. The MEDD is responsible for the implementation of the GGW in Mauritania. These activities are expected to: i) help slow soil erosion; ii) restructure degraded soil; iii) revive, develop and diversify agriculture and stock breeding; iv) restore biodiversity; v) increase forest coverage; vi) control water resources; and vii) reverse rural migration. Over 550 ha have been seeded and 225 ha of dunes have been fixed under the project<sup>13</sup>.</p> <p>The proposed GCF project is aligned with the Great Green Wall interventions of dune fixation and reforestation and will advance its efforts through the activities proposed for implementation in the four regional hubs.</p>
Economic development and livelihood policies	
National Plan for Rural Women (2009–2012)	<p>The Plan d'Action National pour la Femme Rural is spearheaded by the Ministry of Social Affairs, Childhood and Family (Ministère des Affaires Sociales, de l'Enfance et de la Famille)<sup>14</sup>. This National Plan forms part of the long-term plan to address poverty in the country, deriving from the Strategy Framework Against Poverty (CSLP). Within this plan, it is recognised that women experience worse socioeconomic conditions than men. These disparities include susceptibility to poverty, abandonment, insufficient access to basic</p>

<sup>12</sup> GoM. 2014. Strategie Nationale de Conservation des Zones Humides. Available at: <https://www.fao.org/faolex/results/details/en/c/LEXFAOC177461/#:~:text=II%20s'agit%20pour%20la,les%20zones%20humides%2C%20soutenir%20la> Accessed on 27 August 2022.

<sup>13</sup> MEDD website. Available at: <http://www.environnement.gov.mr/fr/index.php/features/le-medd-en-chiffres>. Accessed on 29 August 2022.

<sup>14</sup> GoM. 2008. Plan d'Action pour la Femme Rural. Available at: <https://www.ilo.org/dyn/natlex/docs/MONOGRAPH/96687/114335/F1693895911/MRT-96687.pdf> Accessed on 27 August 2022.

	<p>services, exclusion from development plans, and the deprivation of political, economic and social rights.</p> <p>The National Plan for Rural Women has the following six primary objectives: i) promoting women's rights through mass communication and popularisation; ii) improving rural women's health; iii) strengthening women's access to education; iv) developing infrastructure; v) promoting the employment of women through, <i>inter alia</i>, professional training and credit access; and vi) strengthening the institutional capacity of the institutions responsible for rural women.</p> <p>Similar to the plan's inclusion of women in rural development, the proposed GCF project incorporates gender-responsive activities in its design. One of the objectives of the Plan is to strengthen institutional capacity, including a coordination and monitoring plan for rural women, a legislative review, the creation of a National Centre of Rural Women Studies, the institutionalisation of district-level councils for gender-related challenges, and the support of organisations for rural women. The plan also includes national financing sources.</p> <p>The plan is limited in that it does not include climate change or land-use planning considerations in its design, despite the presence of proposed reforestation interventions. The Plan is also relatively outdated.</p> <p>The proposed GCF project will offer a review to update the rural women policy for gender equality development in Mauritania and include climate change considerations under Activity 1.1.1.</p>
Strategic Framework Against Poverty III (2011–2015)	<p>The Cadre Stratégique de Lutte contre la Pauvreté III (CSLP III) directs poverty-reducing policy towards interdependent and decentralised sectorial policies to spur economic growth<sup>15</sup>. The CSLP III instils country ownership in addressing poverty through national institutions and processes. It is structured around four strategic pillars: i) macroeconomic stabilisation; ii) the inclusion of the poorest in economic growth; iii) human capital development and access to essential services; and iv) governance improvements and institutional capacity strengthening. This Framework was superseded by the National Strategy for Accelerated Growth and Shared Prosperity II (SCAPP II), described below.</p>
National Accelerated Growth and Shared Prosperity Strategy II (2016–2030)	<p>The Stratégie Nationale de Croissance Accélérée et de Prospérité Partagée II (SCAPP II) is a national development plan aligned with the 2030 Agenda for Sustainable Development<sup>16</sup>. SCAPP II is composed of three axes. The first axis promotes strong, durable and inclusive economic growth through economic diversification and transformation, developing the infrastructure that supports economic growth and a competitive private sector. The second axis addresses human capital development by increasing access to basic social services, such as quality education and professional training, health and nutrition, and employment. The third axis is the reinforcement of governance across all dimensions. SCAPP II recognises the dual importance of ecosystem conservation and restoration to support Mauritania's development and capacity to adapt to climate change.</p> <p>The SCAPP's third objective is to strengthen all governance systems appropriate to economic development and growth. It also includes cost implications of the suggested programmes and quantifies the necessary co-financing amounts, but not financing partners.</p> <p>The proposed GCF project recommends an ecosystem-based approach (EbA) to address climate change adaptation. This approach is supported by the strategy, which describes EbA as critical in strengthening the country's resilience to climate change. Climate change considerations also underpin the strategy's strategic plan, which translates into climate-resilience elements for each sectoral objective. In addition, the strategy includes land-use planning to strengthen and solidify decentralisation, proposing a regional approach. Gender considerations are integrated into the SCAPP II, which includes gender-disaggregated indicators in its diagnostic section and gender objectives in its vision section. The strategy also addresses gender inclusion under two of its directive sub-programmes, namely: i) improving the resilience of the most vulnerable groups; and ii) improving women's citizen participation, which encompasses national, regional and community-level governance structures.</p>

<sup>15</sup> GoM. 2011. Cadre Stratégique de Lutte contre la Pauvreté 2011-2015. <https://www.fao.org/faolex/results/details/en/c/LEXFAOC145913/#:~:text=S'agissant%20de%20la%20r%C3%A9duction,p%C3%AAche%20artisanale%20c%C3%B4ti%C3%A8re%20et%20continentale>. Accessed on 27 August 2022.

<sup>16</sup> GoM. 2016. Available at: <https://www.fao.org/faolex/results/details/fr/c/LEXFAOC190616/#:~:text=La%20Strat%C3%A9gie%20nationale%20de%20croissance,d%20soutien%20%C3%A0%20la%20croissance%2C> Accessed on 27 August 2022.



<p>Development Strategy for the Rural Sector, Horizon 2025 (2012)</p>	<p>The Stratégie de Développement du Secteur Rural (SDSR)<sup>17</sup> was developed together with SCAPP II. It establishes the framework for the development of agropastoralism in Mauritania. The SDSR aims to: i) implement infrastructures adapted to rural settings; ii) foster innovation and development through research, education and professional training and the inclusion of actors in the value chain; iii) ensure sufficient financing adapted to the country's context; and iv) support commercial services by strengthening the appropriate government departments. The strategy further aims to promote the inclusion of the youth and women in rural economies. It identifies the need to create public-private partnerships and foster the conditions to attract investment, and also delineates the need to develop and implement the Law for Agropastoral Orientation. The National Agricultural Development Plan offers an actionable plan for the SDSR.</p> <p>The proposed project and SDSR's objectives are aligned in that both aim to develop agriculture and pastoralism through a natural resource-management approach. Regarding rural development governance, the strategy recognises the importance of participatory and co-management approaches to natural resource management and planning. It also aims to adapt the institutional and judicial framework to enhance rural development further. The SDSR recognises the limited financial contribution of the banking system to the rural and agricultural sectors in its diagnosis. It further details the financing needs for each sectoral Policy objective (livestock, agriculture, rural development, natural resource management and institutional framework strengthening).</p> <p>The SDSR acknowledges the uncertainty of climate change effects and impacts and Mauritania's exacerbated vulnerability to climate change. However, it does not include climate-resilience objectives or results, nor does it describe the implication of desertification on rural development. Moreover, the SDSR does not mention the stark difference between arid landscapes and the Senegal River Valley in the logical framework's objectives and expected results. In addition, the strategy does not have any land-use planning objectives or outcomes. The proposed GCF project will review the SDSR to include climate change and regional considerations under Activity 1.1.1.</p>
<p>National Agricultural Development Plan (2015–2025)</p>	<p>The Plan National de Développement Agricole (PNDA)<sup>18</sup> follows the 2012 SDSR and the Law of Agropastoral Orientation (Loi d'Orientation Agropastoral). It is aligned with CSLP and the National Strategy for Food Security (Stratégie Nationale de Sécurité Alimentaire, SNSA). The goals of the PNDA are to: i) promote the intensification and diversification of agricultural products to meet national needs; ii) promote agricultural competitiveness; iii) promote the sustainable and participatory management of natural resources; and iv) increase the operationalisation of the structures that support the agricultural sector. Its action points are structured around local development, natural resource management, and adaptation of the institutional and judicial framework and its supporting structures, namely infrastructure, research, rural councils and financing rural-sector development.</p> <p>The proposed GCF project's approach to local development, natural resource management and institutional strengthening aligns with the PNDA, which is underpinned by climate considerations. For example, climate resilience forms a critical element of the PNDA's first objective, which aims to promote climate-resilient rural and peri-urban economies. Desertification is also acknowledged as a considerable challenge. The PNDA also includes a proposal to create an environmental hazards fund for rainfed agricultural producers. This fund will be used to support food security in vulnerable communities. The absence of long-term climate models does, however, create a gap in this component.</p> <p>The PNDA is informed by the existing land-use planning framework and considers different objectives for oases, and arid and irrigated agricultural zones. Its sub-programme 3.1 includes directorial land access and redistribution plans to improve agricultural land use, protection and rehabilitation. Women's employment forms one of the PNDA's pillars, and women's associations are included in the stakeholder list of the PNDA's steering committee. Gender considerations also appear to be incorporated in the PNDA's action plan's objectives.</p> <p>The PNDA includes the institutional strengthening of i) agricultural support systems provided by the Ministry of Agriculture, <i>inter alia</i>, research and development, extension services, training, and of ii) producers' associations and organisations. In addition, it presents the costs associated with the proposed programmes and potential financing partners, including its</p>

<sup>17</sup> GoM. 2013. Stratégie de Développement du Secteur Rural (SDSR) Available at: <https://rim-rural.org/2021/02/16/strategie-de-developpement-du-secteur-rural-sdsr-horizon-2025/> Accessed on 27 August 2022.

<sup>18</sup> GoM. 2015. Plan National de Développement Agricole. Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC175842/> Accessed on 27 August 2022.

	alignment with ongoing, internationally funded projects. Under Activity 1.1.1, the proposed GCF will review the PNDA and its integration with the other policies, <i>inter alia</i> , the SDSR, the SNEDD or SNADEA (discussed below).
National Water and Sanitation Policy and Strategy (2016–2030)	<p>The objective of the Stratégie Nationale pour un Accès Durable à l'Eau et l'Assainissement (SNADEA)<sup>19</sup> contributes to Mauritania's sustainable development framework, recognising the political priority of the water sector and its strategic importance to the success of other sectors, such as agricultural development. It recommends appropriate solutions to water-related problems to prevent water scarcity from becoming a limiting factor to economic and social development. The SNADEA is based on an assessment of the country's water inventory. Its strategy is divided into five themes: i) extending the knowledge on monitoring and protecting water resources; ii) improving access to drinking water; iii) improving access to water for agriculture and livestock; iv) improving access to sanitation and hygiene; and v) improving governance of the water sector. The SNADEA further breaks down each theme into recommended programmes and projects, including the appropriate executing agency, institutional partners, project components and outcomes, indicators and implementation budgets. The sectoral objectives in the SNADEA 2016–2030 are incorporated into the SCAPP II, introduced above.</p> <p>The proposed GCF project aligns with the Policy's objective of expanding knowledge on, monitoring and protecting water resources. The SNADEA recognises the impacts of climate change on water availability and use. It also incorporates climate change scenarios and their implications on rainfall patterns and includes climate resilience in its programme's objective.</p> <p>Despite the acknowledgement of climate change impacts, desertification isn't distinctly mentioned in the strategy. In addition to climate change considerations, the SNADEA's fifth theme focuses on strengthening the water and sanitation sector's governance apparatus and identifies the institutional partners necessary for implementing the proposed programmes. The SNADEA's strategy includes foreseen costs for programme implementation and potential financing sources. However, while the strategy acknowledges the role of the water and sanitation sector in addressing women's vulnerability, it does not detail any gender-specific objectives or gender-responsive activities. The SNADEA is also absent of land-use planning considerations. Under Activity 1.1.1, the proposed GCF project will review the SNADEA to integrate water cycles into land-use planning for sustainable water management and gender considerations.</p>
National Livestock Development Plan (2018–2025)	<p>The Plan National de Développement d'Élevage (PNDE) is structured around five pillars: i) supporting and securing traditional pastoral livelihoods, ii) developing livestock breeds for productivity and competitiveness; iii) improving animal health care; iv) strengthening research and development capacity; and v) strengthening the institutional framework and capacity<sup>20</sup>. Each pillar is supported by programme and sub-programme guidelines. For example, the development of a sustainable management system for water resources. The PNDE is to be enacted by a Steering Committee composed of different actors, representatives of the livestock sector and relevant government agencies. The Steering Committee is also responsible for the implementation of monitoring and evaluation.</p> <p>The proposed GCF project's approach to traditional pastoral livelihoods is aligned with the PNDE's goal of developing the livestock sector. The PNDE acknowledges the impacts of climate change on the livestock sector but does not explicitly use climate change scenarios to inform it. It does, however, include an assessment of climate change impacts on the livestock sector. Desertification is addressed in the PNDE as a climate change impact, while pastoralism is recognised as an adaptive strategy that should be reinforced. The PNDE also aims to strengthen governance and institutions under its fifth pillar and includes cost estimates and co-financing needs for each proposed programme.</p> <p>The PNDE incorporates land-use planning considerations in its approach to natural resource management as a condition for strengthening agropastoral livelihoods. However, it does anticipate land-use planning specific activities or objectives. The PNDE also includes gender-specific objectives and activities relating to employment and livelihoods. Despite these gender-specific activities, other activities in the Plan do not have gender considerations clarified. Given the seeming policy gaps, the proposed GCF project will review the PNDE to include gender and land-use planning considerations under Activity 1.1.1.</p>

<sup>19</sup> GoM. 2016. Stratégie Nationale pour un Accès Durable à l'Eau et l'Assainissement. Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC190613/> Accessed on 27 August 2022.

<sup>20</sup> GoM. 2017. Plan National de Développement d'Élevage. Available at: <https://www.fao.org/faolex/results/details/en/c/LEXFAOC190618/> Accessed on 27 August 2022.

## 2.2. Institutional framework

The Islamic Republic of Mauritania has been a sovereign state since 1960; its first democratic presidential election was held in 2007. The executive branch of the government comprises the president, elected every five years in an absolute majority vote; a prime minister, appointed by the president; and a cabinet of nominated ministers. The legislative branch comprises the National Assembly, made up of 157 seats elected every five years (there was previously a Senate, but it was abolished after a constitutional referendum in 2017). The government is made up of traditional ministries, special agencies and parastatal companies. The institutions relevant to this project are described below and further detail is provided in Annex 2 of the Funding Proposal<sup>21</sup>.

### 2.2.1. Ministry of Environment and Sustainable Development

The Ministry of Environment and Sustainable Development (Ministère de l'Environnement et du Développement Durable, MEDD) steers climate-change and sustainable-development policies in Mauritania. It is responsible for developing and implementing the National Sustainable Development Plan (SNEDD), implementing the National Environmental Action Plan (PANE II), developing operational plans and governing and mobilising financial and material resources for programme implementation. The MEDD has developed sector-specific plans and programmes for desertification and climate change, biodiversity, wetland conservation and coastal ordinance. The MEDD acts as the country's focal point for the UNFCCC. Within the MEDD, the Coordination Cell for the National Climate Change Programme (Cellule de Coordination du Programme National sur le Changement Climatique, CCPNCC) was established to coordinate, implement and manage the reporting of climate-change programmes in the country, for example, the National Communications. The MEDD and the CCPNCC consult directly with different ministries and departments to advance such programmes.

The MEDD is comprised of five technical directorates:

- Directorate of Planning, Coordination and Statistics;
- Directorate of Regulations and Multilateral Agreements;
- Directorate of Evaluation and Environmental Control;
- Directorate of Protection and Restoration of Species and Landscapes;
- Directorate of Climate and Green Economy; and
- Directorate of Administrative and Financial Affairs.

### 2.2.2 Ministry of Water and Sanitation

The Ministry of Water and Sanitation (Ministère de l'Hydraulique et de l'Assainissement, MHA) is responsible for the political and technical supervision of several public institutions, including the National Company of Boreholes and Wells (Société Nationale des Forages et Puits, SNFP), the National Rural Water Agency (Office National des Services d'Eau en Milieu Rural, ONSER) and the National Water Resource Centre (Centre National des Ressources en Eau, CNRE).

The SNFP was established with staff and equipment from MHA's Water directorate and is responsible for borehole and well construction<sup>22</sup>, as well as the underpinning hydrogeological and geophysical studies.

ONSER is a government agency that controls about half the country's rural piped-water systems, managing operations, maintenance or, in some areas, subcontracting that management to third parties. The systems under ONSER's direct operation have had sub-optimal outcomes for multiple reasons. One reason for this is that water tariffs for rural areas have not been updated since 2002, leading to a disparity between past and current water prices and creating challenges for budgeting and planning. ONSER also lacks a proper asset-management system, or system-adequate management and monitoring tools, structured objectives, planning or budgeting<sup>23</sup>. In addition, the ONSER typically responds to day-to-day operations and maintenance needs on an ad-hoc basis. However, there are a few cases of subcontracted rural water networks under the oversight of the Multisector Regulatory Authority (Autorité de Régulation, ARE), which have shown positive management results<sup>24</sup>.

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<sup>21</sup> Annex 2: Feasibility Study

<sup>22</sup> AMCOW. 2010. Water supply and sanitation in Mauritania: Turning finance into services for 2015 and beyond.

<sup>23</sup> WB. 2020. Project appraisal for the water and sanitation sectoral project in the Islamic Republic of Mauritania. Report No PAD3377

<sup>24</sup> WB. 2020. Project appraisal for the water and sanitation sectoral project in the Islamic Republic of Mauritania. Report No PAD3377.

CNRE is responsible for the development and monitoring of water resources nationwide. However, it has been unable to fulfil its mandate because of limited financial and technical resources. Its operational budget decreased by almost 60% in 2005–2016, undermining its operational capacity<sup>25</sup>. The agency is funded by budget subsidies, with some additional revenue coming from fees for water abstraction and borehole-siting services. As a result of its limited resources, the CNRE is unable to collect groundwater data and cannot regularly update its databases to disseminate information.

The MHA is comprised of four directorates:

- Hydraulics;
- Hydrology and dams;
- Sanitation; and
- Administrative and financial affairs.

### 2.2.3 Ministry of Agriculture and Rural Development

The Ministry of Agriculture and Rural Development (Ministère de l'Agriculture et du Développement Rural, MADR) designs, executes, monitors and evaluates government policies related to agricultural and rural development. The department is made up of three field officers, six technical advisors, an internal inspection cell, a land property cell, a communications cell and the Minister's secretary. It offers technical supervision to the following institutions: the National Centre for Agronomic Research and Agricultural Development (Centre Nationale de Recherche Agronomique et de Développement Agricole, CNRADA); the National School of Agricultural Training and Extension (École Nationale de Formation et de Vulgarisation Agricole, ENFVA); the National Centre for Locust Control (Centre Nationale de Lutte Anticridienne, CNLA); the M'Pourié Farm; the National Company for Rural Development (Société National pour le Développement Rural, SONADER), which provides extension and advisory services primarily in irrigated agriculture areas; the National Company for Agricultural Development and Works (Société National des Aménagements Agricoles et Travaux, SNAAT); and the National Company for Sugar and Derivatives (Compagnie Mauritanienne de Sucre et Dérivées, COMASUD).

### 2.2.4 Ministry of Livestock

The Ministry of Livestock (Ministère d'Élevage, ME) is responsible for the conception, execution, monitoring and evaluation of governmental policies on livestock development, including programmes, legislation and regulations<sup>26</sup>. The ministry is also the technical supervisor of the following organisations: the National Office of Research and Development of Livestock and Pastoralism (Office National de Recherches et de Développement de l'Élevage et du Pastoralisme, ONARDEP); the Mauritanian Company of Livestock Products (Société Mauritanienne des Produits d'Élevage, MPE); the Mauritanian Company of Dairy Products (Société Mauritanienne de Produits Laitiers, SMPL); and the Nouakchott Abattoir Company (Société des Abattoirs de Nouakchott, SAN).

The ME is comprised of a cabinet, a secretariat and four technical directorates:

- Directorate of Strategy, Cooperation and Monitoring and Evaluation;
- Directorate of Veterinarian Services;
- Directorate of Animal Breeds Development; and
- Directorate of Administrative and Financial Affairs.

### 2.2.5 Ministry of Social Affairs, Children and Family

The Ministry of Social Affairs, Children and Family (Ministère des Affaires Sociales, de l'Enfance et de la Famille, MASEF) ensures social protection of vulnerable groups, including women and minors<sup>27</sup>. It oversees social-protection programmes such as social assistance through unconditional cash transfers and health subsidies. The institutional body is also responsible for developing social-protection policies, programme design and implementation. This includes developing and implementing a National Social Protection Policy, developing legislation on women's and children's rights, expanding educational and care facilities for young children,

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<sup>25</sup> WB. 2020. Project appraisal for the water and sanitation sectoral project in the Islamic Republic of Mauritania. Report No PAD3377.

<sup>26</sup> Government of Mauritania (GoM). 2021. Journal officiel de la République Islamique de Mauritanie. Available at: <https://www.msgg.gov.mr/sites/default/files/2021-10/J.O.%201491F%20DU%2015.08.2021.pdf>. Accessed on 25 July 25, 2022.

<sup>27</sup> MASEF website. Available at: <https://www.masef.gov.mr/>. Accessed on 25 July 2022.

supervising programme quality and teacher training, implementing women-led programmes for poor families, promoting family stability through family education and parenting programmes, designing and implementing a national gender strategy, ensuring gender equity is considered in national development strategy, promoting women's entrepreneurship, developing women's microfinance and promoting women's legal status and their inclusion in decision-making and their contribution to overall country development.

The MASEF is comprised of five technical and three operational directorates:

- Directorate of Social Work and National Solidarity;
- Directorate of Disabilities;
- Directorate of Family, Women's Promotion and Gender;
- Directorate of Childhood;
- Directorate of Studies, Cooperation and Monitoring;
- Directorate of Financial Affairs;
- Directorate of Information; and
- Directorate of Human Resources.

#### 2.2.6 Ministry of Economic Affairs and Development

The Ministry of Economic Affairs and Development (Ministère des Affaires Economiques et du Developpement, MAED) is responsible for designing, coordinating, implementing and monitoring the government's economic and social policy, including financing agreements and relationships with development partners and international financial institutions<sup>28</sup>. The ministry contributes to the development and oversight of international policies and strategies for the region, aligning them with the existing national inequality and poverty reduction. The ministry also formulates public-investment and private-sector development programmes. Together with the Ministry of Finance, the MAED contributes to the implementation of general and sectoral policies and the reformulation of the parapublic sector. In addition, the MAED supervises the National Agency of Statistics and Demographic and Economic Analysis (Agence Nationale de la Statistique et de l'Analyse Démographique et Économique, ANSADE) and the Investment Promotion Agency (Agence de Promotion des Investissements en Mauritanie, APIM).

The MAED is comprised of the cabinet, the secretariat, and five technical directorates, namely the:

- Directorate for Development Strategies and Policies (Direction Générale des Stratégies et Politiques de Développement, DGSP);
- Directorate for Financing and Economic Cooperation (Direction Générale des Financement et de la Coopération Economique, DGFCE);
- Directorate for Public-Private Partnerships (Direction Générale des Partenariats Public-Privé, DGPPP);
- Directorate of Monitoring, Evaluation and Reforms (Direction Générale de l'Evaluation, du Suivi et des Réformes, DGESR); and
- Directorate of Administration and Finances (Direction des Affaires Administratives et Financières, DAAF).

#### 2.2.7 Ministry of Housing, Urbanism and Regional Planning

The Ministère de l'Habitat, de l'Urbanisme et de l'Aménagement du Territoire (MUAT) is structured around four programmatic areas: i) urban planning and development, including equitable access to property; ii) regional development and land reform; iii) public buildings and equipment; and iv) governance, monitoring and evaluation.

The MUAT is comprised of four technical departments:

- regional works and land reform;
- public buildings and equipment;
- housing and urbanism studies; and
- programmes and cooperation.

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<sup>28</sup> GoM. 2021. Décret 028-2021. Available at: <https://www.economie.gov.mr/IMG/pdf/organigramme2021-2.pdf>. Accessed on 25 July 2022.

## 2.2.8 Ministry of Interior and Decentralization

**Table 2.** Overview of identified stakeholders for the project<sup>29,30</sup>.

Stakeholder	Relevant stakeholder interests	Engagement during project implementation
Government of Mauritania (GoM) and parastatals		
The National Assembly	<ul style="list-style-type: none"> <li>Environmental challenges and climate change</li> <li>Environmental laws and related policies to be implemented</li> </ul>	The National Assembly is involved in monitoring government action and the Commission for Economic Affairs and the Environment — a division of the National Assembly — manages climate change-related matters. At the highest level, the performance of all government stakeholders involved in the project will be overseen by the National Assembly.
The Economic, Social and Environmental Council (EESC)	<ul style="list-style-type: none"> <li>Member of the Union of Economic and Social Councils and Similar Institutions of Africa (UCESA) Working Group on Climate Change.</li> <li>Monitors and recommends economic or environmental adaptations made necessary by new techniques.</li> </ul>	Representatives from this stakeholder group will be invited to provide recommendations to the MEDD on economic and environmental adaptations needed to address climate vulnerabilities in Mauritania.
Ministry of Environment and Sustainable Development (MEDD)	<ul style="list-style-type: none"> <li>Sustainable management of natural resources</li> <li>Environmental protection</li> <li>Restoring degraded ecosystems</li> <li>Enhancing climate resilience and disaster risk reduction</li> <li>Combatting desertification</li> <li>Promoting integrated coastal management</li> <li>Addressing the erosion of biodiversity and pollution</li> </ul>	This stakeholder group will support project implementation as it guides the climate change and sustainable development policies in Mauritania. This stakeholder group will be acting as the Executing Entity and as such will be incorporated in the majority of the project Outputs but will have a direct involvement in Output 1.1.
Regional Delegation for Environment and Sustainable Development (DREDD)	<ul style="list-style-type: none"> <li>Guide and coordinate the MEDD's interventions at provincial level.</li> <li>Responsible for ensuring that the MEDD's interventions are aligned with existing environmental policies, strategies, and plans.</li> </ul>	This stakeholder group will assist with overall project implementation and will be instrumental in accomplishing Output 1.1.
Ministry of Rural Development (MDR)	<ul style="list-style-type: none"> <li>Interests concerned with the development, implementation</li> </ul>	The MDR will provide technical advice pertaining to rural matters and facilitate

<sup>29</sup> Annex 2: Feasibility Study

<sup>30</sup> MEDD. 2022. NAP: Study for institutional capacity building of stakeholders in the NAP process. Available at: [https://www.dropbox.com/scl/fi/0yiq1d9se04n6m9s7mue/1.1.2-1.1.3-1.2.1\\_Draft-report\\_Stakeholder-mapping-capacity-assessment-engagement-strategy-and-roadmap\\_June-2022.docx?dl=0&rkey=t23a5o8nl7cpeu5g9r3xd0app](https://www.dropbox.com/scl/fi/0yiq1d9se04n6m9s7mue/1.1.2-1.1.3-1.2.1_Draft-report_Stakeholder-mapping-capacity-assessment-engagement-strategy-and-roadmap_June-2022.docx?dl=0&rkey=t23a5o8nl7cpeu5g9r3xd0app)



	and evaluation of the Government's rural development plans and policies.	sustainable interventions aimed at improving production and productivity of local communities. They will also provide support (together with other relevant government departments and national agencies) for policy development that is directed towards rural locales.
Ministry of Hydraulics and Sanitation	<ul style="list-style-type: none"> <li>• Protection of water resources</li> <li>• Integrated management of water resources</li> <li>• Monitoring and controlling water-related challenges, such as the establishment and operation of drinking water protection and transport and distribution works.</li> <li>• Sanitation</li> </ul>	<p>The Mauritania NAP document notes the following: 'The Development Strategy of the Water and Sanitation Sector does not account for the vulnerability of the water sector to climate change and most water sector infrastructure is not resilient to the effects of climate change.'</p> <p>To address this challenge, the Ministry of Hydraulics and Sanitation will be engaged when implementing Output 2.2. of the proposed GCF project, to inform the design of effective water management strategies and facilitate government investment in supply- and demand-side water resources management.</p>
The Department of Agriculture	<ul style="list-style-type: none"> <li>• Interests concerned with the development, implementation and evaluation of the Government's agricultural development plans and policies.</li> </ul>	This department is already responsible for several state-financed, short-term adaptation programs; therefore, representatives have extensive technical and institutional knowledge. Accordingly, the Department of Agriculture will play a supportive role during the implementation of several project activities — particularly those related to knowledge-management and the implementation of agricultural-based activities under Outputs 2.1. and 2.2.
Ministry of Livestock	<ul style="list-style-type: none"> <li>• Interests concerned with the development, implementation and evaluation of the Government's livestock development plans and policies.</li> </ul>	This Ministry will supply technical advice and support to facilitate sustainable interventions aimed at improving production and productivity of local communities. They will also support (together with other relevant government departments and national agencies) livestock development policies and plans. Moreover, they will assist with the coordination and cooperation of international and inter-state organisation relations in the area of livestock. Overall, they will engage with several project Outputs, particularly in 2.1. and 2.2.
Ministry of Social Affairs, Children and Family	<ul style="list-style-type: none"> <li>• Protection of vulnerable groups (including women and minors)</li> <li>• Designing and implementing social-protection policies and programmes</li> <li>• The rights of women and children</li> </ul>	This Ministry will assist the project with the integration of gender-responsiveness into the existing development plans, policies and budgets at a <i>wilayah</i> -, <i>moughataa</i> <sup>31</sup> - and commune-level. Moreover, they will support the incorporation of gender-responsiveness in the implementation of the project interventions.
Ministry of Economic Affairs and Development	<ul style="list-style-type: none"> <li>• Interests concerned with the development, implementation and evaluation of the Government's economic and social policies.</li> </ul>	These stakeholders will support the implementation of several Outputs in the proposed project, predominantly contributing to the implementation of Output 1.1.

<sup>31</sup> Administrative division below the level of wilayah.

	<ul style="list-style-type: none"> <li>Ensuring international strategies and policies align with the national inequality and poverty reduction policies in place.</li> <li>Public-investment and private-sector development programmes.</li> </ul>	
Ministry of Housing, Urbanism and Regional Planning	<ul style="list-style-type: none"> <li>Urban planning and development</li> <li>Regional development and land reform</li> <li>Public buildings and equipment</li> <li>Governance, monitoring and evaluation</li> </ul>	This Ministry will provide input for the integration of climate change considerations within their relevant development plans and policies. This will ensure the mainstreaming of climate risks into development planning, ensuring that developments are risk averse.
Ministry of Interior and Decentralisation	<ul style="list-style-type: none"> <li>Territorial administration</li> <li>Decentralisation and local development</li> <li>Citizen and their property's security</li> <li>Crisis management</li> <li>Monitoring and coordinating emergency situations</li> </ul>	This stakeholder group will contribute to Output 1.1. by providing support for the establishment of knowledge-sharing mechanisms. Their assistance in the dissemination of climate knowledge and disaster related information will contribute towards the resilience of local communities in the target regions.
Civil society		
Project beneficiaries	<ul style="list-style-type: none"> <li>Concerned with all aspects of the project's interventions in each of the four hubs</li> </ul>	The local communities within the four hubs of Aoujeft, Rachid, Tamchekett and Nema, are the direct beneficiaries of the project. Their buy-in and direct participation with the proposed interventions is necessary. Without their support, the interventions will not be successful.
Participatory Oasis Management Association (AGPO)	<ul style="list-style-type: none"> <li>Oasis agriculture (phoeniculture) and farming systems</li> <li>Water insecurity of rural communities</li> <li>Unsustainable extraction and use of water, and the improvement of water monitoring and use</li> <li>Water management and mobilisation methods</li> </ul>	This stakeholder group will be involved in the intervention strategies that focus on restoring oasis ecosystems to allow ESSs to benefit the local communities in the four hubs. This will include addressing constraints in oasis-based agriculture and livestock practices which is negatively impacting local farming communities. Moreover, this group will assist in the construction of water management infrastructure for the conservation and mobilisation of this resource.
Management and coordination committees (CMCs). These consist of civil society representatives from: <ul style="list-style-type: none"> <li>AGPO</li> <li>Moughataa Breeders' Association</li> <li>Moughataa Cooperatives Unions</li> <li>Moughataa Farmers' Associations</li> </ul>	<ul style="list-style-type: none"> <li>Climate change adaptation integration into plans and policies</li> <li>Supporting the implementation of adaptation interventions</li> </ul>	These committees will improve coordination between local and regional authorities, civil society organisations, regional committees, and community members within the project's four target hubs.
Small holder farmers and pastoralists	<ul style="list-style-type: none"> <li>Livestock and land management practices</li> <li>Agricultural practices</li> <li>Horticultural activities</li> </ul>	These stakeholders will not only provide input on effective local interventions that require upscaling, but also assist in the implementation of Output 2.1. and Output 2.2. These Outputs will enhance the resilience of

		both ecosystems and local farmers to the impacts of climate change. Their involvement and buy-in is crucial for the successful implementation and maintenance of the project interventions aimed at land rehabilitation, natural resource management, climate-resilient livestock management practices and climate-smart agricultural practices and horticultural activities.
NGOs	<ul style="list-style-type: none"> <li>• Climate change induced hazards/disasters such as prolonged droughts</li> <li>• Agricultural and rural community development</li> <li>• Women's participation in development and natural resource management</li> </ul>	Assist with the coordination and implementation of the project interventions on the ground in the four target hubs.
Office of the Commissioner for Human Rights, Humanitarian Action and Relations with Civil Society (CDHAHRSC)	<ul style="list-style-type: none"> <li>• Designing, promoting, and implementing national policies on human rights, humanitarian action, and relations with civil society</li> </ul>	The NGOs that work in the environmental field are involved in the fight against climate change. These NGOs engage with local communities' projects to adapt and strengthen their resilience (and the resilience of ecosystems) to the impacts of climate change.
Multilateral and bilateral development organisations		
The United Nations Environment Programme (UNEP)	<ul style="list-style-type: none"> <li>• Environmental rights and governance</li> <li>• Disasters and conflicts</li> <li>• Water</li> <li>• Forests</li> <li>• Gender</li> <li>• Green economy</li> <li>• Resource efficiency</li> <li>• Sustainable development</li> <li>• Youth, education and environment</li> </ul>	UNEP has led the development of the proposed GCF project and will oversee all stages of project implementation.
The United Nations World Food Program (WFP)	<ul style="list-style-type: none"> <li>• Food security</li> <li>• Land rehabilitation</li> <li>• Ecosystem restoration</li> <li>• Enhancing the resilience of local communities and ecosystems to climate change</li> </ul>	This stakeholder group will serve as an implementing partner for the proposed GCF project. In particular, WFP will provide technical support for activities introduced under Outputs 2.1. and 2.2.

The Ministry of the Interior and Decentralisation (Ministère de l'Interieur et de la Décentralisation, MID) is focused on the decentralisation of governance, a principle established by law in Mauritania in 1986. Under this principle, regions and *wilayahs*<sup>32</sup> have political and financial autonomy. Institutional consultation mechanisms have been established at the regional and municipal levels to enhance local development. The main bodies are the Regional Poverty Reduction Committees (CRLPs), Regional Development Committees (CRDs) and thematic committees such as Regional Health Committees (CRSs). The main mechanism at municipal level is the Citizen Consultation Committee (CCC), which has a clear allocation of responsibilities. In practice, however, governance remains centralised and local counties are under the authority of national ministries, and regional consultation mechanisms still require legal and financial frameworks to operate fully.

### 3. Overview of identified stakeholders

<sup>32</sup> A *wilayah* is an administrative division in Mauritania, usually translated as 'state' or 'province'.

The development of a comprehensive and inclusive adaptation project requires extensive consultations to: i) meet the relevant stakeholders involved in the project; ii) map out and analyse the varying actors involved in the project; iii) characterise the targeted communities; iv) analyse the local-level gender dynamics of the project's intervention areas; and v) collect the necessary information to conduct a feasibility study for the proposed project. To this end, appropriate methods to consult with the varying stakeholder groups were identified. These include: i) bilateral meetings with stakeholders; ii) focus groups with communities within the proximity of intervention areas; iii) systematic field surveys at a territorial level to collect environmental and socio-economic data; and iv) community-level field visits.

This section presents the stakeholders identified during project development, including national, departmental, district, municipal, community, and civil society stakeholders. Additionally, it identifies the roles of stakeholder groups in decision-making and implementation of the various project Outputs and interventions. This identification of stakeholders is based on the GCF Funding Proposal requirements, which include an emphasis on the levels of public participation, the role of key stakeholders and joint contributions of these actors to the success of the project. Furthermore, the scope of the proposed project, as well as possible means of maximising local communities' social, economic and environmental benefits from the project implementation were considered when identifying priority stakeholders. Further identification of stakeholders during project implementation will be gender responsive and include vulnerable groups.

The relevant stakeholder groups, their specific interests, as well as their engagement with the implementation of the project is detailed in Table 2.

### 3.1. *Pre-assessment of gender context*

Considering the project's objective to ensure gender responsiveness of the proposed project interventions, a detailed assessment of the gender context within Mauritania was conducted. This sub-section — obtained from the feasibility study of this project<sup>33</sup> — provides a brief overview of the gender context in relation to: i) women's rights in Mauritania; ii) women's education; iii) women's labour force participation; and iv) women's property rights and access to land; and v) women's access to finance and income. The comprehensive Gender Analysis and Action Plan (Annex 8) ensures that the project does not contribute to and exacerbate gender-related inequalities. Additionally, the project will make every effort to contribute to national efforts to improve the status of women and improve gender equality by mainstreaming gender considerations into climate change adaptation strategies and policies.

#### 3.1.1. Women's rights in Mauritania

In 2001, the GoM ratified the International Convention on the Elimination of all forms of Discrimination Against Women (CEDAW). However, a general reservation was entered upon accession, stipulating that only those articles in agreement with *Sharia*-based laws and the Mauritanian Constitution would be drafted into the country's Personal Status Code (PSC)<sup>34</sup>. Although this general reservation was partially removed in 2014, the GoM has not yet lifted reservations applying to articles 13(a) and 16 of CEDAW, which relate to: i) eliminating discrimination in family benefits; and ii) requiring equality in marriage and family matters. In 2014, the Organisation for Economic Co-operation and Development (OECD) rated Mauritania's inequality as 'Very High' on the Social Institutions and Gender Index<sup>35</sup>. Moreover, in 2020, the country was ranked 177<sup>th</sup> out of 190 economies globally on the index for Women, Business and the Law (WBL), which evaluates how women are affected by national legislation at several stages of their lives<sup>36</sup>. Mauritania's worst-scoring indicators in the WBL assessment included: i) women's access to assets; and ii) legal constraints relating to marriage — both of which received a score of 0 out of 100<sup>37</sup>, signifying that Mauritanian women remain subject to inequality within the country's legal framework.

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<sup>33</sup> Annex 2: Feasibility Study

<sup>34</sup> United Nations Treaty Collection. 2022. Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) — Mauritania. Available at: <https://treaties.un.org/Pages/Declarations.aspx?index=Mauritania&lang=en&chapter=4&treaty=334#EndNotes%20Section>

<sup>35</sup> Organisation for Economic Co-operation and Development (OECD). 2014. Social Institutions and Gender Index: Mauritania. Available at: <https://www.genderindex.org/wp-content/uploads/files/datasheets/MR.pdf>

<sup>36</sup> WB. 2020. Women, Business and the Law (WBL). Washington, DC: <https://doi.org/10.1596/978-1-4648-1532-4>

<sup>37</sup> WB. 2021. WBL 2021: Mauritania. Available at: <https://wbl.worldbank.org/content/dam/documents/wbl/2021/snapshots/Mauritania.pdf>

Mauritania's PSC, established in 2001, serves as the primary codified law governing marriage and family relations in Mauritania<sup>38</sup>. Despite the equality guarantee under Article 1 of Mauritania's Constitution, Article 56 of the PSC provides a marital framework based on male guardianship over women and children<sup>39</sup>. This disparity is evident at the household level, where men hold legal authority and women are expected to assist in managing the family. Moreover, Mauritania's formal Labour Code reinforces conventional gender roles in the household by prohibiting women from working in specific industries (discussed in more detail below). However, ~50% of households in the focal hubs of Aoujeft, Rachid and Tamchekett are headed by women — mainly resulting from divorce, widowhood and the migration of men from rural to urban areas in search of work<sup>40</sup>.

Mauritanian women often enter marriage agreements at a young age. Although the legal age of marriage is 18 for both men and women, Article 6 of the PSC enables male guardians to contract a young girl into marriage should the arrangement be deemed in the minor's best interest. However, since the PSC does not specify what these 'best interests' entail, young girls are often married off to alleviate family members of the financial responsibilities associated with childcare. Indeed, Mauritanian girls are more likely to marry early if they live in rural areas and are from poorer socio-economic groups<sup>41</sup>. As a result, child marriage remains widespread in Mauritania, particularly in rural areas, where there is no minimum age for customary marriage<sup>42</sup>. More than one third (~34%) of Mauritanian women between the ages of 20–49 were married before the age of 18. Additionally, ~25% of women within the same age group had given birth to their first child before the age of 18<sup>43,44</sup>. In contrast, ~4% of Mauritanian boys marry before the age of 18<sup>45</sup>.

### 3.1.2. Women's education

Although the gross enrolment rates for boys and girls in Mauritania are approximately equal, child marriage and early childbearing jeopardise girls' chances of completing school. Between 2010 and 2018, only ~56% of Mauritanian girls completed primary school, compared with ~64% of boys. Moreover, in 2018, ~40% of secondary school-aged girls were out of school compared with 33% of boys in the same age group. However, secondary school completion rates for the same period were low for both girls and boys (15% and 14% respectively<sup>46</sup>), reflecting low levels of teacher competence, poor management of the education sector, the poor condition of school facilities and low continuity in the education cycle<sup>47</sup>. Although the literacy rate for Mauritanian women (~57%) is considerably higher than the average for women in the Sahel region (~33%)<sup>48</sup>, it remains low compared with the literacy rate for Mauritanian men (~70%)<sup>49</sup>. This discrepancy is particularly evident in the Tagant wilayah (Rachid hub), where the women's literacy rate is ~34%, compared with the men's literacy rate of ~42%. Within the Adrar wilayah (Aoujeft hub), the women's literacy rate (~27%) is slightly higher than the men's (~22%); however, both are considerably lower than the national average, reflecting limited access to education for both girls and boys in rural areas<sup>50</sup>. As a result of low women's literacy rates and the PSC's

<sup>38</sup> Musawah. 2017. Mauritania: Overview of Muslim family laws & practices. Available at: <https://www.musawah.org/wp-content/uploads/2019/03/Mauritania-Overview-Table.pdf>

<sup>39</sup> Musawah. 2017. Mauritania: Overview of Muslim family laws & practices. Available at: <https://www.musawah.org/wp-content/uploads/2019/03/Mauritania-Overview-Table.pdf>

<sup>40</sup> Appendix 1

<sup>41</sup> Male, Chata; Wodon, Quentin. 2016. Basic Profile of Child Marriage in Mauritania. Health, Nutrition and Population Knowledge Brief;. WB, Washington, DC. © World Bank. Available: <http://hdl.handle.net/10986/24551>

<sup>42</sup> WB. 2021. WBL 2021: Mauritania. Available at: <https://wbl.worldbank.org/content/dam/documents/wbl/2021/snapshots/Mauritania.pdf>

<sup>43</sup> WB. 2021. Mauritania Economic Update: Why it is Essential to Enable Women to Participate Fully in Economic Activity? Available at: <https://www.worldbank.org/en/country/mauritania/publication/mauritania-economic-update-why-it-is-essential-to-enable-women-to-participate-fully-in-economic-activity>

<sup>44</sup> WB. 2021. Quatrième rapport sur la Situation Économique en Mauritanie: Un meilleur avenir: accélérer la relance économique en misant sur le potentiel des femmes © World Bank. Available at: <https://documents1.worldbank.org/curated/en/961341622141230195/pdf/Rapport-sur-la-Situation-Economique-en-Mauritanie-Un-Meilleur-Avenir-Accelerer-la-Relance-Economique-en-Misant-sur-le-Potentiel-Femmes.pdf>

<sup>45</sup> Islamic Republic of Mauritania. 2016. Enquête par grappes à indicateurs multiples MICS 2015. Available: [https://mics-surveys-prod.s3.amazonaws.com/MICS5/West%20and%20Central%20Africa/Mauritania/2015/Final/Mauritania%202015%20MICS\\_French.pdf](https://mics-surveys-prod.s3.amazonaws.com/MICS5/West%20and%20Central%20Africa/Mauritania/2015/Final/Mauritania%202015%20MICS_French.pdf)

<sup>46</sup> UNICEF. 2019. State of the World's Children – 2019. Available at: <https://www.unicef.org/media/63016/file/SOWC-2019.pdf>

<sup>47</sup> WB. 2020. Mauritania: Improving Education to Foster Social Cohesion and Support Economic Development. Available at: <https://www.worldbank.org/en/country/mauritania/publication/improving-education-to-foster-social-cohesion>

<sup>48</sup> UNESCO Institute for Lifelong Learning (UIL). 2020. UIL launches study on literacy in the Sahel region. Available at: <https://uil.unesco.org/literacy/uil-launches-study-literacy-sahel-region>

<sup>49</sup> WB. 2021. Quatrième rapport sur la Situation Économique en Mauritanie: Un meilleur avenir: accélérer la relance économique en misant sur le potentiel des femmes © World Bank. Available at: <https://documents1.worldbank.org/curated/en/961341622141230195/pdf/Rapport-sur-la-Situation-Economique-en-Mauritanie-Un-Meilleur-Avenir-Accelerer-la-Relance-Economique-en-Misant-sur-le-Potentiel-Femmes.pdf>

<sup>50</sup> Appendix 1

reinforcement of conventional gender roles, young women are also ~50% less likely to enrol in tertiary education than young men<sup>51</sup>.

### 3.1.3. Women's labour force participation

Although the GoM has ratified International Labour Organisation conventions on discrimination and equal remuneration in the workplace, women's labour force participation remains low (~31% of total work force<sup>52</sup>) and employed women are still subjected to a pronounced gender pay gap<sup>53</sup>. Article 57 of the PSC stipulates that married women have the right to choose and practise their profession within the bounds permitted by *Sharia*; however, there is no clear description of what these bounds entail<sup>54</sup>. Under the national Labour Code, women are prohibited from working night hours in specific environments, including factories, plants and mining quarries. In addition, the Labour Code prohibits women from working in occupations considered dangerous, arduous or immoral<sup>55</sup>, including, *inter alia*: i) work within the transport industry; ii) work involving 'heavy lifting' or the use of large machinery; and iii) work taking place within chemical treatment plants<sup>56</sup>. To evade labour policies restricting their participation in the formal sector, women often seek employment opportunities in unregulated environments. Women are therefore over-represented in the informal sector (~58% of informal work force), where they forego social security benefits and protection by labour laws<sup>57</sup>. As a result, many women and young girls are vulnerable to discrimination and sexual harassment in the workplace, particularly in rural areas<sup>58</sup>.

### 3.1.4. Women's property rights and access to land

Under the Constitution, women and men are guaranteed equal rights to own property and land. However, under customary *Sharia* law, women cannot purchase or transfer land without the authorisation of a third party — generally a male guardian or family member. Women's access to land ownership is therefore limited, particularly in rural areas where governance is generally weak and common use of customary law has helped maintain the tradition of denying women equal access to land<sup>59</sup>. In rural communities in northern Mauritania, property ownership is considered a major life goal and achievement; however, a customary patrilineal inheritance system prevents most women from acquiring land and the issue of land tenure remains complicated. In 2015, women represented only 7.9% of registered landowners in Mauritania and only ~4% of landowners in rural areas<sup>60</sup>. Since agricultural practices provide an important source of income in rural areas, limited access to farmlands indirectly excludes women from participating in this economic activity. Compounding women's difficult access to land ownership are: i) high poverty rates; ii) low levels of education among women; and iii) challenges associated with retaining property after being divorced or widowed<sup>61</sup>.

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<sup>51</sup> WB. 2021. Quatrième rapport sur la Situation Économique en Mauritanie: Un meilleur avenir: accélérer la relance économique en misant sur le potentiel des femmes © World Bank. Available at: <https://documents1.worldbank.org/curated/en/961341622141230195/pdf/Rapport-sur-la-Situation-Economique-en-Mauritanie-Un-Meilleur-Avenir-Accelerer-la-Relance-Economique-en-Misant-sur-le-Potentiel-Femmes.pdf>

<sup>52</sup> WB. 2020. Labor force, female (% of total labor force) – Mauritania. Available at: <https://data.worldbank.org/indicator/SL.TLF.TOTL.FE.ZS?locations=MR>

<sup>53</sup> OECD. 2019. Social Institutions and Gender Index: Mauritania. Available at: <https://www.genderindex.org/wp-content/uploads/files/datasheets/2019/MR.pdf>

<sup>54</sup> Musawah. 2017. Mauritania: Overview of Muslim family laws & practices. Available at: <https://www.musawah.org/wp-content/uploads/2019/03/Mauritania-Overview-Table.pdf>

<sup>55</sup> OECD. 2019. Social Institutions and Gender Index: Mauritania. Available at: <https://www.genderindex.org/wp-content/uploads/files/datasheets/2019/MR.pdf>

<sup>56</sup> International Labour Organization. 2017. Mauritania — Maternity protection — 2011. Available at: [https://www.ilo.org/dyn/travail/travmain.sectionReport1?p\\_lang=en&p\\_structure=3&p\\_year=2011&p\\_start=1&p\\_increment=10&p\\_sc\\_id=2000&p\\_countries=MR&p\\_print=Y#:~:text=No%20woman%20or%20pregnant%20woman,work%20in%20mines%20or%20quarries.](https://www.ilo.org/dyn/travail/travmain.sectionReport1?p_lang=en&p_structure=3&p_year=2011&p_start=1&p_increment=10&p_sc_id=2000&p_countries=MR&p_print=Y#:~:text=No%20woman%20or%20pregnant%20woman,work%20in%20mines%20or%20quarries.)

<sup>57</sup> OECD. 2019. Social Institutions and Gender Index: Mauritania. Available at: <https://www.genderindex.org/wp-content/uploads/files/datasheets/2019/MR.pdf>

<sup>58</sup> CEDAW. 2014. Concluding observations on the combined second and third periodic reports of Mauritania. Available at: <https://digitallibrary.un.org/record/779095?ln=en>

<sup>59</sup> WB. 2015. Women's Access to Land in Mauritania: A case Study in Preparation for the COP. Washington D.C. Available at: <https://documents1.worldbank.org/curated/pt/224621467991907919/pdf/100049-WP-PUBLIC-Box393216B-Women-s-Access-to-Land-in-Mauritania.pdf>

<sup>60</sup> WB. 2015. Women's Access to Land in Mauritania: A case Study in Preparation for the COP. Washington D.C. Available at: <https://documents1.worldbank.org/curated/pt/224621467991907919/pdf/100049-WP-PUBLIC-Box393216B-Women-s-Access-to-Land-in-Mauritania.pdf>

<sup>61</sup> Salamata B, Baro M & O'Sullivan N. 2015. Women's access to land in Mauritania: a case study in preparation for the COP. In: OECD. 2019. Social Institutions and Gender Index: Mauritania. Available at: <https://www.genderindex.org/wp-content/uploads/files/datasheets/2019/MR.pdf>



### 3.1.5. Women's access to finance and income

Under the Constitution, Mauritanian men and women have equal rights to open a bank account, access credit and register a business, regardless of their marital status. However, as a result of cultural norms and gender roles — which designate administrative decision-making power to men and restrict women's participation in certain economic activities, as discussed above — only ~15% of women held bank accounts in 2017, compared with 26% of men. Similarly, in 2017 only ~3% of registered Mauritanian companies were majority-owned by women<sup>62</sup>. Between 2009–2012, the GoM developed a National Plan of Action for Rural Women<sup>63</sup>, in which it laid out specific actions to strengthen the role of women in business. These included: i) promoting savings in rural communities; ii) strengthening and developing microfinance structures; and iii) establishing financial tools and fiscal management training programs for rural women. However, many women still face challenges in accessing formal financial services, including: i) the traditional roles of men as the head of the household and decision-makers in the family; ii) women's limited access to land and livestock or other assets that could be used as a collateral guarantee; and iii) low levels of literacy and education among women<sup>64</sup>.

## 4. Stakeholder consultations during project development

### 4.1. Introduction

The United Nations Environment Programme (UNEP), acting as Accredited Entity (AE), and the *Ministère de l'Environnement et du Développement Durable* (Ministry of Environment and Sustainable Development, referred to as the MEDD), acting as Executing Entity (EE), are leading the preparation of a Green Climate Fund (GCF) funding proposal entitled 'Strengthening the resilience of ecosystems and populations in four regional hubs in northern Mauritania'. Several stakeholder consultations have been undertaken by the accredited- and executing entities to supplement the development of this funding proposal. These consultations were conducted in the four regional hubs selected as target sites for proposed project activities — namely, Aoujeft, Rachid, Tamchekett and Néma. This stakeholder consultation report provides an overview of the comprehensive consultation process undertaken by the project development team over the course of four field missions, followed by a synopsis of the information obtained from stakeholders during this process, which includes a collection of stakeholder perceptions, concerns, opinions, priorities and proposals.

The stakeholder consultation process included four separate missions to various wilayah within the four target hubs. All information collected during these field missions — presented in Section 4.1 below — has been aggregated according to the four hubs visited. The first field mission began on 24 March 2021 and concluded on 6 April 2021, during which all four hubs were visited. The mission team included: i) Mr. Sid'Ahmed Lehbib Cheikh El Houssein, as the environment and forestry expert and mission lead; ii) Mr. Djibril Sarr as the hydraulics and water expert; iii) Mr. Mohamed Sidi Bollé as the agricultural engineering expert; and iv) Mr. Moussa Keita as the socio-economic expert. The main objectives of this mission were to: i) meet with local authorities (*walis*<sup>65</sup>, *hakems*<sup>66</sup>, *Chef d'Arrondissement*<sup>67</sup> and their collaborators) to update them on the status of the project; and ii) host workshops to engage with the local communities on topics pertaining to perceived constraints, climate vulnerability, social vulnerability, and proposed adaptation techniques. Visiting the hubs and surrounding landscapes to ascertain the environmental constraints, natural landscape degradation and the socioeconomic infrastructures threatened by climate change was also a mission objective.

The second mission took place on 11 April 2021–22 April 2021 during which Aoujeft and Tamchekett were visited. The mission team included representatives from UNEP; ii) C4 EcoSolutions; iii) the Ministry of Environment and Sustainable Development (MEDD); and iv) external consultants such as the National

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<sup>62</sup> WB. 2021. Quatrième rapport sur la Situation Économique en Mauritanie: Un meilleur avenir: accélérer la relance économique en misant sur le potentiel des femmes © World Bank. Available at: <https://documents1.worldbank.org/curated/en/961341622141230195/pdf/Rapport-sur-la-Situation-Economique-en-Mauritanie-Un-Meilleur-Avenir-Accelerer-la-Relance-Economique-en-Misant-sur-le-Potentiel-Femmes.pdf>

<sup>63</sup> Islamic Republic of Mauritania. 2008. Plan d'action national pour la femme rurale (2009-2012). Available at: <https://www.ilo.org/dyn/natlex/docs/MONOGRAPH/96687/114335/F1693895911/MRT-96687.pdf>

<sup>64</sup> CEDAW. 2014. Concluding observations on the combined second and third periodic reports of Mauritania. Available at: <https://digitallibrary.un.org/record/779095?ln=en>

<sup>65</sup> The governor of a province.

<sup>66</sup> Rulers, governors, judges or prefects.

<sup>67</sup> Administrative district manager.

Consultant and the Gender and Ecosystem Service (ESS) expert. The objective of the mission was to fast-track the development of the Climate Change Risk Assessment (CCRA) and the funding proposal for this project. To meet the objectives of the mission, the following actions were implemented during the field mission: i) consult national experts on the availability of datasets for the different deliverables; ii) discuss the suitability of implementation protocols and intervention in local contexts; and iii) clarify what information and deliverables are needed from consultants. The mission revealed the following observations and conclusions: i) additional data was made available for the development of the CCRA and project deliverables by the national experts; ii) an engagement strategy for local consultations was further developed, building on preliminary guidelines developed during the mission, including for the development of the GAP and ESMF; iii) a workplan was developed for the fast-tracked development of a full funding proposal and associated annexes; iv) community engagements revealed the extent of climate change impacts on livelihoods.

The third mission was carried out from 8 April 2022–12 April 2022, during which all four target hubs were visited by the project development team. In alignment with the objectives of the funding proposal, the following information was collected during stakeholder engagements: i) detailed information on the causal links between climate-factors, non-climate factors and climate impacts; ii) information on the economic impacts of climate change and an economic assessment of possible solutions to the problem; iii) an assessment of best practices for climate change adaptation that could potentially be upscaled under the proposed project; and iv) a comprehensive strategy to meet the GCF investment criteria related to paradigm shifting, sustainable development and efficiency and effectiveness. In the hub of Aoujeft, located in Adrar wilayah, consultations consisted of a meeting with the hakem of the moughataa, followed by engagements with community members involved or interested in environmental issues and adaptation to climate change in the communes of Aoujeft and Aïn Savra. In Rachid hub, located in the wilayah of Tagant, consultations began with a meeting with the *Chef d'Arrondissement*, after which local community members and civil society representatives involved in natural resource management and climate change adaptation were consulted. The mission delegation then continued to the hub of Tamchekett, in the wilayah of Hodh El Gharbi, where a consultation with community members was held following a meeting with the hakem of the moughataa. The hub of Néma was then visited, wherein consultations were held with: i) regional delegates of the MEDD; and ii) civil society and local community representatives.

During the fourth and final field mission, which took place from 11 February 2023–03 March 2023, the national consultant and representatives from the project development team visited 13 communes within the four hubs. A total of 16 meetings were held and several sites were visited that were either currently implementing activities for dune fixation and combatting desertification or where the need for dune fixation and adaptation to desertification exists. Over the course of the mission, meetings with administrative authorities, technical services and beneficiaries revealed the following: i) the choice of target hubs is justified, given the impact of climate change and the poverty of the populations within the target hubs; ii) stakeholders at all levels insisted on the importance of creating a sustainable mechanism for settling populations within their territories to prevent rural exodus; and iii) stakeholders have opted for site management by village committees, or project management teams, whose members should include 1–2 AGPO representatives. In accordance with the stakeholder feedback, the success of the project will necessitate giving priority to the following: i) the precise delimitation of the hubs, ensuring project activities will not be scattered, but rather focused; ii) the creation of water retention basins downstream or upstream of each of the *wadis* for the purpose of irrigation and watering of livestock; iii) the development and enhancement of important areas for market gardening; iv) the introduction of a simple mechanisation to replace traditional tools that have become archaic and inefficient; v) the protection of agricultural areas (*graras*) against animals and unsustainable use; and vi) the target (hub) populations are among the poorest in each of the areas, which is perceptible by their mode of habitation and purchasing power. The survey used during the final field mission is attached as Appendix 4 to this Annex.

Based on the feedback gathered on this final mission, the following activities should be prioritised under the proposed project:

- the fixation and stabilisation of dunes;
- the restoration of degraded soils;
- the implementation of studies that create maps which identify water points to assist in the establishment of water points for both agriculture and livestock;
- the provision of water sources for both consumption and agropastoral production to benefit populations living around reforestation sites;
- the mass introduction of market gardening, coupled with the provision of more profitable tools and the development of sufficient and viable spaces with sustainable irrigation equipment (solar energy);
- the introduction of a more resilient and profitable farming method that can withstand climatic disturbances;

- the introduction of a selected seed bank platform that can improve yields and extract farmers from market hazards;
- the creation and/or rehabilitation of water retention and conservation infrastructures for irrigation and livestock farmers;
- the provision of technical training to producers on techniques that would make their production more climate-resilient;
- the creation of defensive measures to allow plant regeneration; and
- the establishment of other income-generating activities, which would help to improve livelihoods and assist populations in adapting to climate change.

#### 4.2. Summary of stakeholder consultations

The tables below provide an overview of all stakeholder consultations undertaken in the target hubs of Aoujeft, Rachid, Tamchekett and Néma over the course of four field missions (March 2021–March 2023).

##### 4.2.1. Aoujeft hub consultations

#### March–April 2021

**Table 3.** Summary of Aoujeft hub consultation 1.

Aoujeft hub: Stakeholder consultation 1	
Date	24 March 2021
Location	Aoujeft
Attendees	Meeting with the Wali of Adrar in the presence of the hakem of Atar, the Delegate, the MEDD, the DRHA/MHA, the CRA/PDDODR, the DRAS, the DR/MDR and the <i>Walis</i> Legal Adviser
Purpose of consultation	Introduction to the status and future of the project as well as stating the objective of the mission
Main discussion points	
<p>The <i>Wali</i> welcomed the collection of data from the stakeholders. He highlighted the advancement of the desert as a concern and emphasised the silting up of roads and infrastructure with sand. He explained that the Adrar wilayah will be the central pole of the north because of its geographical position and the establishment of the new Tagant- Hodh El Gharbi-Hodh Ech Chargui road, allowing refuelling at Atar closer to Nouakchott. He believes that the selection of the Aoujeft municipality is applicable, and emphasised the difficulties encountered in the Adrar region and suggested that a team should be establishment to remove sand from the new road linking Adrar and Tagant as it is permanently buried. Moreover, he explained the importance of the support of the authorities and the consideration of the actual needs of the target population.</p> <p>The main discussions centred around the rampant silting of sand, the disappearance of certain plant species, the scarcity of water, the maintenance of dams such as Séguelil, the significant loss of natural water surfaces, loss of natural landscapes, as well as animal and human health problems related to climate change.</p> <p>The attendees of the meeting insisted on ensuring that adaptation interventions should focus on the priority needs of the populations, aligning with the data collection methods used.</p> <p>Additional meetings were held between national consultants and various heads of technical services.</p>	

**Table 4.** Summary of Aoujeft hub consultation 2.

Aoujeft hub: Stakeholder consultation 2	
Date	26 March 2021
Location	Aoujeft
Attendees	Delegate of the MEDD, DRHA/MHA, CRA/PDDODRA, DRAS, DR/MDR, Legal Advisor to the <i>Wali</i> , hakem of Aoujeft, the Deputy Mayor, representative of the civil registry, representatives of NGOs, farmers and stockbreeders in the palm groves, head doctor of the Aoujeft health center, the deputy mayor of the commune
Purpose of consultation	Plenary session with representatives of the technical directorates and local authorities. The <i>Wali</i> urged the technical directorates to provide the necessary information for the data collection and the hakem gave instructions to facilitate the data collection
Site visits	Seguelil dam site. Field identification of the problems of the palm groves and market gardening areas of the Seguelil <i>wadi</i> and of potential sites for intervention; the Grara and exchanges with the inhabitants. Visit of the palm groves and exchanges with farmers and stockbreeders, manual motor pumps, wells, and oases in danger of disappearing due to silting

Main discussion points	
<b>Preliminary findings:</b> Local stakeholders stressed that the major problem is silting and food security. A sand removal team for the new road linking Adrar to Tagant is a problem in the Adrar region. This uncontrolled silting, the disappearance of certain plant species, the scarcity of water, the maintenance of dams such as that of Séguellil, the significant loss of natural surfaces (landscapes?), date palm groves, and animal and human health problems related to climate change.	
<b>Local knowledge on climate change and associated constraints:</b> <ul style="list-style-type: none"> <li>• Successive droughts since 1960, which are becoming more frequent and severe.</li> <li>• Floods which are more frequent and severe (their impacts have destroyed houses and palm trees). These are more frequent in September, with the most severe flooding events having taken place in 2003.</li> <li>• Sand winds from north to north-east with negative impacts on ecosystems and infrastructure.</li> <li>• Silting of <i>wadis</i> due to lengthy drought and strong winds.</li> <li>• Heat waves observed in June and July inducing severe water stress for humans, animals, and plants.</li> <li>• The severity of climate conditions <i>with inter alia</i> the scarcity and irregularity of rainfall and warm temperatures.</li> <li>• The erosion of <i>wadis</i> due to torrential floods.</li> <li>• A water deficit during heat waves period (in the months of May–June).</li> </ul>	

## November 2021

**Table 5.** Summary of Aoujeft hub consultation 3.

Aoujeft hub: Stakeholder consultation 3	
Date	17 November 2021
Location	Aoujeft
Activities	Meeting with the Hakem of Aoujeft moughataa, the Mayor of Aoujeft commune and the inspector of the MEDD of Aoujeft
Attendees	C4ES experts, Mr. Abdelkader (UNEP), the national consultants (Mr. Isselmou and Dr. Abdellahi), Hakem of Aoujeft, Mr. Mohamed Mahmoud Ould Sidi, Mayor of the commune of Aoujeft, Mrs. Oumeimtaine Mint Souidi, Aoujeft MEDD inspector, Mr. Ndeida Ould Hamoud, and MEDD forestry guards, Mr. Amadou Diop and Mr. Oumar Haidara
Purpose of consultation	Presentation of mission objectives and primary data collection
Main discussion points	
<b>Main climate change impacts identified:</b> The department of Aoujeft, once a pole of production of dates and vegetables in addition to its pastoral vocation, has become an uninhabitable desert. Under the effect of siltation, the village was moved twice, and some public infrastructure was abandoned. The hub has experienced several decades of drought that have wiped out palm cultivation, decimated livestock, and impoverished populations. This situation is noticeable through: <ul style="list-style-type: none"> <li>• the scarcity and loss of vegetation cover;</li> <li>• the silting up of infrastructure;</li> <li>• the production of oases has decreased significantly, and market gardening is no longer practiced because of a lack of water;</li> <li>• groundwater has decreased to the point that date palms have dried up and vegetable production, which is the main livelihood activity by local communities, has almost disappeared; and</li> <li>• the nomadic pastoralists have been forced into a mass exodus towards the centre of Aoujeft where they have no means of income and live in an area that has not planned for additional inhabitants, posing several public health problems and conflicts.</li> </ul>	

**Table 6.** Summary of Aoujeft hub consultation 4.

Aoujeft hub: Stakeholder consultation 4	
Date	17 November 2021
Location	Aoujeft
Activities	Meeting with community representatives from Aoujeft (32 participants, including 18 women)
Attendees	Appendix 1
Purpose of consultation	Presentation of mission objectives and additional collection of data
Main discussion points	

**Main climate change impacts identified:**

- the scarcity of rainfall has disrupted their way of living by damaging the vegetation cover to the extent that there is an absence of trees to provide shelter and firewood;
- this reduction in rainfall contributed towards the silting that inundated the local community members' homes, resulting in their relocation on more than two occasions;
- this led the nomadic pastoralists to relocate to the village, which increased the demand for all products and services, increasing the number of people in poverty;
- the economic situation has shifted from exporting surplus dates and vegetables to being in a permanent deficit and requiring additional sources of food;
- silting up from droughts has left transport routes inaccessible and damages infrastructure and homes;
- high temperatures have become permanent for 10 months of the year, with temperatures sometimes exceeding 49°C;
- the water tables have decreased, resulting in the water points dropping from a depth of 15 m to more than 80 m – excluding any form of agricultural exploitation;
- poverty has increased to such a degree that some households resort to selling their small livestock and valuables for food; and
- new and unknown diseases have appeared in the region – such as a loss of teeth and the occurrence of night blindness.

**Stakeholders' examples of potential solutions:**

- interventions that would assist in combating silting;
- improved provision and access to water by constructing boreholes;
- restore vegetation cover and that the use of *Prosopis* for reforestation should be avoided because its negative impact on the survival of other indigenous plant species; and
- assistance in establishing income-generating activities.

**April 2022**

**Table 7.** Summary of Aoujeft hub consultation 5.

<b>Aoujeft hub: Stakeholder Consultation 5</b>	
Date	08 April 2022
Location	Aoujeft
Attendees	The hakem of the moughataa, representatives of the producers' associations (AGPOs) and the civil society. See Appendix 2 for further details.
Purpose of consultation	Collect data towards the development of the full funding proposal, ascertain the main impacts of climate change on the ecosystems, natural resources, and the livelihoods of the target population, and collect information on past and ongoing local climate change adaptation initiatives
<b>Main discussion points</b>	
Stakeholders highlighted the impacts of climate change on the water sector as the most affected, severely impacting the natural environment and living conditions in Aoujeft.	
<b>Main climate change impacts identified:</b> <ul style="list-style-type: none"> <li>• long cycles of drought which have led to the loss of natural vegetation — the last rainfall event was recorded 10 years ago in 2012;</li> <li>• depletion of surface water tables which severely impedes the production of dates and palm tree agriculture;</li> <li>• droughts have depleted the surface hydrological network that feeds the <i>graras</i> (low pressure basins where field crops are grown);</li> <li>• the increasing depth of water tables and the depletion of springs emanating from geological faults (commonly called <i>Ain</i>) has resulted in more costly and energy-intensive means of extraction; and</li> <li>• dune advancement threatening the fertile oases, habitation, and critical socio-economic infrastructure, such as roads, clayonnage/watling barriers, schools, and health centres.</li> </ul> <p>Stakeholders stated that the decline in agricultural production and the reduction in natural resources, combined with the negative impacts of the COVID-19 pandemic, has led to the highest rates of unemployment and poverty recorded in Aoujeft. To remedy this situation, several initiatives have been undertaken with mixed results.</p>	
<b>Adaptation interventions undertaken:</b> <ul style="list-style-type: none"> <li>• the construction of sills to slow down surface water run-off and increase surface and groundwater recharge;</li> <li>• manual drilling to effectively access underground water tables as a short-term measure, however it will not be sustainable as a medium- to long-term measure as water tables continue to recede; and</li> </ul>	

- the use of *Prosopis* as a fast-growing species for the biological fixation of dunes in areas of agricultural production — particularly to protect palm groves against silting — has negatively impacted indigenous plant species because of the competition for water.

Stakeholders stated that effective project interventions for adaptation need to establish and strengthen the resilience of populations and ecosystems using mechanisms, such as:

- The implementation of spatial planning projects and studies to assist in the preservation and management of natural resources, as well as the protection of basic infrastructure and production areas, which will contribute to improved yields; and
- pending the benefits of the abovementioned interventions, income-generating activities for women and youth cohorts need to be established, financed, and managed, to avoid a rural exodus.

Stakeholders also identified the following interventions that, if funded, could assist in reducing the impacts of climate change and positively impacting local communities.

**Stakeholders' examples of potential interventions:**

- The Ouad Ijchane sill: similar to the other sites, this is a *wadi* on which several palm groves are situated and experience a substantial lack of water. The minimal amount of run-off water from the catchment areas is quickly dispersed across the course of the *wadi*, resulting in limited infiltration to recharge the surface water table. The construction of sills is being implemented experimentally to reduce surface water flow rate and enable water infiltration deep into the water table, thereby increasing recharge. The sills have the additional advantage of not impacting the availability of water in downstream areas. Stakeholders highlight this intervention as a tool for the safeguarding of palm groves.
- The El Marveg dyke: at the bottom of the western part of the Adrar plateau, there are depressional areas, commonly called *graras*. They constitute an outlet for many watersheds on the plateau. Given the scarcity of rainfall and the fertility of these basins (*graras*), local communities establish reservoirs to practice flood recession farming. The El Marveg dam was selected by the stakeholders as a model project that can be extrapolated to other sites, provided that technical studies are carried out to determine the dimensions of the structures.
- The reforestation of Toueïguidit: *Prosopis* is a fast-growing species adapted to the driest environments. As a result, the stakeholders propose its use solely for the protection of infrastructure and dwellings situated a considerable distance from the agriculturally productive zones. Toueïguidit is a model area for this type of intervention because of the extent of dwellings and infrastructure threatened by the advancing dunes.
- The mechanical fixation of the Toungad dunes: this technique is used to combat the threat posed by the silting of agricultural areas — particularly oases. Stakeholders propose to adopt mechanical fixation by claying. The adoption of this technique is further motivated by the availability of palm leaves in the oasis environment.

More details on the abovementioned interventions can be found in Appendix 3 of this report.

**Table 8:** Summary of Aoujeft hub consultation 6.

Aoujeft hub: Stakeholder consultation 6	
Date	09 April 2022
Location	Aïn Savra
Attendees	The hakem of the moughataa and stakeholders involved in climate change adaptation and the environmental sector. See Appendix 2 for further details.
Purpose of consultation	Collect data towards the development of the full funding proposal, ascertain the main impacts of climate change on the ecosystems, natural resources, and the livelihoods of the target population, and collect information on past and ongoing local climate change adaptation initiatives
Main discussion points	
<b>Main climate change impacts identified:</b>	
<ul style="list-style-type: none"> <li>long cycles of drought have led to the loss of natural vegetation, which has negatively impacted the productivity of livestock farming (which is one of the primary livelihood practices in this commune);</li> <li>depletion of surface water tables which severely impedes agricultural production and availability of drinking water;</li> <li>droughts have depleted the surface hydrological network that feeds the <i>graras</i> (low pressure basins where field crops are grown); and</li> <li>sand inundation has affected the oases (the main agriculturally productive areas in this commune) and critical socio-economic infrastructure (the main one being the Aoujeft–Tidjikja road which limits their accessibility).</li> </ul>	



Stakeholders viewed the use of *Prosopis* for dune fixation as an unsuccessful initiative that had been implemented by the GoM, as it has negatively impacted indigenous vegetation and agricultural production.

Stakeholders stated that the municipality of Aïn Savra is the poorest in the wilayah and is considered one of the most vulnerable municipalities in the country. This can be attributed to a scarcity of natural resources resulting from the recurrent droughts, desertification compromising the productivity of the ecosystems, and limited economic infrastructure to incentivise investment in the area which impedes the ability of the population to diversify their livelihoods.

It was stated that community buy-in was an essential aspect to consider for any investment project to be effective in this area. The urgent protection of areas for agriculture was also listed as an important aspect to consider, notably to improve yields and decrease the rate of exodus from the village. To further prevent exodus, it was mentioned that the development of critical social infrastructure – such as hospitals and schools – was needed. It was also mentioned that the creation, financing, and management of income-generating activities for the women and youth was a necessary element for investment projects to succeed.

Stakeholders also identified the following interventions that, if funded, could assist in reducing the impacts of climate change and positively impacting local communities.

#### **Stakeholders' examples of potential interventions:**

- The weirs situated on the *wadi* upon which the palm groves of Aïn Savra are located: this is a large *wadi* on which several palm groves are located over a length of 7–8 km. The scarcity of rainfall and recurrence of drought have negatively affected the production and survival of the palm trees. The sparse surface water and limited infiltration has led to soil erosion and limited groundwater recharge. The construction of sills is being implemented experimentally to reduce surface water flow rate and enable water infiltration deep into the water table, thereby increasing recharge. The sills have the additional advantage of not impacting the availability of water in downstream areas. Stakeholders highlight this intervention as a tool for the safeguarding of palm groves.
- The Amejenjel dam: at the bottom of the western part of the Adrar plateau, there are depressional areas, commonly called *graras*. They constitute an outlet for many watersheds on the plateau. Given the scarcity of rainfall and the fertility of these basins (*graras*), local communities establish reservoirs to practice flood recession farming. This basin, given the potential rainfall in a normal year, requires a dam with water control structures for its development.
- Reforestation to protect the road on the Yenbech/Kedouel axis: *Prosopis* is a fast-growing species adapted to the driest environments. As a result, the stakeholders propose its use for the protection of infrastructure and dwelling located a considerable distance from the agricultural production zones. The Yenbech/Kedouel axis, which is frequently inundated by sand, is a model area for the planting of *Prosopis*.
- The mechanical fixation of the dunes of Aïn Savra: the threat posed by silting in agricultural areas, particularly oases, requires protection that uses minimal water. For this purpose, the stakeholders proposed to adopt mechanical fixation by claying. The adoption of this technique is further motivated by the availability of palm leaves in the oasis environment. This project will have the advantage of protecting both the oasis and the town, which are faced with the same threat. The stakeholders stated that the clay squares could be filled with indigenous plant species that are not harmful to palm trees, as well as other crops under the palm trees.
- The Achekine pastoral well: livestock breeding is a primary livelihood practice in the commune of Aïn Savra which, in a normal rainfall year, would significantly contribute to the food security of the population and provide a source of income for breeders in the commune. The scarcity of pastures and the absence of watering points for animals threatens the viability of this activity. There are a few areas of productive pastures remaining, which are rich in minerals and nutrients that are vital for livestock, but the limited water points hinder the potential to exploit them.

More details on the abovementioned interventions can be found in Appendix 3 of this report.

## **February–March 2023**

**Table 9:** Summary of Aoujeft hub consultation 7

<b>Aoujeft hub: Stakeholder consultation 7</b>	
Date	17 February 2023
Location	Atar
Activities	Meeting with <i>Wali</i> of Adrar
Attendees	Appendix 5
<b>Main discussion points</b>	

- The population in Adrar *want* to stay in the region, despite experiencing hardships related to climate change.
- The primary focus of the project should be to prevent/reduce rural exodus because of climate change impacts.
- All project activities should contribute to enabling the population to remain in their localities —by improving access to water, slowing sand inundation, and enhancing agricultural production under increasingly challenging climate conditions.
- Palm trees provide the main source of income to the population of Adrar; however, droughts are reducing productivity.
- Sand inundation has major impacts on existing infrastructure. For example, roads are obstructed which limits access to markets. The road to Rachid is severely impacted.
- The rarity of rainfall and increasing sand inundation have reduced the area of arable land.
- Many communities are abandoning traditional forms of income generation (agriculture and livestock husbandry) and moving to bigger cities in pursuit of new employment opportunities.
- Small dams are needed for water storage in project target sites.
- Soil restoration and improved water infiltration are needed to improve agriculture under future climate conditions.
- Mechanisation of agricultural processes is important.
- Roaming animals pose a great threat to agriculture as they eat or trample produce.
- Tourism development can serve as an important income-generating opportunity in the hub, and as such possibilities for ecotourism as income-generating activity (IGA) should be explored.

**Table 10.** Summary of Aoujeft hub consultation 8

Aoujeft hub: Stakeholder consultation 8	
Date	18/02/2023
Location	Tawaz
Activities	Meeting with DREDD and representatives of administration in Adrar
Attendees	Appendix 5
Main discussion points	
<ul style="list-style-type: none"> <li>• Drought, poverty, and sand inundation are all major problems (and interlinked challenges) in the project area of northern Mauritania.</li> <li>• There is a palm tree laboratory in Atar, with the manager of this laboratory having expressed an interest and willingness to contribute to project.</li> <li>• Solar pumps are needed to help bring groundwater to the surface for use in agroecology.</li> <li>• Project may be able to access a map of water resources from the <b>National Centre for Water</b>.</li> <li>• Limited rainfall is the biggest water-related challenge throughout the region, and committees promoting sustainable management of water are needed.</li> <li>• More advanced technology is needed to advance agricultural production and water access in the target hub of Aoujeft, however, this also requires training and knowledge co-creation.</li> <li>• Project activities should be managed by local beneficiaries after project implementation period to ensure project sustainability in the long-term.</li> <li>• Palm trees should be the focus in Aoujeft as they form the main agricultural activity, however, growing fruits, vegetables and herbs <i>under</i> palms is important for generating income over shorter time scales (in between date seasons/while palms grow).</li> <li>• The importance of women's inclusion was noted.</li> <li>• Best practices and lessons learned can be drawn from Oasis Sustainable Development Programme (PDDO by its French acronym) projects; coordination is key to project success.</li> <li>• There is a need to investigate different methods of water extraction and storage.</li> <li>• The project should consider introducing small-scale agriculture/subsistence agriculture at the household level – people should be growing food in their own homes.</li> <li>• Another important project in the region to coordinate with is the PARIIS project.</li> <li>• There is a great need for improving rural-urban links for agricultural produce.</li> <li>• The use of lucerne for livestock should be investigated.</li> </ul>	

**Table 11.** Summary of Aoujeft hub consultation 9

Aoujeft hub: Stakeholder consultation 9	
Date	19 February 2023
Location	Aoujeft
Activities	Meeting with hakem of Aoujeft
Attendees	Hakem of Aoujeft, DREDD inspector, National Consultant and project development team

Main discussion points	
<ul style="list-style-type: none"> <li>• A participatory approach is essential to project success.</li> <li>• The DREDD inspector in Aoujeft has already implemented a pilot project for dune fixation using both mechanical and biological dune fixation techniques.</li> <li>• It is very difficult to grow palm trees in Aoujeft because of the rarity of water.</li> <li>• <b>ASTRA</b> project is currently fighting desertification across a large area.</li> <li>• <b>PDDO</b> has contributed to resolving desertification in the area.</li> <li>• Limited roads linking Aoujeft to urban markets is a barrier to income security.</li> <li>• It is important that the project has its own vehicle, as transporting goods/labour in the area is a significant challenge.</li> </ul>	

**Table 12.** Summary of Aoujeft hub consultation 10

Aoujeft hub: Stakeholder consultation 10	
Date	19 February 2023
Location	Aoujeft
Activities	Meeting with community members in Aoujeft commune
Attendees	Appendix 5
Main discussion points	
<ul style="list-style-type: none"> <li>• Sand advancement and inundation of infrastructure is a major problem in this region, making dune fixation a priority. Existing dune fixation activities are promising and already practiced over 100 ha (~7000 <i>prosopis</i> seedlings).</li> <li>• AGPO representative suggests that the project needs a dedicated project committee.</li> <li>• Local NGO representative states that management committees should include qualified experts to ensure technical information is accessible; project beneficiaries should manage implementation and maintenance of activities (village ownership).</li> <li>• Dams and livelihood development activities are needed.</li> <li>• New committees formed under the project should draw guidance from existing committees with experience (for example, AGPOs).</li> <li>• In Maeden, heavy rainfall has destroyed palm groves (waterlogging), as such there is a need to capture and direct water towards storage facilities.</li> <li>• There are limited opportunities for private-sector investment in project activities.</li> <li>• A combination of rainfed and irrigated agriculture is used.</li> <li>• Agriculture is mostly practiced for subsistence, but some is also set aside for trade.</li> <li>• Growing henna is an important livelihood activity for women.</li> <li>• Poultry farming is the main livestock activity in Aoujeft.</li> <li>• Seeds for agriculture are very expensive; potential to establish local seed bank exists.</li> <li>• 30–40 dams and boreholes are required.</li> </ul>	
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The coordination mechanism of the project activities will be organised via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p><b>Suggestion:</b> The site committees receive payments for ecosystem services and decide on their use in coordination with the communal committees and under the supervision of the CTC and the control of the administrative authorities.</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation	<p>The rent from the infrastructure that will be created by the project in addition to the orientation of part of the regional development fund and the counterpart of the project that will be provided from the State budget constitute the potential funds that can ensure the sustainability of the action.</p> <p>At this level the duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the pole is located to exchange experience and launch good ideas for investment in adaptation to climate change.</p>

Facilitate the restoration of community-managed conservation areas in communes	<p>In terms of the mechanisms for the restoration and conservation of spaces, several constraints were mentioned, including:</p> <ul style="list-style-type: none"> <li>• The need to protect the inhabitants, their infrastructures and their production areas against silting. This is experienced among all the agglomerations of the moughataa of Aoujet. The attempt underway around the city of Aoujeft can be noted;</li> <li>• The provision of water for human consumption and agricultural production by creating efficient reservoir and water conservation basins downstream, in addition to the slowdown thresholds. This is needed at all levels of the agglomerations of the moughataa. This requires drilling according to a prospective pipeline to identify places where water points with sufficient flow can be created, establishing water reservoirs where possible and placing water retention basins downstream of flow sites;</li> <li>• Opening up production areas to allow marketing of their production;</li> <li>• Restoration of degraded soils;</li> <li>• Training regarding the cultivation of resilient varieties of species; and</li> <li>• Development and protection of Graras and other production areas (Grara de Eirech and bedjamous area) in the commune of Aoujeft and the introduction of new agricultural production tools that are simple and accessible to farmers and tillers.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>People already practice crops resistant to water stress such as sorghum, barley, beans, watermelons, and some varieties of vegetables. They are ready to practice other crops if they are provided training and agricultural tools that increase productivity. There are timid attempts to plant fruit trees and Henna. The agricultural activities practiced is mainly subsistence as it is for self-consumption and sold for livelihood purposes.</p> <p>The stakeholders also mentioned their interest in developing chains of income-generating activities that can enhance environmental conservation such as, solar energy, the use of butane gas and manure from animal waste, village shops to meet local demand, the introduction of grinding machines for the crushing of date nuts as livestock fodder, and the crushing of Henna instead of its marketing in its raw state.</p>
Investing in water collection and conservation measures	<p>Depending on the populations encountered, these measures are well appreciated and can make an important contribution towards solving the water shortage problem for both agriculture and livestock.</p> <p>Stakeholders mentioned the choice of large-scale basins (300 m<sup>3</sup>) in the flow sites (at all <i>wadis</i>), dams (upstream of certain <i>wadis</i> (Elwad lebeyadh and Mhaireth), slowdown thresholds and drilling at all sites where there is need, particularly in the Mhaireth <i>wadi</i>).</p>

**Table 13.** Summary of Aoujeft hub consultation 11

Aoujeft hub: Stakeholder consultation 11	
Date	20 February 2023
Location	Ain Savra
Activities	Meeting with community members in Ain Savra commune
Attendees	Appendix 5
Main discussion points	
<ul style="list-style-type: none"> <li>• This is a very rural commune with major challenges related to sand inundation and water access.</li> <li>• Community members are willing to work hard for project success, however the resources are required.</li> <li>• Camels and goats are the main species of livestock kept in this commune.</li> <li>• The commune has eight major agricultural localities or 'grara' where food production is practiced.</li> <li>• Some <i>grara</i> are only seasonally inhabited; when there is rainfall, people stay there to grow food.</li> <li>• Agriculture and livestock husbandry are the main livelihood activities in this commune.</li> <li>• Dune fixation is needed over approximately 20 km<sup>2</sup>.</li> <li>• Community needs improved access to grain meal (flour) for baking; potential to set up a mill exists.</li> </ul>	

Primary topics and proposed activities to address constraints	
Coordination platforms in target hubs for the implementation and scaling up of climate change adaptation interventions	<p>The coordination mechanism of the project activities will be organised via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p><b>Suggestion:</b> The site committees receive payments for ecosystem services and decide on their use in coordination with the communal committees and under the supervision of the CTC and the control of the administrative authorities.</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>• The impoverished inhabitants of the Ain Savra area cannot currently invest in adaptation measures and the financial flows are still to be sought through the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<p>The priority needs expressed by the population are:</p> <ul style="list-style-type: none"> <li>• the fight against silting for 20 km around Ain Savra, all along the Aoujeft -Ain Savra Road;</li> <li>• the availability of water for human consumption, agricultural production and livestock from boreholes, dams, slowdown thresholds and water conservation basins;</li> <li>• agriculture, provided that water is available;</li> <li>• the creation of self-employment via IGAs; and</li> <li>• training and supervision.</li> </ul> <p>The restoration of areas will employ the following:</p> <ul style="list-style-type: none"> <li>• the fixation of dunes – which needs to protect the inhabitants, their infrastructures and their production areas against silting – this is necessary throughout the agglomerations of the municipality of Ain Savra;</li> <li>• water reservoirs;</li> <li>• stone barriers;</li> <li>• slowdown thresholds; and</li> <li>• the provision of water for human consumption and agricultural production by creating efficient reservoirs and water conservation basins downstream of the flow sites in addition to slowdown thresholds – this is necessary at the level of all agglomerations.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>The inhabitants of this municipality already use crops that are resistant to water stress such as sorghum, barley, beans, watermelons and some varieties of vegetables. They are ready to practice other crops if they are provided training and agricultural tools that increase productivity. There are timid attempts to plant fruit trees and Henna. The agricultural activities practiced is mainly subsistence as it is for self-consumption and sold for livelihood purposes.</p> <p>The stakeholders also mentioned their interest in developing chains of income-generating activities that can enhance environmental conservation such as, solar energy, the use of butane gas and manure from animal waste, village shops to meet local demand, the introduction of grinding machines for the crushing of date nuts as livestock fodder, and the crushing of Henna instead of its marketing in its raw state.</p> <p>The stakeholders also stated the need for training farmers and herders on the modes and modalities of developing agriculture and livestock</p>

	resilient to climate change. Additionally, there is the need for the development of cultivation areas – <i>grara</i> areas – as in the case of Lebheir, Erakna, El Igd, Yembech, Amjenjer, and Enezgar.
Investing in water collection and conservation measures	Depending on the populations encountered, these measures are crucial because in their absence no other activity can be undertaken. Thus, they could make a valuable contribution towards solving the water shortage problem threatening agriculture and livestock.  Stakeholders mentioned the choice of large-scale basins (500 m <sup>3</sup> ) situated at flow sites (at all <i>wadis</i> ), dams (upstream of some <i>wadi</i> (Ain Savra), slowdown thresholds and drilling at all necessary sites, particularly in the <i>wadi</i> of El ain Essavra).

#### 4.2.2. Rachid hub consultations

##### March–April 2021

**Table 14.** Summary of Rachid hub consultation 1.

Rachid hub: Stakeholder consultation 1	
Date	27–31 March 2021
Location	Rachid
Attendees	In the rural commune of Rachid: The Chef d'arrondissement' of Rachid in the presence of the Secretary General of the commune and the First Deputy Mayor, the hakem and local elected officials who facilitated the collection of data  In the agricultural–urban commune of Tidjikja: The <i>Wali</i> of Tidjikja, DREDD of Tidjikja, and delegates of the MEDD, DRHA/MHA, CRA/PDDODRA, DRAS, DR/MDR
Purpose of consultation	Presentation of the mission's objective
Site visits	Site visits were organised with the populations to assess the impacts of climate change in the oases of Oued de Rachid, Dakhlet Mabrouk, Voum daar, Iriji, the palm groves of Taoujeft, Hadi El Rassoul, Tweimiritt, Tarva and Ajar. The team visited the market garden of the Rachid cooperative, recycling activities and the ruins of the previous city of Rachid.
Main discussion points	
<b>Preliminary findings:</b> The key climate related hazards impacting the local communities' development is the oases drying up because of a shortage of water as well as the advancement of sand dunes.	
<b>Local knowledge on climate change and associated constraints:</b> <ul style="list-style-type: none"> <li>• There have been successive droughts since 1960, which have increased in frequency and severity.</li> <li>• Quick encroachment of sand dunes and the silting of the Rachid.</li> <li>• Water deficit during the heat waves period (in the months of May–June).</li> </ul>	

##### April 2022

**Table 15.** Summary of Rachid hub consultation 2.

Rachid hub: Stakeholder consultation 2	
Date	10 April 2022
Location	The commune of Rachid (part of the moughataa of Tidjikja) in the premises of the municipality,
Attendees	The deputy mayor of the municipality, and representatives from the community, producers' associations and civil society. See Appendix 2 for further details.
Purpose of consultation	Collect data towards the development of the full funding proposal, ascertain the main impacts of climate change on the ecosystems, natural resources, and the livelihoods of the target population, and collect information on past and ongoing local climate change adaptation initiatives
Main discussion points	
<b>Main climate change impacts identified:</b> <ul style="list-style-type: none"> <li>• depletion of the surface water table which negatively impacts date production and the supply of drinking water;</li> <li>• the declining hydrological regime of the <i>wadis</i>, which feed the oases, negatively impacts palm trees and crops behind the dams – which are an important source of food and income;</li> <li>• the increasing depth of water tables in pastoral areas and the absence of pastoral wells poses challenges to exploit the pastures, which are essential for the pastoral livestock breeders; and</li> <li>• increasing desertification leading to the siltation of oases, dwellings, and socio-economic infrastructure (particularly on the Atar–Tidjikja road).</li> </ul>	



Stakeholders stated that the abovementioned impacts, combined with the impacts of COVID-19 pandemic, have negatively impacted both the natural environment and their living conditions. The stakeholders mentioned that very few initiatives have been undertaken by community members in response to these changes. However, interventions have been carried out by the state and have had a positive impact on the living conditions of these local communities. These interventions included the rehabilitation of dams which has increased water availability for cereal cultivation. Contrastingly, the introduction of *Prosopis* as a fast-growing species for the biological fixation of dunes in areas of agricultural production — particularly to protect palm groves against silting — has negatively impacted indigenous plant species resulting from the competition for water. The stakeholders have stated their objectives for the *Prosopis* plant to be completely eradicated from the commune.

Stakeholders stated that projects should focus on the financing of medium- and long-term investment projects to enable the sustainable use and preservation of natural resources. This includes the construction and/or rehabilitation of dams, the drilling of pastoral wells and the construction of sills.

Similar to the Aoujeft hub meetings, income-generating activities for women and youth cohorts need to be established, financed, and managed, to avoid a rural exodus, while waiting for the benefits of the adaptation interventions to accrue.

It was also noted that projects should introduce adequate interventions to protect socio-economic infrastructure and housing from sand inundation without impacting food and cash crops.

Stakeholders also identified the following interventions that, if funded, could assist in reducing the impacts of climate change and positively impacting communities.

**Stakeholders' examples of potential interventions:**

- The weirs in the Rachid *wadi*: similar to the other sites, several palm groves are located on this *wadi* and experience severe water shortages. This *wadi* is 30-km long and has several productive palm groves. The lack of run-off water from the catchment areas is quickly dispersed across the course of the *wadi*, resulting in limited infiltration to recharge the surface water table. The construction of sills is being implemented experimentally to reduce surface water flow rate and enable water infiltration deep into the water table, thereby increasing recharge. The sills have the advantage of not impacting the availability of water in downstream areas. Stakeholders view this intervention as a beneficial tool to safeguard the palm groves, with ~25 sills enabling infiltration and the subsequent protection of palm groves against drying up.
- The reforestation of the Hssey Lgara-Touajil road axis: *Prosopis* is a fast-growing species adapted to the driest environments. As a result, the meeting participants propose its use for the protection of infrastructure and dwellings situated a considerable distance from the agricultural production zones. The Hssey Lgara - Touajil road is a model site for this type of intervention as it contributes to the connectivity between several production areas.
- The mechanical fixing of dunes to protect the Rachid oasis: this technique is used to combat the threat posed by the siltation of agricultural areas — particularly oases — and advantageously uses minimal water. The stakeholders proposed to adopt mechanical fixation by clayey. The adoption of this technique is further motivated by the availability of palm leaves in the oasis environment.
- The fencing of the Moutboul dam: several hundred families are supported by agriculture that takes place behind this dam. However, in the absence of a barrier to prevent livestock from accessing this area, the agricultural productivity of this area has been negatively impacted. The stakeholders state that this dam is considered as one of the most important investments in the wilayah of Tagant.
- The El Khatt dam: the area adjacent to the Adrar and Tagant plateaus is characterised by highly productive *graras* with rich soil. However, given the scarcity of run-off water, dams need to be built to capture the water and enable for infiltration. Earthen dykes have been an effective solution because of how small the slopes are. The stakeholders proposed the El Khatt dyke as a representative model for this type of project.
- Pastoral wells in the pastoral area of El Khatt: apart from agricultural activities in the oasis and in the *graras*, the commune of Rachid is dependent on livestock breeding. This livelihood activity, in a normal rainfall year, significantly contributes to food security and provides a source of income for the breeders in the commune. The scarcity of pastures and the absence of watering points for animals threatens the viability of this activity. There are a few areas of productive pastures remaining, which are rich in minerals and nutrients that are vital for livestock, but the limited water points hinder the potential to exploit them.

More details on the abovementioned interventions can be found in Appendix 3 of this report.

**February–March 2023**

**Table 16.** Summary of Rachid hub consultation 3.

<b>Rachid hub: Stakeholder consultation 3</b>	
Date	20 February 2023
Location	Rachid
Activities	Meeting with community members in Rachid commune
Attendees	Appendix 5
<b>Main discussion points</b>	
<ul style="list-style-type: none"> <li>All administrative representatives and community members are ready and willing to participate in the project to ensure success in combatting desertification.</li> <li>Capacity-building and training activities are needed for the population; need to learn how to implement <i>novel</i> activities.</li> <li>According to the stakeholders, their order of priorities is as follows: i) sand inundation; ii) water; and iii) agriculture.</li> <li>The population seek a change in their current scenario.</li> <li>For the success of the project, it is insufficient to sub-contract external people to implement activities because in the past, government projects have handed over responsibility to external people who are unfamiliar with the region and local challenges.</li> <li>In this project, local beneficiaries should be in control.</li> <li>Water access is a major challenge. There is enough arable land but not enough water to practice sufficient agriculture.</li> <li>Palm trees are important for income generation; however, most groves are affected by drought.</li> <li>Community members do not want to leave Rachid — they are proud of their commune and want to see real benefits of the project. However, at present, many people are forced to leave by severe climate conditions (rural exodus).</li> <li>Emphasis placed on using a <b>participatory approach</b>.</li> <li>Proposal for coordination committees – members should be elected based on their experience with different project components — water, sand inundation and agriculture — and different divisions can then be established within commune-level CTCs.</li> <li>Important project activities to consider in this pole: <ul style="list-style-type: none"> <li>reforestation and land rehabilitation;</li> <li>butane gas for income generation and access to energy;</li> <li>installation of water infrastructure, small dams, reservoirs, and cisterns;</li> <li>awareness raising for management of communal resources;</li> <li>agricultural diversification; and</li> <li>infrastructure to protect crops from livestock browsing/grazing.</li> </ul> </li> <li>There is an oasis in this commune, however, it has been severely impacted by drought.</li> </ul>	
<b>Primary topics and proposed activities to address constraints</b>	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The coordination mechanism of the project activities will be organised via:</p> <ol style="list-style-type: none"> <li>1. The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>2. Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ol>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>Women's cooperatives that will have to practice the gas financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<ul style="list-style-type: none"> <li>curb silting that threatens the lives of residents and their property;</li> <li>protection of date palm crops, which are the areas where market gardening is also practised;</li> <li>rehabilitate and create water points and water conservation infrastructure (<i>inter alia</i> dams, thresholds, retention basins); and</li> <li>rehabilitate and protect rainy crop areas (<i>inter alia</i>, Elkhat, Oum Tboul, and Lehraj)</li> </ul>

Climate-resilient agriculture and diversified agricultural livelihoods	The palm crops grown by these populations are resilient to climate change. Resilient crop diversification is needed after farmers are given training and more cost-effective tools.
Investing in water collection and conservation measures	As is the case elsewhere, the sources of investment are limited to the regional development fund and the national counterpart of the State budget that are likely to be invested there.

**Table 17.** Summary of Rachid hub consultation 4

Rachid hub: Stakeholder consultation 4	
Date	21 February 2023
Location	Tidjikja
Activities	Meeting with <i>Wali</i> of Tagant
Attendees	<i>Wali</i> of Tagant, National Consultant and project development team
Main discussion points	
<ul style="list-style-type: none"> <li>• Drought and sand inundation are the biggest problems in Tagant.</li> <li>• The area is characterised by palm date production; however, the industry is badly affected by drought.</li> <li>• Sand dunes are silting up the roads and limiting market access.</li> <li>• Water is a major limiting factor in the area.</li> <li>• Women's cooperatives are very important and should be a focus for the project.</li> </ul>	

**Table 18.** Summary of Rachid hub consultation 5

Rachid hub: Stakeholder consultation 5	
Date	21 February /2023
Location	Tidjikja
Activities	Meeting with administrative representatives in Tagant and Tidjikja
Attendees	Appendix 5
Main discussion points	
<ul style="list-style-type: none"> <li>• Plan to combat desertification, particularly siltation of roads and infrastructure, is needed.</li> <li>• Water is a major priority in the area, and without improved access to water, all other project activities will fail.</li> <li>• Area needs a combination of water extraction/capture methods – such as dams, drilling and wells.</li> <li>• Hydrogeological studies are needed to identify sites for the installation of water infrastructure.</li> <li>• The population practices many different types of agriculture – rainfed and irrigated. Potential for the introduction of <b>drip irrigation</b> exists but equipment would be required for this.</li> <li>• Solar pumps are needed to bring groundwater to the surface.</li> <li>• There is a need to focus on conserving palm groves and maintaining productivity in the future.</li> <li>• A participatory approach is very important.</li> <li>• Proposal for coordination committees: committees established at village-level, however, central services from wilayah level should be included in the coordination structure to provide technical support (such as the Director of water).</li> <li>• <b>AGPO</b> committees have been very successful — can draw on their best practices and lessons learned.</li> <li>• Local population should elect members of committees; however, they should be supervised by members of government administration.</li> <li>• <b>PARSACC project</b> introduced water measures, however, these were unsuccessful.</li> <li>• There is a water map for Tagant, and the project should request access to and utilise this.</li> <li>• Flow of information needs to work in two directions: bottom-up AND top-down.</li> <li>• Water is the biggest factor contributing to rural exodus, as people cannot practice agricultural activities without it. <b>Water should be a priority</b> as all other activities depend on its availability.</li> <li>• The <b>sustainability</b> of projects beyond the implementation period is of high importance; it is essential to establish commune-level <b>funds or grants facilities</b> — managed by special committees — to enable continuation of successful activities beyond the project timeline.</li> <li>• In the past, projects have failed to yield real benefits because of small markets for agricultural goods and difficulty in transporting produce.</li> <li>• There is a need to establish nurseries for dune fixation.</li> </ul>	
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>In Tidjikja, as is the case elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of all communes (CTCs) chaired by the DREDD and supported at the communal level by others.</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul>

Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>The women's cooperatives that will have to practice the IGAs financed by the project will be able to direct a portion of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure on vegetation via the substitution of wood by gas and the creation of selected cereal banks.</li> <li>The municipality has specified the Tarev area as a priority for reforestation and once practiced can serve as a tourist attraction for the city.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<ul style="list-style-type: none"> <li>curb silting that threatens the lives of residents and their property;</li> <li>protection of date palm crops, which are the areas where market gardening is also practiced;</li> <li>rehabilitate and create water points and water conservation infrastructure (<i>inter alia</i>, dams, thresholds, retention basins);</li> <li>rehabilitate and protect rainy crop areas (<i>inter alia</i> Derroum, Iderch, Elghouba, and Wad Elbarka); and</li> <li>Create slowdown thresholds at the level of the bat ha of tidjikja and Wad Edboulgui.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	The palm crops grown by these populations are resilient to climate change. There may be a need to diversify resilient crops after training farmers and equipping them with more cost-effective tools.
Investing in water collection and conservation measures	Like other municipalities, the sources of investment are limited to the regional development fund and the national counterpart of the State budget that are likely to be invested there.

**Table 19.** Summary of Rachid hub consultation 6

Rachid hub: Stakeholder consultation 6	
Date	21 February 2023
Location	Nimlane
Activities	Meeting with community members in Nimlane commune
Attendees	Appendix 5
Main discussion points	
<ul style="list-style-type: none"> <li>Poverty, desertification, and rarity of water are major problems in this commune.</li> <li>A range of different activities is needed to improve the quality of life of community members.</li> <li>Palm trees in this region are severely impacted by drought.</li> <li>Water access is the greatest priority, for drinking and agricultural purposes.</li> <li>There are 37 villages in the commune.</li> <li>Small dams are needed to improve water storage, as existing dams have aided in this regard.</li> <li>Agriculture, livestock husbandry and trade of butane are the main livelihood activities.</li> <li>Groundwater levels are very low because of limited rainfall in this region. Five years without rainfall has created major water access challenges.</li> <li>The population is unable to save water because demand exceeds availability.</li> <li>Dams are not useful if it does not rain, necessitating the exploration of other methods of water extraction.</li> <li>Women's cooperatives are needed to diversify sources of income and alleviate extreme poverty.</li> <li>The target population drinks intermittently due to limited water availability (rationing).</li> <li>To resolve other problems – regarding health, food production, dune fixation – the water problems need to be addressed <b>first</b>.</li> <li>Sand inundation is taking over living spaces.</li> <li><b>PDDO</b> had some success with dune fixation (<i>prosopis</i> and local species planted on ~10 ha), however, this project has been completed.</li> <li><b>MEDD</b> project was also introduced to fight sand inundation in 2017.</li> <li>Local seedlings died as a result of drought.</li> <li>Irrigation technologies are needed in the area.</li> </ul>	

Education and stewardship are needed to ensure project sustainability in the absence of administrative support from wilayah administration and each village should have a local committee — <b>replicate AGPO</b> — to ensure that knowledge extends from wilayah-level to local-level.	
<b>Main topics and proposed activities to address constraints</b>	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>In Nímlane, as in the case elsewhere the management instances are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of a coordination committee at the hub level and a second at the municipal level for monitoring (CTC).</li> <li>• The management of each intervention site of the project by a local committee present on the site which reports to the communal committee.</li> </ul>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• The women's cooperatives that will have to practice the gas financed by the project will be able to direct a portion of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure on vegetation via the substitution of wood by gas and the creation of selected seed banks.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<ul style="list-style-type: none"> <li>• curb silting that threatens the lives of residents and their property;</li> <li>• protection of date palm crops, which are the areas where market gardening is also practised;</li> <li>• rehabilitate and create water points and water conservation infrastructure (<i>inter alia</i> dams, thresholds, retention basins); and</li> <li>• rehabilitate and protect rainy crop areas (<i>inter alia</i> Wad Nímlan, Aghlambit, Ezouira, and Nbat)</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	The palm crops grown by these populations are resilient to climate change. There may be a need to diversify resilient crops after training farmers and equipping them with more cost-effective tools.
Investing in water collection and conservation measures	Like other municipalities, the sources of investment are limited to the regional development fund and the national counterpart of the State budget that are likely to be invested there.

#### 4.2.3. Tamchekett hub consultations

##### March–April 2021

**Table 20.** Summary of Tamchekett hub consultation 1.

<b>Tamchekett hub: Stakeholder consultation 1</b>	
Date	31 March–03 April 2021
Location	Tamchekett hub located in the wilayah du Hodh El Gharbi
Attendees	Mayor of Tamchekett, the hakem of Hodh El Gharbi and several technical services representatives
Purpose of consultation	Confirmation that the mission would take place in the best possible conditions. All the collection tools were submitted to the population and resource persons.
Site visits	The crocodile pond, the Médina borehole, the Touéimirit dam, and the women's market garden where the PARSACC has invested in capacity building with the women of Tamchekett (Focus Group Women of Tamchekett) via the implementation of the project "Improving community resilience and food security to the adverse effects of climate change in Mauritania".
<b>Main discussion points</b>	
<p><b>Preliminary findings:</b> There are many problems related to climate change – such as heat waves – however, rising salinity and silting up are the most acute and were the ones mentioned the most.</p> <p><b>Local knowledge on climate change and associated constraints:</b></p> <ul style="list-style-type: none"> <li>• Silting of <i>wadís</i> due to lengthy droughts and strong winds.</li> <li>• Water deficit during the heat waves period (in the months of May–June).</li> </ul>	

- Humid zones have disappeared due to climate hazards – oued Barka, Ould Ragagi, Hachim, Eguerj Lehbass, Boutekta, Boutekta, Lehat, Fiiya.

## November 2021

**Table 21.** Summary of Tamchekett hub consultation 3.

Tamchekett hub: Stakeholder consultation 3	
Date	19 November 2021
Location	Tamchekett commune
Activities	Meeting with community representatives from Tamchekett (20 people including 8 women)
Attendees	Appendix 1
Purpose of consultation	Presentation of mission objectives and additional collection of data
Main discussion points	
<b>Main climate change impacts identified:</b> <ul style="list-style-type: none"> <li>• a drastic reduction in rainfall;</li> <li>• the disappearance of certain plant species;</li> <li>• the migration of bird species and crocodiles, which has led to a small number of crocodiles (two or three) remaining in comparison to the dozens that used to inhabit the area;</li> <li>• a reduction in cultivated areas attributed to low flooding of arable land;</li> <li>• the silting up of the bed of the <i>wadi</i> of Tamchekett; and</li> <li>• the village of Tamchekett was once bordered by vegetation is now threatened by silting that has already engulfed entire neighbourhoods.</li> </ul>	
<b>Stakeholders' perceptions on how their way of life has changed:</b> <ul style="list-style-type: none"> <li>• The main livelihood practices include the use of sorghum, cowpea, watermelon, and other crops that grow behind dams and in the shallows, as well as livestock supplements.</li> <li>• Dam and shallow areas are no longer flooded, with a reduction in yields from erosion and silting.</li> <li>• Reduced pastoral activity with the subsequent effect of compulsory transhumance, as well as a lack of grazing, no longer allows the exploitation of livestock by-products.</li> <li>• Water accessibility from sumps previously obtained at a depth of 10 m is now only available at a depth of 70 m.</li> <li>• The Tamouret bordering the village has become dry and partly sandy, with a substantial loss in vegetation cover and the complete transformation of the ecosystem.</li> </ul>	
<b>Stakeholders' examples of potential solutions:</b> <ul style="list-style-type: none"> <li>• reforestation using indigenous plant species to combat silting. This solution will also enable the regeneration of the natural environment by restoring ecosystems of the Tamouret;</li> <li>• establish the development of the Tamouret to protect it against human activities;</li> <li>• rehabilitate dams and shallows to control runoff water, which will contribute towards increased acreage and crop yields; and</li> <li>• increase forms of income generation by establishing income-generating activities as a response to the drought induced poverty.</li> </ul>	

## April 2022

**Table 22.** Summary of Tamchekett hub consultation 2.

Tamchekett hub: Stakeholder consultation 2	
Date	11 April 2022
Location	Tamchekett (Hodh El Gharbi wilayah) in the administrative area of the moughataa of Tamchekett. Further details provided in Appendix 2
Attendees	The hakem of the moughataa, the MEDD Regional Delegate, and civil society representatives
Purpose of consultation	Collect data towards the development of the full funding proposal, ascertain the main impacts of climate change on the ecosystems, natural resources, and the livelihoods of the target population, and collect information on past and ongoing local climate change adaptation initiatives
Main discussion points	
<b>Main climate change impacts identified:</b> <ul style="list-style-type: none"> <li>• climate-change induced droughts and desertification that are negatively impacting livelihoods; and</li> <li>• lack of climate change adaptation interventions and land development projects.</li> </ul>	



Similar to the Rachid hub, the stakeholders have mentioned that very few initiatives have been undertaken by local communities in response to these changes. However, interventions – such as the rehabilitation of dams which have increased water availability for cereal cultivation – have been carried out by the state, positively impacting the living conditions of these local communities. Additionally, this intervention also increased the supply of drinking water as well as water availability for livestock. However, stakeholders mentioned that these interventions remain insufficient for them to be fully resilient to the impacts of climate change, and that a two-dimensional strategy needs to be adopted to build their resilience. The first dimension of this strategy involves reversing the climate change-induced impact on natural ecosystems, with the stakeholders suggesting targeted interventions to combat dune advancement and regenerate the vegetation cover. The second dimension of this strategy involves spatial planning and the sustainable use of natural resources. Additionally, and similar to the Rachid hub, the stakeholders mentioned that projects should focus on the financing of medium- and long-term investment projects for the sustainable use and preservation of natural resources. This would involve the construction and/or rehabilitation of dams, the drilling of pastoral wells and the construction of sills. Stakeholders also stated the need for projects to introduce adequate interventions to protect socio-economic infrastructure and housing from sand inundation without impacting on food and cash crops. Moreover, and similar to the other hub meetings, income-generating activities for women and youth cohorts need to be established, financed, and managed, to avoid a rural exodus, while waiting for the benefits of the adaptation interventions to accrue.

Stakeholders also identified the following interventions that, if funded, could assist in reducing the impacts of climate change and positively impacting local communities.

#### Stakeholders' examples of potential interventions:

- The weirs on the Toueïmiret *wadi*: this *wadi* consists of a vast catchment area which typically drains a significant quantity of water at very high flow rates, leading to soil degradation via the process of erosion. This *wadi* stretches over dozens of kilometres and requires structures to reduce the water flow to increase water infiltration.
- The reforestation of the north-east zone of the town of Tamchekett to prevent sand inundation: this intervention would provide protection from desertification and employment opportunities.
- The fixation of the dunes of Rkheïmiya (commune of Radhi): the threat posed by silting in agricultural areas, palm groves and dam basins requires a protection scheme that uses minimal water. For this purpose, stakeholders proposed the adoption of mechanical fastenings of wattle and daub. The availability of palm leaves and other species encourages the adoption of this technique at this site.
- The Tewmiyat, Anzay and Lgrayer dykes (Commune of Gaïet Teydouma): these are small settlements that depend on the exploitation of dykes scattered in the tributaries of the watershed in a large *wadi* of the Affolé. These dykes are of vital importance for the food security of these inhabitants as they constitute their main source of food production.
- The Toueïmiret dam: this intervention focuses on repairing a dam that provides ecosystem services that are relied on by many farmers. The dam needs to be recalibrated along its entire length and a 30 m cemented stone outlet structure needs to be constructed because the current weir and outlet structure are deteriorating.
- The pastoral wells in the pastoral zone of the Mabrouk commune: apart from agricultural activities in the oasis, the Tamchekett moughataa rely on livestock farming. Without the impacts of climate change, this livelihood practice typically contributes significantly to the food and nutritional security of local communities and constitutes a source of income for the community of breeders. The absence of sufficient watering points for livestock in some pastoral areas is threatening this activity, despite the high nutritional quality of the pastures. However, because of limited reliable data pertaining to *inter alia* hydrogeological surveys, the stakeholders recommend that surveys be carried out to identify potential sources and drill pastoral wells.

More details on the abovementioned interventions can be found in Appendix 3 of this report.

## February–March 2023

**Table 23.** Summary of Tamchekett hub consultation 4.

Tamchekett hub: Stakeholder consultation 4	
Date	02 March 2023
Location	Mabrouk
Attendees	Deputy Mayor, Representatives: farmers, ranchers, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Mabrouck is an agropastoral commune with pastoral dominance. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> </ul>



	<ul style="list-style-type: none"> <li>Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p>Are the site committees that receive payments for ecosystem services and decide on their use in coordination with the communal committees and under the supervision of the CTC and the control of the administrative authorities?</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation	<ul style="list-style-type: none"> <li>The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>prevent silting;</li> <li>raise awareness about the positive effects of climate change adaptation;</li> <li>create mechanisms for retaining and conserving water;</li> <li>introduce a farming system adapted to climate change which is also more profitable (intensive);</li> <li>exploit animal by-products (inter <i>alia</i> milk, skins, and hooves);</li> <li>restore land degraded by retention systems (stone barriers and/or slowdown thresholds);</li> <li>multiply water points on pastoral routes to avoid pressure on water-provided areas.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>Mabrouk;</li> <li>Chiva;</li> <li>Ehel Youba;</li> <li>Mata Moulana;</li> <li>Eidwa; and</li> <li>the lemhed area on the track linking Mabrouk to Tamchekett.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>introduce market gardening;</li> <li>introduce tools that increase profitability;</li> <li>create containment infrastructure;</li> <li>Intensive farming techniques and exploitation of its by-products; and</li> <li>create the selected seed banks.</li> </ul> <p>The hydraulic infrastructures to be rehabilitated or created are:</p> <ul style="list-style-type: none"> <li>The dam of Noudach, Mabrouk, Tougba, and Ghlig saleck (Elbahbah); and</li> <li>The depression areas of Dreiguya, Ignine, Elveyat and Graret Elmabrouk.</li> </ul>
Investing in water collection and conservation measures	Provide existing water points with a means of solar dewatering and create additional points in Mabrouk and Noudach.

**Table 24.** Summary of Tamchekett hub consultation 5

Tamchekett hub: Stakeholder consultation 5	
Date	02 March 2023
Location	Tamchekett
Attendees	Deputy Mayor, Representatives: farmers, ranchers, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	

Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Tamcheket is an agropastoral commune. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p>Are the site committees that receive payments for ecosystem services and decide on their use in coordination with the communal committees and under the supervision of the CTC and the control of the administrative authorities?</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• prevent silting;</li> <li>• raise awareness about the positive effects of climate change adaptation;</li> <li>• create mechanisms for retaining and conserving water;</li> <li>• intensify market gardening;</li> <li>• introduce a farming system adapted to climate change which is also more profitable (intensive);</li> <li>• exploit animal by-products (<i>inter alia</i> milk, skins, and hooves);</li> <li>• restore land degraded by retention systems (stone barriers and/or slowdown thresholds); and</li> <li>• multiply water points on pastoral routes to avoid pressure on water-provided areas.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>• Tamchekett;</li> <li>• Touimiret;</li> <li>• Maham; and</li> <li>• Rag Tayar.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>• introduce market gardening;</li> <li>• introduce tools that increase profitability;</li> <li>• create containment infrastructure;</li> <li>• intensive farming techniques and exploitation of its by-products; and</li> <li>• create the selected seed banks.</li> </ul> <p>The hydraulic infrastructures to be rehabilitated or created are:</p> <ul style="list-style-type: none"> <li>• Touimiret, Maham, and Rag Tayar; and</li> <li>• the Tamouret of Tamcheket.</li> </ul>
Investing in water collection and conservation measures	<p>Provide existing water points with a means of solar dewatering and create additional points in Tamchekett, Touimiret, and Maham.</p>

**Table 25.** Summary of Tamchekett hub consultation 6

Tamchekett hub: Stakeholder consultation 6	
Date	03 March 2023
Location	Gaet Teidoum
Attendees	Deputy Mayor, Representatives: farmers, ranchers, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	

Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Gaet Teidoum is an agropastoral (predominantly agricultural) commune where a recurrent vulnerability is affected. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p>Are the site committees that receive payments for ecosystem services and decide on their use in coordination with the communal committees and under the supervision of the CTC and the control of the administrative authorities?</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• prevent silting;</li> <li>• raise awareness about the positive effects of climate change adaptation;</li> <li>• create mechanisms for retaining and conserving water;</li> <li>• intensify market gardening;</li> <li>• introduce a farming system adapted to climate change which will also be more profitable (intensive);</li> <li>• exploit animal by-products (<i>inter alia</i> milk, skins, and hooves);</li> <li>• restore land degraded by retention systems (stone barriers and/or slowdown thresholds); and</li> <li>• multiply water points.</li> </ul> <p>The sites in need of restoration in this municipality is the locality of Gaet Teidoum, whose school is threatened.</p>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>• introduce market gardening;</li> <li>• introduce tools that increase profitability;</li> <li>• create containment infrastructure;</li> <li>• intensive farming techniques and exploitation of its by-products; and</li> <li>• create the selected seed banks.</li> </ul> <p>The hydraulic infrastructures to be rehabilitated or created are: Barguetani, Legleubat, Gaet lebgar, Eguerj Lahajar, Gaet teidoum and Gaet Lemhar</p>
Investing in water collection and conservation measures	<p>Provide existing water points with a means of solar dewatering and create additional points in Eguerj Lahjar, Legraiva, Bargatani, Mreimida, and lemghaimdha.</p>

#### 4.2.4. Néma hub consultations

March–April 2021

**Table 26.** Summary of Nema hub consultation 1.

Nema hub: Stakeholder consultation 1	
Date	03–05 April 2021
Location	Néma hub located in the wilayah of Hodh El Charghi

Attendees	The <i>Wali</i> of Hodh El Charghi region, delegates, and a group of local community members
Purpose of consultation	Explanation of the data collection objectives. The authorities understood the objective of the mission and proposed a list of villages to be visited. All the collection tools were submitted to the population and resource persons for their feedback.
Site visits	The Cheikh Tourad dam, the Leghligue palm groves, the pastoral wells in the basin, the sand encroachment of the palm trees on the right side of the riverbank; and the pastoral areas of Achemim and Djaguenaye.
<b>Main discussion points</b>	
<p><b>Main climate change impacts identified:</b> Following several discussions on the Néma pole, three places were proposed.</p> <p>All the data collection tools were used in Néma; however, certain interviews (such as the women's focus groups) could not be carried out, partially due to the travelling context as these areas are 'opposite' and the organisation of these meetings with the communities would take a considerable amount of time.</p> <p><b>Preliminary Findings:</b> Degradation of the environment and living conditions of the population resulted in a massive exodus from this area to the country's major urban centres and abroad. The greatest pockets of poverty in Mauritania – Aftout, Affolé, and the border with Mali – lie in this area. The limited accessibility of dams to local communities traditionally using the land leads to frequent land conflicts. Few cultivation techniques (non-compliance with technical itineraries prescribed by research) and rangeland management practices. Limited agricultural development to protect fragile soils and conserve its moisture content, as well as inadequate advisory support and supply of agricultural equipment to farmers.</p> <p><b>Local knowledge on climate change and associated constraints:</b></p> <ul style="list-style-type: none"> <li>• Scarcity and irregularity of rainfall.</li> <li>• Silting of hydraulic assets and agricultural plots.</li> <li>• Increased frequency of bush fires.</li> </ul>	

## April 2022

**Table 27:** Summary of Néma hub consultation 2.

<b>Nema hub: Stakeholder consultation 2</b>	
Date	12 April 2022
Location	Néma hub (Hodh El Chargui wilayah), held in the premises of the Regional Delegation of the MEDD of Hodh El Chargui
Attendees	The Regional Delegate of the MEDD, community representatives and civil society stakeholders (further details provided in Appendix 2)
Purpose of consultation	Collect data towards the development of the full funding proposal, ascertain the main impacts of climate change on the ecosystems, natural resources, and the livelihoods of the target population, and collect information on past and ongoing local climate change adaptation initiatives
<b>Main discussion points</b>	
<p><b>Main climate change impacts identified:</b></p> <ul style="list-style-type: none"> <li>• resulting from climatic upheavals which have led to regular cyclical droughts, a scarcity of water resources (including for human demand in certain areas) and a reduction in vegetation cover; and</li> <li>• limited land-use planning programmes, with the moughataa having a rich natural potential that has not been developed.</li> </ul> <p>These local communities and their shortage of financial resources, inaccessibility to decision-making centres, and limited access to information, tend to resort to older and more archaic adaptation strategies – such as migration. However, state interventions have been implemented in response to this, and have assisted in areas of water control for agricultural use, the supply of drinking water to large urban centres and the effects of these projects on the recharging of the aquifers. These state interventions included the construction and/or rehabilitation of dams, accessing water supply from the Dhar aquifer, combating desertification. However, the stakeholders suggest that these investments are insufficient to exploit the full agro-pastoral potential that this zone offers.</p>	

The stakeholders stated that to build the resilience of the local communities and ecosystems in the Nema hub, a two-dimensional strategy that is similar to the one proposed in Rachid should be adopted.

Stakeholders also identified the following interventions that, if funded, could assist in reducing the impacts of climate change and positively impacting local communities.

**Stakeholders' examples of potential interventions:**

- 'Slowdown thresholds' in the N'Gadi and Lebheïra zones of Néma: it is a *wadi* of ~2 km in length covering the extent of the slope of the N'Gadi and Lebheïra zones, which feed into the palm plantation of Néma. Two sills to be constructed with an average length of 500 m. This will assist in enhancing the recharge of the water table.
- Reforestation in the town of Noual: this commune, located in the northern semi-desert part of the moughataa, is prone to frequent sand inundation, attributable to strong and dunes that are constantly moving. The town of Noual, which is the capital of the commune, is almost buried by the sand, necessitating urgent action to save it. Reforestation with *Prosopis* has been proposed as the best option that would result in a quick response.
- Fixing the dunes of Oum Avnadech: the village of Oum Avnadech is at the northern boundary of the area adjacent to the 150 mm isohyet line. The threat of siltation could compromise the inhabitant's entire agricultural production. Mechanical fixation is necessary to slow down sand advancement and protect crops.
- Mendes Néma dam: this is an old site on where a dyke has been built to serve the needs of the Hope Road construction site. This dam has subsequently been used for agricultural production by inhabitants situated on the outskirts of Néma. Resulting from the hydrological regime of the basin, the dyke has failed, despite the significance of this area for the farmers' food security. It is necessary to rehabilitate this structure by transforming it into a dam accompanied by a spillway and draining structure.
- A borehole for fodder crops in Melgue Teïssir (Mabrouk commune): this is an innovative technique to introduce and encourage intensive livestock farming. It is also relevant to the area as the wilayah of Hodh El Chargui is essentially pastoral. This technique involves drilling a borehole fully equipped to irrigate a basin of 10 ha, from which forage crop will be grown (such as alfalfa).

More details on the abovementioned interventions can be found in Appendix 3 of this report.

## February–March 2023

**Table 28.** Summary of Nema hub consultation 3.

Néma hub: Stakeholder consultation 3	
Date	25 February /2023
Location	Noual
Attendees	The Mayor, Representatives: farmers, herders, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Noual is predominantly pastoral with certain agricultural activities. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p><b>Suggestion:</b> The site committees receive payments for ecosystem services and decide on their use in coordination with the communal committees, under the supervision of the CTC and the control of the administrative authorities.</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>

Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• curb silting;</li> <li>• raise awareness around the positive effects of climate change adaptation;</li> <li>• create mechanisms for retaining and conserving water;</li> <li>• introduce resilient crop varieties and equip farmers with productive tools;</li> <li>• introduce a farming system adapted to climate change which is also more profitable (intensive);</li> <li>• restore land degraded by restraint systems (stone barriers); and</li> <li>• multiply water points on pastoral routes to avoid pressure on water-provided areas.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>• Ehel Samba;</li> <li>• Hseyat Edwamess;</li> <li>• Ehel Sneini;</li> <li>• Weizen;</li> <li>• Echamya; and</li> <li>• Bou Ech.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>• introduce early sorghum varieties (3 months cycle);</li> <li>• introduce tools that increase profitability;</li> <li>• rehabilitate the Elbeidha, Mbeirika and Weizen dams; and</li> <li>• introduce and encourage market gardening.</li> </ul>
Investing in water collection and conservation measures	<ul style="list-style-type: none"> <li>• create AEP related to the conduct of the dhar for villages located on the road of hope;</li> <li>• create pastoral water points and water reservoirs; and</li> <li>• create boreholes in Hsey Dwamess and Mbeirika.</li> </ul>

**Table 29.** Summary of Nema hub consultation 4.

<b>Néma hub: Stakeholder consultation 4</b>	
<b>Date</b>	26 February 2023
<b>Location</b>	Oualata
<b>Attendees</b>	The Mayor, Representatives: farmers, herders, civil society organisations (see list in Appendix 5)
<b>Primary topics and proposed activities to address constraints</b>	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Oualat is a semi-urban settlement with certain agricultural activities. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul> <p><b>Suggestion:</b> The site committees receive payments for ecosystem services and decide on their use in coordination with the communal committees, under the supervision of the CTC and the control of the administrative authorities.</p>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>



Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• curb silting;</li> <li>• raise awareness around the positive effects of climate change adaptation;</li> <li>• create mechanisms for retaining and conserving water;</li> <li>• introduce resilient crop varieties and equip farmers with productive tools;</li> <li>• introduce a farming system adapted to climate change which is also more profitable (intensive);</li> <li>• restore land degraded by restraint systems (stone barriers); and</li> <li>• multiply water points on pastoral routes to avoid pressure on water-provided areas.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>• Kereye Elourch;</li> <li>• Oualata;</li> <li>• Tagouraret; and</li> <li>• Hsey Elghabra.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>• introduce early sorghum varieties (3 months cycle);</li> <li>• introduce tools that increase profitability;</li> <li>• introduce market gardening and encourage it in all these sites; and</li> <li>• rehabilitate the following dams: <ul style="list-style-type: none"> <li>○ Kereye Elourch;</li> <li>○ Oualata, Tagouraret;</li> <li>○ Hsey Elghabra;</li> <li>○ Choukretail;</li> <li>○ Essetrya and Archane; and</li> <li>○ Gleibat Ejmoue.</li> </ul> </li> </ul>
Investing in water collection and conservation measures	It is necessary to create pastoral water points in Kereiyat and on the Oualata - Tichit area (old caravan route where tourism can be developed).

**Table 30.** Summary of Néma hub consultation 5.

Néma hub: Stakeholder consultation 5	
Date	27 February 2023
Location	Jraiv
Attendees	The Mayor, Representatives: farmers, herders, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Jraiv is an agropastoral (predominantly agricultural) commune. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the gas financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• curb silting;</li> </ul>



conservation areas in communes	<ul style="list-style-type: none"> <li>raise awareness around the positive effects of climate change adaptation;</li> <li>create mechanisms for retaining and conserving water;</li> <li>introduce resilient crop varieties and equip farmers with productive tools;</li> <li>introduce a farming system adapted to climate change which is also more profitable (intensive);</li> <li>restore land degraded by restraint systems (stone barriers); and</li> <li>multiply water points on pastoral routes to avoid pressure on water-provided areas.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>Elmessyel;</li> <li>Sayle 2 (Saythe West);</li> <li>Sneiga;</li> <li>Chelkhet Elghar;</li> <li>EL AJNA; and</li> <li>ISSIL.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>introduce early sorghum varieties (3 months cycle)</li> <li>introduce tools that increase profitability</li> <li>introduce market gardening and encourage it in all these sites;</li> <li>intensive livestock farming techniques;</li> <li>create selected seed banks;</li> <li>introduce water basins at the flow points (<i>inter alia</i> Sayla, Issil, Lemsegma, and Hsey Elghabra); and</li> <li>rehabilitate the dams of: <ul style="list-style-type: none"> <li>Chelkhet Elghar;</li> <li>Ehel Jeddou;</li> <li>Ehel med Ghoulam;</li> <li>Legrein lahrach; and</li> <li>Jedda.</li> </ul> </li> </ul>
Investing in water collection and conservation measures	It is necessary to create water points in Sneiga and El Ajna, and water reserves in the bathas of Sayla, Jraiv, and Hsey Elghabra.

**Table 31.** Summary of Néma hub consultation 6.

Néma hub: Stakeholder consultation 6	
Date	28 February 2023
Location	N'beiketlahwach
Attendees	The Mayor, Representatives: farmers, herders, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Nbeiket Lahwach is pastoral, with timid agricultural attempts introduced by public action. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation	<ul style="list-style-type: none"> <li>The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the</li> </ul>

	climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.
Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• curb the silting that leads to the town being completely deserted;</li> <li>• raise awareness of the positive effects of climate change adaptation;</li> <li>• create mechanisms for retaining and conserving water;</li> <li>• introducing a farming system adapted to climate change which is also more profitable (intensive);</li> <li>• exploit animal by-products (<i>inter alia</i> milk, skins, and hooves);</li> <li>• restore land degraded by restraint systems (stone barriers); and</li> <li>• multiply water points on pastoral routes to avoid pressure on water points in towns.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>• Nbeiket Lahwach;</li> <li>• Nbeiket Elkori;</li> <li>• Elourch, Ezriba;</li> <li>• Polling Derwich;</li> <li>• Dhlím, lebtanine;</li> <li>• Iefoudha;</li> <li>• the Balick-lebtanine road; and</li> <li>• Hassi Tejekanet.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	To introduce resilience into the agricultural mechanism, it is necessary to: <ul style="list-style-type: none"> <li>• introduce market gardening;</li> <li>• introduce tools that increase profitability;</li> <li>• intensive farming techniques and exploitation of its by-products; and</li> <li>• create feed banks.</li> </ul>
Investing in water collection and conservation measures	Provide existing water points with means of solar dewatering and create additional points where there is also this need.

**Table 32.** Summary of Néma hub consultation 7.

Néma hub: Stakeholder consultation 7	
Date	01 March 2023
Location	Umvavadech
Attendees	The Mayor, Representatives: farmers, herders, civil society organisations (see list in Appendix 5)
Primary topics and proposed activities to address constraints	
Coordination platforms in target centres for the implementation and scaling up of climate change adaptation interventions	<p>The commune of Umvavadech is an agropastoral (predominantly agricultural) commune, where extreme poverty is recorded. Thus, it is a question of basing the sites on the surrounding villagers and, as elsewhere, the management bodies are defined via:</p> <ul style="list-style-type: none"> <li>• The creation of coordination committees at the level of each hub and a second at the commune level (CTC).</li> <li>• Each project intervention site should be managed by a local committee present on the site which reports to the communal committee.</li> </ul>
Sustainable fund flow mechanism to channel funds to increase investments in Ecosystem-based Adaptation.	<ul style="list-style-type: none"> <li>• The flows should always to be sought from the rent of the infrastructures that will be created by the project in addition to the orientation of the regional development fund and the counterpart of the project which will be provided for from the State budget.</li> <li>• The duplication of mechanisms will require the organisation of forums between the different municipalities of the wilayah where the cluster is located to exchange experience and launch good practices for investment in adaptation to climate change.</li> <li>• Women's cooperatives that will have to practice the IGAs financed by the project will be able to direct part of their income towards the climate change adaptation mechanism. Their activities can have an impact on this mechanism by reducing the pressure.</li> </ul>
Facilitate the restoration of community-managed conservation areas in communes	<p>To restore areas exploited by the population, it is necessary to:</p> <ul style="list-style-type: none"> <li>• curb silting;</li> <li>• raise awareness of the positive effects of climate change adaptation;</li> </ul>

	<ul style="list-style-type: none"> <li>• create mechanisms for retaining and conserving water;</li> <li>• introduce a farming system adapted to climate change which is also more profitable (intensive);</li> <li>• exploit animal by-products (<i>inter alia</i> milk, skins, and hooves)</li> <li>• restore land degraded by restraint systems (stone barriers); and</li> <li>• multiply water points on pastoral routes to avoid pressure on water points in nearby settlements.</li> </ul> <p>The sites requiring restoration in this municipality are:</p> <ul style="list-style-type: none"> <li>○ Ehel Elkori;</li> <li>○ Bir ehel Sidi beya;</li> <li>○ Elkeba;</li> <li>○ Ehel Khatar;</li> <li>○ Ehel Meni;</li> <li>○ Legwatite;</li> <li>○ Benemane ;and</li> <li>○ bir vali o/ Mbeirkat.</li> </ul>
Climate-resilient agriculture and diversified agricultural livelihoods	<p>To introduce resilience into the agricultural mechanism, it is necessary to:</p> <ul style="list-style-type: none"> <li>• introduce market gardening;</li> <li>• introduce tools that increase profitability;</li> <li>• create containment infrastructure;</li> <li>• intensive farming techniques and exploitation of its by-products; and</li> <li>• create selected seed banks.</li> </ul>
Investing in water collection and conservation measures	Provide existing water points with solar dewatering facilities and create additional points in Mberag and Iekrae Iakhdar.

#### 4.2.5. [Validation Workshop](#)

**Date:** 20 June 2023

**Venue:** Mauricentre Hotel, Nouakchott

Consultants from C4 EcoSolutions (project development team) presented the fully developed Funding Proposal and Annexes to various government stakeholders, NGOs and representatives from target communities. Next, working group discussions were held, during which stakeholders provided feedback on the proposed project outputs, activities and budget.

#### Proceedings

- Mr El Wavi (NDA) and Mr Bensada (UNEP) each gave opening remarks.
- The Interim Secretary General of the Ministry of Sustainable Development and the Environment (MEDD) made an opening speech
- Mr Bensada gave a presentation, during which a brief background and context to the project was given, including the process for selection of project sites.
- Mr Prayag, representing the project development team (C4ES), gave a PowerPoint presentation to present the project design and budget to stakeholders for feedback and input.
- Stakeholders were divided into working groups, with each one providing feedback on a single Output/Activity after an hour of discussion

**Table 33.** Division of Outputs/Activities among working groups

Group 1	Output 1.1.
Group 2	Activity 2.1.1.
Group 3	Activity 2.2.1.
Group 4	Activity 2.2.2.

#### Stakeholder questions and feedback during presentation

- **Question:** Why those sites in particular? Desertification is not only affecting these places.

**Answer:** There were lengthy responses from Mr Fall and Mr Sidoumo (national consultants), who explained that the project is targeting the desertification frontline and stopping it there, so that the 'downwind areas' are protected.

- Mr Bouhari (UNEP representative stationed in Mauritania) intervened and said the project design was very good.
- There was an interjection from a stakeholder belonging to the AGPO in Aoujeft
  - He said the Aoujeft was a strategic site for production
  - There are massive water reserves underground apparently, which if accessed could be sent to other parts of the country.
  - But the project must do other things in addition to climate change adaptation (co-benefits) — e.g., schools, good health infrastructure etc. as currently people are leaving the area, and if nobody lives there, then there's no point of implementing the project.
- Mr Fall (retired national consultant) stated that the Paradigm Shift Statement (If – Then – Because statement) should state that people who have previously left the target region will return if the project results are successful.
- **Question:** A stakeholder asked why the numbers presented in the budget didn't add up to USD22.5 million  
**Answer:** The response was that some of the money is allocated to PMC management fees, as well as GAP, M&E and ESMP implementation.
- **Question:** Ahmed, a representative from the MEDD, asked if the MEDD should be responsible for executing all aspects of the projects, or if agri, livestock and water interventions should instead be handed over to the ministries/departments in charge of those sectors.  
**Answer:** The National Committee will include representatives from these different ministries, but the EE will be MEDD.
- **Question:** Ahmed then asked if the project has co-benefits  
**Answer:** The presenting panel affirmed the existence of co-benefits, and apologised for these co-benefits not being shown on the PPT or listed in the summary note handout.
- Ahmed from the MEDD suggested that links, and perhaps opportunities for co-financing, must be made with Mauritania's Nationally Determined Contribution (Contribution Déterminée au Niveau National)

### Working group discussion feedback

A list of all recorded group members from the validation workshop group discussions is provided in Appendix 6.

#### Group 1

Stakeholders recommended that the project have four committee levels for governance, contrary to earlier discussions of governance structure: i) the Project Management Unit (national); ii) the Project Steering Committee (national); iii) a regional committee (wilayah); and iv) a local committee (commune).

#### i) Project Management Unit/Unité de Gestion du Project (national level):

This committee should form the central management unit established within the MEDD/DCEV

- |   |
|---|
| <ul style="list-style-type: none"> <li>• National coordinator</li> <li>• Financial manager</li> <li>• Gender specialist</li> <li>• ESS specialist</li> <li>• Technical consultants</li> </ul> |
|---|

#### ii) Project Steering Committee (national level):

Annual mandate/workplan (Plan de Travail Annuel): **6 months/year**

- MEDD representative
- Ministry of Agriculture representative
- Ministry of Livestock representative
- Ministry of Hydraulics representative
- Ministry of Social Affairs representative
- Representatives from each target hub
  - Wali of target wilayah
  - DREDD representative
  - Civil society representative

iii) Regional Committee (wilayah level):

Responsibility: identify adaptation priorities and submit funding proposals to Small Grants Facility/Steering Committee.

- Wali of target wilayah
- Mayors of target communes
- Regional heads of departments concerned (Agriculture, Livestock, Hydraulics, Social Affairs)
- Civil society representatives

iv) Local Committee (at commune level):

Responsibility: undertake and monitor activities in the field

- Mayor of target commune
- Steering committee representatives
- Stakeholders (farmers, livestock breeders, local beneficiaries)

Stakeholders also expressed support for the on-granting mechanism presented during the workshop. Templates should be developed before the small grants facility is established, to make the application process run smoothly for interested parties wanting to scale up project interventions.

General recommendations

- Provide training workshops for regional and local committees.
- Support the DREDDs in supervising local committees.
- Provide environmental education and awareness-raising initiatives.

## Group 2

A list of all recorded group members from the validation workshop group discussions is provided in Appendix 6.

- Sub-activity 2.1.1.1
  - Set up supervisory committee at the commune level comprising DREDD representatives (delegate and inspectors) and the mayor of the commune
- Sub-activity 2.1.1.2
  - Establish a village-level management committee responsible for implementing EbA and dune-fixation activities
  - Setting up management and monitoring committees estimated at USD18,000
- Sub-activity 2.1.1.3
  - For 3,260 ha of biological dune-fixation, planting and labour costs across the four hubs = ~USD40,000
  - *Clayonnage* (wattle and daub) costs estimated at ~USD1,300 per ha (total = USD4,3 million)
  - All nurseries established to supply these activities will cost ~USD80,000 to set up
- Sub-activity 2.1.1.4
  - 120 km of wire mesh estimated at ~USD500,000
- Sub-activity 2.1.1.5
  - It is recommended that training livestock farmers/livestock activities be moved to Output 2.2 (Activity 2.2.1)
  - 'Set-aside' grazing systems should be established under Activity 2.2.1; to promote sustainable use of grazing and foraging resources and prevent livestock from grazing/trampling newly reforested areas

## Group 3

\*List of group members not provided; however, full list of workshop participants is provided in Annex 7.

- Sub-activity 2.1.1.1
  - Nurseries and seed banks should be appropriate to context and location (types of seeds and plants should be determined by local committees)
  - Nurseries need to be protected by fences
- Additional sub-activities proposed:
  - Enhancing oasis farming;
  - Supporting and strengthening the capacities of women's cooperatives in the agricultural sector; and
  - Developing agricultural and forest lands in the target municipalities.
- **Note:** also move livestock farming sub-activities under Activity 2.1.
- Proposed budget for this entire activity: **USD7 million**

## Group 4

\*List of group members not provided; however, full list of workshop participants is provided in Annex 7.

- Access to clean water for vulnerable communities is an important matter for target communities
- It is important to specify the type of crops planned and include palm tree cultivation, as well as under-canopy cultivation of wheat, corn, rice, etc.
- Consider infrastructure maintenance in budget
- Consider sustainable solutions for water availability (solar, wind, etc.).
- Take into account project co-benefits: social, economic, environmental, and climate-related (e.g., carbon sequestration/climate).
- Increase the budget allocated to this component.

## v) Additional discussion

- **Question:** Moussa Keita from Group 4 asked if the project was addressing health issues such as heatstroke and diarrhea.  
**Answer:** Mr Bensada responded that the project is a climate change project, and as per the GCF requirements, it has to focus on climate change issues, not health issues — but that it nonetheless will produce these health co-benefits'. Mr Prayag added that GCF requirements on co-benefits are more stringent now, and that the co-benefits listed need to have indicators as well as M&E components.

- A stakeholder from Group 2 mentioned that the grants mechanism created by the project should look at existing small grants programmes for ideas; Mr Fall questioned whether small grants could potentially be used to conserve an endangered goat species in the region.
- A stakeholder from Group 2 added that the project activities could be integrated to address the heatstroke problem that Moussa Keita mentioned, by creating shaded zones with ecosystem restoration; also mentioned that diarrhea problems are more about hygiene and sanitation than climate change
- A woman from Group 3 mentioned that the role of women in establishing treelines should not be minimised and that their effort in establishing nurseries in these regions to date should not be forgotten.

*Summary of feedback and action points from validation workshop*

**Table 34.** Summary of key feedback and action points from working group discussions

Group	Project component discussed	Key action points
1	<b>Output 1.1.</b> Governance structures are strengthened, sustainable financial mechanisms are established, and policy briefs are prepared to support the integration of climate change considerations and EbA into government plans, policies and budgets.	<ul style="list-style-type: none"> <li>• Four management committees are needed: <ul style="list-style-type: none"> <li>◦ PMU</li> <li>◦ PSC</li> <li>◦ Regional committee (wilayah)</li> <li>◦ Local committee (commune)</li> </ul> </li> <li>• No need for village-level committees anymore</li> </ul>
2	<b>Activity 2.1.1.</b> Green-grey dune fixation infrastructure is established to control sand encroachment, enhance the provision of ecosystem services and slow the rate of desertification within the four target hubs.	<ul style="list-style-type: none"> <li>• Dune fixation and restoration activities require establishment of commune-level supervisory committees and village-level implementation committees.</li> <li>• Budget revisions needed for this activity.</li> <li>• Livestock sub-activities to be moved under Output 2.2.</li> </ul>
3	<b>Activity 2.2.1.</b> Facilitate the adoption of climate-smart agricultural practices and sustainable, diversified livelihoods by farmers within the target communes	<ul style="list-style-type: none"> <li>• Revise budget.</li> <li>• Move livestock sub-activities under this activity.</li> <li>• Nurseries and seed banks should be contextually appropriate (cater to needs of specific target commune); plant varieties/crops should be selected by local committees and supported by market study.</li> <li>• Add sub-activities: <ul style="list-style-type: none"> <li>◦ Enhancing oasis farming;</li> <li>◦ Supporting and strengthening the capacities of women's cooperatives in the agricultural sector; and</li> <li>◦ Developing agricultural and forest lands in the target municipalities.</li> </ul> </li> </ul>
4	<b>Activity 2.2.2.</b> Invest in supply- and demand-side water resources management within each target commune to improve access to water for agricultural- and land-rehabilitation activities.	<ul style="list-style-type: none"> <li>• Budget to be increased</li> </ul>
<b>Additional discussions</b>	<b>Problem statement</b>	<ul style="list-style-type: none"> <li>• Make reference to rural exodus</li> </ul>



## 5. Stakeholder engagement plan

### 5.1. Objectives

The main objectives of the Stakeholder Engagement Plan (SEP) are:

- To create and establish a platform for stakeholders to raise their concerns and voice their opinions.
- To develop a framework for complaints and grievance management.
- To generate opportunities for information sharing, especially pertaining to cross-cutting concerns.
- To develop a mechanism that provides feedback to stakeholders.
- To advance the integration of the social and gender dimensions of the project as outlined in the Gender Action Plan and Assessment.
- To ensure meaningful and effective consultation in consideration of the expectations and concerns of the different stakeholders of the project.
- Both the feasibility study and the Gender Assessment and Action Plan inform the Stakeholder Engagement Plan and elaborate on the engagement and expectations of the different entities during the project's implementation phase. Activities include the following:
  - Mobilisation benefiting communities for the start and implementation of the project (information, awareness raising)
  - Identification of critical issues (i.e. proper involvement of vulnerable groups)
  - Grievance management
  - Implementation phase related supervision and monitoring
  - Implementation of the Gender Action Plan in line with the Gender Assessment.

### 5.2. Stakeholder involvement in project management

As outlined in the Funding Proposal, UNEP and the WFP will collaborate closely with officials from the MEDD, representatives of the DREDDs in each target hub, technical experts and local community members in the target region to ensure the timely, efficient, and effective delivery of all proposed project activities.

#### 5.2.1. Project Steering Committee:

To ensure project compliance with national policies, the Ministry of Environment and Sustainable Development (MEDD) and the United Nations Environment Programme (UNEP) will establish a Project Steering Committee (PSC). The PSC will provide oversight and advisory support for the project and will be composed of at least one representative from relevant ministries, including the Ministry of Agriculture, the Ministry of Livestock Farming, the Ministry of Water and Sanitation, and the Ministry of Housing, Urbanism and Regional Planning, as well as a representative from UNEP. The committee will have decision-making capacity and will meet at least twice a year (once per semester), with ad hoc meetings as required to discuss project results, performance indicators, and provide strategic guidance.

#### 5.2.2. Technical Committee:

Under the chairmanship of MEDD, a Technical Committee will be established to provide technical guidance and ensure communication and reporting on the project with national adaptation communities. The committee will be composed of one representative from various ministries, including the Ministry of Economic Affairs, Development and Finance, the Ministry of Interior and Decentralisation, the Ministry of Transportation and Infrastructure, the Ministry of Petroleum, Energy and Mines, the Ministry of Social Affairs, Children and Family, the Ministry of Higher Education and Scientific Research, and the National Bureau of Statistics. The Technical Committee will also require specific technical support from other relevant stakeholders, including tertiary education institutions in Mauritania such as the Nouakchott University El Asriya (UNEA), Ecole Normale Supérieure (ENS), Scientific Institute for Technology Education (ISET), or the Mauritanian Institute for Scientific Research (IMRS). Moreover, the Technical Committee will seek cooperation opportunities with potential project partners including, *inter alia*, the United Nations Development Programme Country Office, the World Food Programme, the United Nations Food and Agricultural Organisation, the World Bank, the African Development Bank and the International Union for Conservation of Nature, as well as national NGOs and private sector associations. The Technical Committee will report to the PSC and will meet at least twice a year (once per semester), with ad hoc meetings held when required.

### 5.2.3. Project Management Unit:

At the onset of project implementation, the MEDD will establish a Project Management Unit (PMU) to coordinate the project interventions with the implementing partners. The PMU will consist of several staff members, including a full-time Project Coordinator (PC), a Finance and Administrative Officer, a Procurement Officer, an Environmental and Social Safeguards Officer (ESO), a Monitoring Officer, a Gender Officer, a Policy and Institutional expert, and a Chief Technical Advisor (CTA).

The PC will be responsible for daily on-the-ground implementation and management of the project, ensuring that the project achieves all activity targets set out in the Funding Proposal to the required quality standards and within the specified time and budget allocations. The PC will report directly to the PSC on project management-related matters and their roles will include the following:

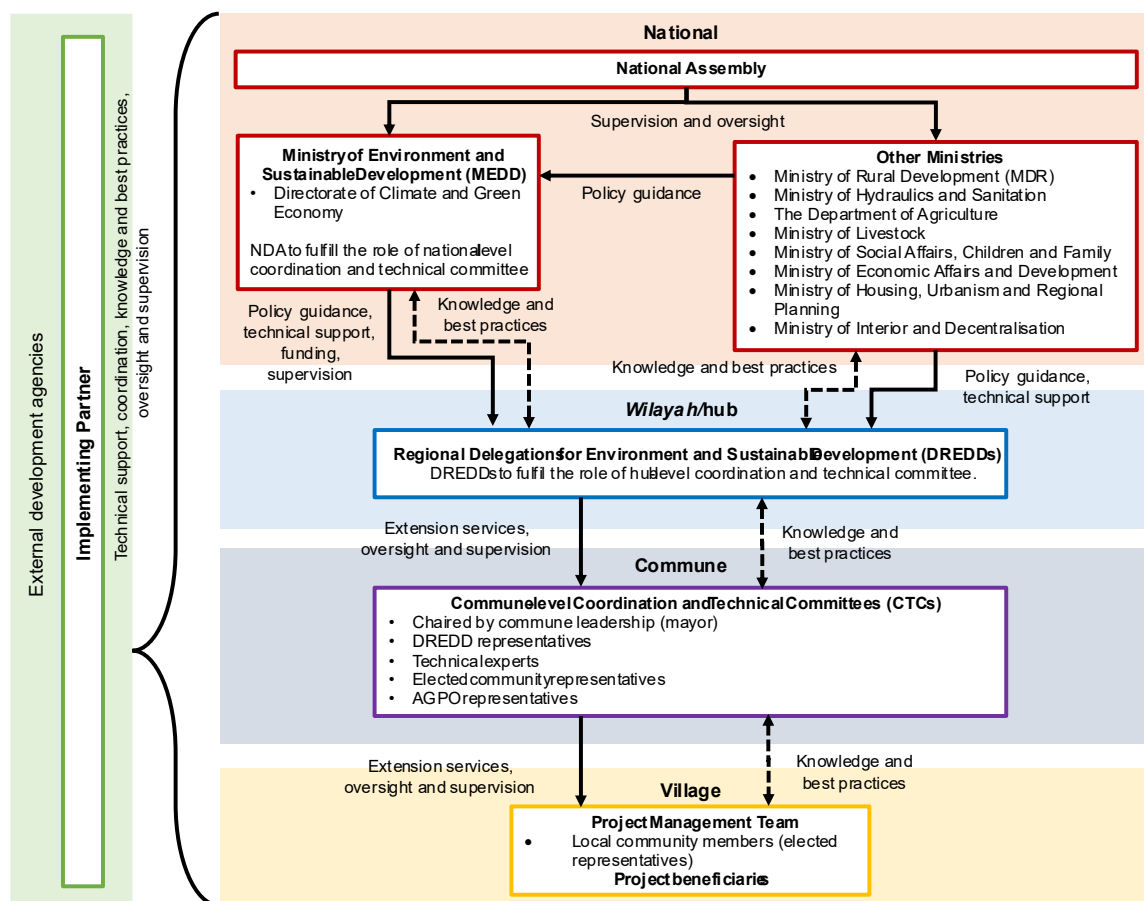
- manage the project in accordance with the specified workplans and allocated budget;
- ensure that all project interventions are implemented according to GCF and UNEP guidelines;
- manage and disburse financial resources allocated for the project during project implementation;
- work closely with national and local authorities to ensure effective management of the project; and
- oversee information and knowledge-transfer to relevant project partners.

The Financial Officer, Procurement Officer, and other staff members will provide administrative, logistical, technical, and financial support to the PMU, ensuring project-related tasks are undertaken according to UNEP and GCF standards, in consultation with local community leaders. The Financial and Procurement Officers, in particular, will manage the financial transactions for project outputs and activities, which will be implemented in line with the established project workplan and national priorities. The PMU will submit the final evaluation report and other required documentation to the GCF and UNEP.

### 5.3. Stakeholder involvement during implementation

During the initial stages of project implementation, engagement with stakeholders at all levels will ensure that adaptation interventions are implemented in a way that considers both the GoM's priorities and those of the project beneficiaries. Stakeholder consultations will be conducted in a participatory manner, to ensure local community members are: i) familiar with the EbA approach underpinning the proposed project design; and ii) given the opportunity to influence the use and sustainable management the land and natural resources they use. During the implementation phase of the project, key stakeholder groups will be consulted on an ongoing basis, including, *inter alia*: i) women's groups; ii) pastoralists; iii) small-holder farmers; iv) refugee groups; v) implementing partners; vi) supporting organisations in the target region — for example the Participatory Oasis Management Associations (AGPOs); and vii) government officials from the MEDD and DREDDs.

The proposed project implementation structure (Figure 1) will ensure close collaboration between project management committees, local community members, government institutions and NGOs operating within the target region. Additionally, wherever feasible, project management and coordination teams established under the proposed project will be embedded within government structures. The MEDD is responsible for service delivery in the environmental sector and both the MEDD and DREDDs are mandated to provide extension services — in the form of technical advice, training and support for local communities — during project implementation. With this technical support, local communities are mandated to oversee and sustainably manage the land they occupy and the natural resources that they provide. Consultations with local communities and municipal councils have shaped the design of this project, with local buy-in being crucial for the continuity and long-term sustainability of the project outcomes.



**Figure 1.** Proposed project implementation structure, with stakeholders at all levels.

#### *5.4. Engagement of communities during project implementation*

During planning and implementation of the project, local communities and vulnerable groups will be supported and encouraged to participate in decision-making processes that will enable them to gain control over land and water resources, ultimately contributing to land rehabilitation and livelihood improvement and diversification. These groups include those that have been identified in the Environmental and Social Management Framework (Annex 4) and include pastoralists, women, young people, disabled persons and refugees. The process of engaging communities should follow participatory methods and employ a shared decision-making approach.

While inception procedures and capacity-building activities initiated in year 1 of the proposed project will play a particularly important role in establishing participatory processes for engaging local communities, the entire project has been designed such that beneficiaries are given the opportunity to identify and respond to their own adaptation priorities and needs, using improved access to climate knowledge and strengthened technical capacity to make informed and independent decisions. This aspect of the project is particularly evident in the establishment of the on-granting mechanism, which will facilitate the flow of government funds and income generated from sustainable agricultural livelihoods towards continued investment in the upscaling of successful EbA measures autonomously selected by project beneficiaries.

The implementation of the SEP, in accordance with the ESMF (Annex 4), is closely tied to that of the Gender Action Plan. To ensure responsible project management, a Safeguards and Gender Specialist will be appointed to guide and coordinate stakeholder involvement. The Specialist will maintain relationships with all stakeholders, including local community groups (women, refugees, youth) and elected representatives. As a member of the Project Management Unit, the Safeguards and Gender Specialist will address community members' concerns and work together with local project managers to guarantee the dissemination of consistent and up-to-date information. Additionally, the Safeguards and Gender Specialist will provide training to local-level staff and stakeholders on gender relations, relationships between refugees and host communities, institutional coordination and economic and social safeguards.

Conflict avoidance and resolution training will be provided to staff and stakeholders within the DREDDs, commune-level CTCs, and smallholder farmers and pastoralist representatives. The CTCs will aid in horizontal and vertical coordination on conflict resolution and benefit sharing. If conflicts arise, the grievance redress mechanism outlined in Annex 6: Environmental and Social Management Framework will be used for management. Early identification of conflict scenarios and prompt resolution will be ensured through stakeholder engagement processes. Since water- and land tenure tensions are prevalent in the target hubs, addressing them at the project development and implementation stages is vital. All project staff and stakeholders should fully understand the impact of these programmes on social and economic development in the region to maximise positive impacts and prevent further local conflict and tensions.

## Appendix 1: List of all attendees from the December 2021 mission report

### Aoujeft hub

**Table 35.** List of stakeholders at the 2021 consultation in the Aoujeft hub.

Name and First Name	Title	Telephone number
Messouda mint Abdou	NGO TEAWOUN	(222) 41511987
Khaira mint Mohamed abderahmane	President NGO tintech N°01	(222) 44269828
Salma mint said	President NGO Elwihda we teghadoumTirebane	(222) 36930267
Mariem mint Baha	President NGO teawoun 01	(222) 49581771
Aicha mint dehyé	NGO el oula tirebane	(222) 44333633
Aichetou Mint Sheikh Saad	NGO teawoun amsekhser	(222) 47502772
Aminetou mint hamoud	Ghasbetou NGO	(222) 48607759
Jakha mint bah	President NGO tentech 3	(222) 43437156
Salma mint salem	President NGO jaamyet oum akhrab	(222) 44403872
Oumou kethoum mint ahmed	NGO taaoun tourja	(222) 36662415
Khadaja mint sidina	President NGO teaoun we esselam of Aoujeft	(222) 47656824
Maouloud Barka Massa	Elweva NGO	(222) 46072594
Yeslemould Ely	President NGO hbab chenguiti	(222) 41851025
Sid Ahmed Bekaye	President of Elyeghine NGO	(222) 22331414
Zeinabou mahfoudh	NGO El intaj	(222) 46822996
Essalma mint Maazouz	President NGO ljechane	(222) 49343409
Brahimould Amar maouloud	Agricultural NGOs for Sustainable Development	(222) 48128158
Oumekethoum mint vadily	President NGO El oula agropastoral	(222) 44689831
Fatimetou mint Mohamed	President NGO tentach 02	(222) 44404712
Mariem abderahmane bacar	NGO President	(222) 49212201
Mariem mint Ahmed saif	President NGO el mouna	(222) 44405579
Saleck Ousmane Massa	LEGUME PRODUCER	(222) 44405610
Fatimetou abdi hammal	President NGO laweija	(222) 36522415
Essedida mint Taleb	President NGO Elbaraka we eteissir	(222) 48885063
Mout'ha mint Moussa	NGO Eghadima	(222) 41139599
Salma mint Messoud	President NGO essalam	(222) 41752669
Khadijetou mint Ahmed	President NGO rawdatou El atfal	(222) 44446336
Mardya mint abdel wedoud	NGO Elhouda	(222) 44771399
Sedida mint absel wedoud	President NGO Enowja	(222) 48026386
Khadijetou/ ely salem	NGO intaj aoujeft	(222) 43015708
Aminetou mint soudi	President NGO Elbarakat	(222) 48311312
Fatimetou mint Sidina	NGO Zewel voum meja	(222) 47586246

### Tamchekett hub

**Table 36.** List of stakeholders at the 2021 consultation in the Tamchekett hub.

Name and First Name	Title	Telephone number
Guewad / Mohamed	Member of the Union of Agricultural Cooperatives	(222) 46834919
Saleck Ould Val	Member of the Union of Agricultural Cooperatives	(222) 4824110
Limam Elhadrami	Farmer And Breeder	(222) 48029789
Ebbaba Ould Mbareck	Crop Operator Behind the Dam	(222) 46740442
Abdellahi Med Cheikh	Dam Farmer	(222) 46086099
Sheikhna Yahya	Breeder	(222) 46766395
Mariem Val Mint Maloum	Member of the Union of Agricultural Women's Cooperatives	(222) 46084760
Ghenett Mint Ely Mahmoud	Member of the Union of Agricultural Women's Cooperatives	(222) 46086014
Oum Gjeija Mint Jemoue	Member of the Union of Agricultural Women's Cooperatives	(222) 46841695
Zeinabou Mint Kaber	Member of the Union of Agricultural Women's Cooperatives	(222) 47413161
Fatimetou Naji	Member of the Union of Agricultural Women's Cooperatives	(222) 44556515
Fatimetou Mint Elhaimer	Member of the Union of Agricultural Women's Cooperatives	(222) 47983849

Mariam Med Cheikh	Member of the Union of Agricultural Women's Cooperatives	(222) 20547223
Aminetou Mint Dalla	Member of the Union of Agricultural Women's Cooperatives	(222) 47431888
Ahmed Ould Mansoura	Farmer	
Vadel Ould Haki	Breeder	(222) 36248681
Med Lemine Ould Khou	Seller of Agricultural Products	(222) 46206241
Sid Elemine Ould Barma	Breeder	(222) 33529066
Bab Ahmed Sidna	Breeder	(222)
Abderrahmane Ould Elvaleh	Farmer	(222) 48125274



## Appendix 2: List of all attendees from the April 2022 mission report

### *Nema hub*

**Table 37.** List of stakeholders at the 2022 consultation in the Nema hub.

Name and Surname	Function/Structure	Telephone number
Messouda Mint Abdel Dayem	Deputy Mayor of Nema	22103677
Sidi Med Ould Boïdaly	Pr. Nema Farmers' Union (UAN)	46454823
Med El Faghih Ould M'Bareck	UAN Facilitator	47530714
Moulaye El Hassen Ould Mamoun	Member UAN	46777852
Ely Ould Baba	Sustainable Development Platform	26705207
Abdel Vetah Ould Khattry	Federation of Breeders	20122901
Hindu Mint Sheikh Turad	Pr. NGO Platform	22287376
Leghmane Ould El Bekaye	MEDD Delegate	46551186

### *Aoujeft hub*

**Table 38.** List of stakeholders at the 2022 consultation in the Aoujeft hub.

Name and Surname	Function/Structure	Telephone number
Salka Mint Med Messoud	Deputy Mayor	46718158
Fatimetou Mint Sidina	Coop. Fem. El Mounjaa	47586846
Metha Mint Moussa	Coop. El Ghadima	41139599
Khadijetou Mint Lejrab	Coop. Nasr	43015708
Kheïra Mint Baha	Coop. Tenticha 1	44269882
Mariem Mint Boubacar	Coop. Nasr Jouëïle	49212204
Mariem Mint Baha	Coop. Bedia mez 1	49581771
Salka Mint Med Mahmoud	Group of Heads of Household	46031782
Bamba Mint Boubou	Coop. Baghalet El Kheïr	48788781
Hasnia Mint Saaya	Coop. Artisan Lezdihar	46054469
Selma Mint Salem	Tenmiya Shop	44403872
Oum Kelthoum Mint Saleck	Coop. Production Couscous	47021174
Selma Mint Hamoudi	Coop. Agri. El Wihda We Taghadoum	44163760
Fatimetou Mint Abeïd	Nezaha Shop	48099861
Salka Mint Ethmane	Coop. Agri. Lighatha	44405610
Zeïna Mint Messoud	Coop. Bakery/pastry	48984322
Khadijetou Mint Med Salem	Coop. leather/mat El Kheïr	41149549
Fatimetou Mint El Moctar	Coop. Shop	48607616
Zeinabou Mint Seyid	Coop. Bakery	48454533
Minetou Mint Med Ould Messoud	Coop. agri.	48081582
Nema Mint Abdallahi	Coop. Pastry	46862684
Fatimetou Mint Kouiryat	Coop. Commerce	43821017
Zeinabou Mint Bahá	Coop. Agri. Teveragh Zeina	47531085
Mariem Mint Salem	Coop. Commerce	46031417
Mariem Mint Elbil	Coop. Agricultural	43744709
Salma Mint Med Lemine	Coop. Commerce	46792950
El Housseïn Ould Tablenka	Coop. Palm trees	44292269
El Hassen Ould Med Lemine	Coop. Carpentry El Itghane wa El Ihssan	46440483
Med El Moctar Ould Hadi	Coop. Nejah. Envir. AGRI	46522019

Med Salem Ould Maata	Coop. Palm trees	46485420
Med Ould Messoud	Coop. Commerce	46839825
Moloud Ould Barka Massa	Wava for Development NGOs	36072596
Cheikh Ould Dahi	Coop. Palm trees	46757243
Med Lemine Ould Alioune	Coop. Gardening	44541761
Med Salem Ould Hamoud	Coop. Bakery	20637713
Med Ould El Hadi	Coop. Oasis	44031515
Med Abderrahmane Ould Seyid	Coop. Agri.	47544594
Mahmoud Ould Dih	Coop. Breeding	49914396
Ahmedou Ould Abdallahi Ould Nemane	Commerce	46507584
Med Salem Ould Idriss	Coop. Solder	46469029

**Table 39.** List of stakeholders at the 2022 consultation in Ain Savra in the Aoujeft hub.

<b>Name and Surname</b>	<b>Function/Structure</b>	<b>Telephone number</b>
Med O. Amar Vayda	Breeder	34813027
Ahmedou O. Imijine	Farmer	30775544
AHMED o. Dewma	Co-op breeder. EMEL	30772255
Amou O. Abeïdat	Former mayor. Association of Friends of Ain Savra	31374849
Abdallahi O. Med Vall	Merchant	38172251
Moulaye Med O. Moulaye Brahim	Breeder	37915812
Menna O. Khteïra	Breeder	34813048
Hamada O. Ammar	Breeder	34445665
Med O. Ebeïdat	Tourist agent	38660789
Isselmou O. Boya	Breeder	33539867
Dedah O. M'Beïrikat	Breeder	38383399
Lebchir Ould Ahmed	Breeder	34636948
Saleck Ould Aya	Breeder	37625375
Telmidi Ould Issa	Breeder	34621885
Abdou Ould Lebyadh	Commerce	38389955
Sid'Ahmed Ould M'Barkek	Breeder	33393295
Med Ould Ely	Coop. Emel Commerce	37331166
Salma Mint Sid'Ahmed	Coop. Agri. Nejah	38655838
Mariem Mint Bakha	Coop. Agri. Nejah	
Aisha Mint Dawma	Coop. Agri. Nejah	34728703
<i>Salma Mint Bakha</i>	Coop. Agri. Nejah	34130738
Aminetou Mint Med Salem	Coop. Agri. Nejah	30528893
Mariem Mint Med	Coop. Agri. Nejah	34445434
Fatimetou Mint Nema	Coop. Agri. Nejah	37932045
Nebghouha Mint Amou	Coop. Agri. Nejah	37376971
Aïcha Mint Ely	Prof. Coop. Agri. Nejah	30507183
El Alia Mint Ely	Coop. Agri. Nejah	34181876
Khyarhoum Mint Med	Coop. Agri. Nejah	37969878
Nevissa Mint Khteïra	Coop. Agri. Nejah	34635849
Aminetou Mint Med Didey	Coop. Agri. Nejah	34852764
Aïcha Sarr	Coop. El Hevra	38571822
Warda Mint Bakha	Coop. El Hevra	30701319
Khadijetou Mint Hamoud	Coop. El Hevra	30605657

### *Tamchekett hub*

**Table 40.** List of stakeholders at the 2022 consultation in the Tamchekett hub.

<b>Name and Surname</b>	<b>Function/Structure</b>	<b>Telephone number</b>
Minetou Mint Zeïdane	Deputy Mayor	46477680
Sidi Ould Abeïda	Deputy Mayor	34260987
Inajiha Mint El Joumaa	Coop. Helet Mourba	46841695
Keïta mint Ely Mahmoud	Coop. Himayat El Ousra	46086014
Vala Mint Meimin	Coop. Tewvigh Toueïmiret	20568353
Namu Mint Soueïlem	Coop. Tewvigh Toueïmiret	44817908
Mounina Mint Moutar	Coop. Tewvigh Toueïmiret	47429516
Zeïnabou Mint Zeïdane	Coop. Nasroun Mina Allah	46947850
Nouha Mint Isselmou	Coop. Nasroun Mina Allah	44198950
Minetou Mint Isselmou	Coop. Nasroun Mina Allah	44198950
Abderrahmane Ould Sidi Abdoullah	Breeder	48125274
Abdallahi Ould Cheikhna	Coop. Agri. M'Beïghira	27218807
Gawad Ould Med	Agri Association. Tcharouki.	46824919
El Bar Ould Saleck	Breeder	46086122
Ahmed Ould Sidi	Farmer	46563165
Med Ould Med Mahmoud	Farmer	48382419
Ethmane Ould Ahmed	NGO Adala Tenmiya	46092589
Med Yella	Coop. Eguenni Zayda	44903335
Mahmoud Salem	NGO Devlpt Integrated Tamchekett	46766358
Med Ould Moussa	Farmer	46911901
Zeïnabou Mint Kaber	Coop. El Vawz	47418161
Ahmed Ould Bilal	MEDD Regional Delegate	44940341
Med Ali Ould Bouemiya	Inspector MEDD Tamchekett	41508398
Boucheïba Ould Med Vall	MEDD Regional Delegation	43180569

### *Rachid hub*

**Table 41.** List of stakeholders at the 2022 consultation in the Rachid hub.

<b>Name and Surname</b>	<b>Function/Structure</b>	<b>Telephone number</b>
Jdeïda Mint Maatala	Prof. Coop. Nessij 1	44504584
Sidi	Deputy Mayor	46558944
Iddiya Mint Hambell	Coop. Nessij	44321614
Fatimetou Mint Hambell	Pr. Coop. El Vewz El Jedid	46706210
Saad Ebeyi Mint Magha	Coop. Nessij	47785014
Lewreïha Mint Haïmada	Pr. Coop. El Veth	42399410
Fatma Mint Yeslem	GIE Rachid for Women	47484591
Fatimetou Mint Sidina	Prof. Coop. Efam Ediyar	44717493
Fatimetou Mint Eïde	Pr. Association de la Fille Rachid	43558872
Idoumha Mint Ebbeyate	Coop. Enidham	44623890
Mekfoula Mint Magha	Coop. Chou Oun El Mar'a	44073358
Ahmed Ould El Had	Farmer	47440877

Med Ould Med	Farmer	46043031
El Meïmoun Ould Med El Moctar	Farmer	42161642
Sidi Ould Sid'Ahmed	Civil society	46568663
Med Ould Ahmed Salem	Agri/Breeder	46807586
Sidi Med	Prof. MICO	46402710
Brahim Ould Hama	Farmer	44286324
Ahmed Ould Saleck	Breeder	44351668
Med Ould ahmed Ould Matalla	Farmer	44256887
Abderrahmane Ould Ahmed Zeïn	Farmer	46730368
Med Ould Dehah	Breeder	46085697
Aziz Ould Hambel	Pr. Association Pierre Construction	46724344

### Appendix 3: All project models proposed during the April 2022 mission report

#### Aoujeft hub

**Table 42.** A model of slowdown thresholds proposed by stakeholders in the Aoujeft hub.

<b>This is a typical model of slowdown thresholds proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Aoujeft pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Ouad Ijichane.	Construction of 3 slowdown thresholds.	There are a few palm groves along the wadi. Downstream of each palm grove, implant a threshold.	These are thresholds with a length of 500 m (on average) with a depth of 1 m and a height of 50 cm, built with cemented gabion.	The management of these sites will be entrusted to local organisations of date producers and market gardening.	<ul style="list-style-type: none"> <li>Financing IGAs for women and farmers while waiting for the results of developments.</li> <li>Register, as a priority, oasis Producers for threshold construction work (in particular work at HIMO).</li> <li>Support, where appropriate, producers in seeds, horticultural equipment, and dewatering facilities.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear meter of threshold	500 units/threshold X 3 thresholds	Unknown	Unknown	Local labour	Producers' association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Drying/preserving vegetables	Women/cooperatives	15/20	Local workshop	3 / 4 days	Aoujeft
Maintenance/rehabilitation of thresholds	Phoeniculturists	10/15	Local workshop and on-site simulations	3 / 4 days	Project site

AGRs: weaving, sewing, bakery/pastry	Women/cooperatives	15/20	Local workshop and external training in CFPs	3 / 4 days for the local and one week for the outside	Aoujeft for the local and CFP Nkt for the outside
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**Table 43.** A model of an agricultural retention dam proposed by stakeholders in the Aoujeft hub.

<b>This is a typical model of agricultural retention dam in Graras (basins) proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Aoujeft pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Dike of El Marveg.	Construction of an earthen dam for flood control agriculture (cereal production and associated speculation.	There are Graras at the bottom of the Adrar plateau where the waters of the hydrological network flow. The area of El Marveg is an example.	It involves building an earthen 2000 m long, 3 m high, 7 m wide at the base and 3 m crest. Upstream riprap is useful.	The management of these sites will be entrusted to local organisations of Producers of the oasis.	<ul style="list-style-type: none"> <li>• Register, as a priority, the Producers of the oases for the work of the site (in particular the works at HIMO).</li> <li>• Support, where appropriate, producers with adapted seeds, ploughing equipment and possibly fences.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear metre of rockfill	2000 units	Unknown	Unknown	Local tasker or construction company	Oasis Producers Association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2 / 3 days	Project website

**Table 44.** A model of a reforestation project proposed by stakeholders in the Aoujeft hub.

<b>This is a typical model of reforestation project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Aoujeft pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Toueïguidit.	Reforestation.	The Toueïguidit area contains important social and communication infrastructures as well as inhabited areas all threatened by large-scale silting. The targeted sites are far from the oasis areas where there is fear of competition on water.	It is a question of carrying out a reforestation in Prosopis on an area of 125 Ha (2500 m x 500 m) achievable in several stages. The creation of large nurseries because it takes 400 plants per Ha; this activity should be spread over a relatively long period depending on the programming of the project. It is also necessary to plan the planting which is a major operation in a short time (from the first rains). Babysitting is important during the growth phase of seedlings.	The management of these sites will be entrusted to local community-based organisations with, however, for the implementation phase, specific activities to be carried out by particular groups. The nurseries can be made by the women in the vicinity and in parallel with their market gardening activities. Guarding will be the responsibility of unemployed men. Planting will be entrusted to young people.	<ul style="list-style-type: none"> <li>• Financing AGRs for women for nursery management.</li> <li>• Contract with unemployed male heads of household for security operations.</li> <li>• All community assets should be committed to planting with priority given to young people.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Nursery of 10,000 plants	5			Women's cooperatives	Local community organisations
Planting of 5 Ha	25			Local taskers	Local community organisations
1 Caretaker for 5 Ha	25			Local workers in a situation of unemployment	Local community organisations



Training required to be scheduled					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Nursery management	Women/cooperatives	10/15	Local workshop	2 days	Project website
Planting techniques	Community Volunteers	15/20	Local workshop and on-site simulations	2 days	Project site
Technique for the exploitation of forest products from reforestation	Community Volunteers	15/20	Local workshop and on-site exercises	2 days	Project site

**Table 45.** A model of mechanical fastening proposed by stakeholders in the Aoujeft hub.

This is a typical model of mechanical fastening project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Aoujeft pole during the debates.					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Toungad.	Mechanical fixing by clay.	The Toungad area has important oases in terms of date production. These oases are threatened by a mobile dune cord in croissance.il is a question of setting up a mechanical fixation to avoid water competition.	It is a fixation 800 ml long on a depth of 100 ml with squares of 20 m x 20 m; i.e. 1,200 ml of clayonnage/wattling barriers /Ha. The height of the clayonnage/wattling barriers is 1.20 to 1 50 m including 30 cm buried in the ground. The material used will be the leaves of the date palm in abundance. For palm leaves 1.50 m long, 30 cm of which are buried in the ground, 14 sheets per ml of rack are required.	The management of these sites will be entrusted to local organisations of date producers and market gardening.	<ul style="list-style-type: none"> <li>Register, as a priority, oasis Producers and local labour for construction work (especially work at HIMO such as planting and supply of clay equipment)</li> </ul>
Estimation, if possible, of the cost of the intervention					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Clayonnage/wattling square (20 x 20)	200 units	Unknown	Unknown	Local task coordinator	Producers' association
Training required to be scheduled					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training

**Table 46.** A model of slowdown thresholds proposed by stakeholders in Ain Savra in the Aoujeft hub.

This is a typical model of slowdown thresholds proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Ain Savra pole during the debates.					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Wadi on which are located the palm groves of Ain Savra.	Construction of 3 slowdown thresholds.	There are a few palm groves along the wadi. Downstream of each palm grove, a threshold should be implanted.	These are thresholds with a length of 500 m (on average) with a depth of 1 m and a height, respectively of 50, 60 and 70 cm constructed with cemented gabion.	The management of these sites will be entrusted to local organisations of date producers and market gardening.	<ul style="list-style-type: none"> <li>Financing IGAs for women and farmers while waiting for the results of developments.</li> <li>Entrust the work to local taskers and register, as a priority, the Producers of the oases for the work of the threshold site (in particular the work at HIMO).</li> <li>Support, where appropriate, producers in seeds, horticultural equipment and dewatering facilities.</li> </ul>
Estimation, if possible, of the cost of the intervention					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear meter of threshold	500 units per threshold			Local labour	Producers' association
Training required to be scheduled					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Drying/preserving vegetables	Women/cooperatives	15/20	Local workshop	3 / 4 days	Ain Savra
Maintenance/rehabilitation of thresholds	Phoeniciculturists	10/15	Local workshop and on-site simulations	3 / 4 days	Project site
AGRs: weaving, sewing, bakery/pastry	Women/cooperatives	15/20	Local workshop and external training in CFPs	3 / 4 days for the local and one week for the outside	Ain Savra for the local and CFP Nkt for the outside

**Table 47.** A model of an agricultural retention dam proposed by stakeholders in Ain Savra in the Aoujeft hub.

<b>This is a typical model of agricultural retention dam in Graras (basins) proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Ain Savra cluster during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Amejenjel Dam.	Construction of a dam with water control structures (cereal production and associated speculation).	There are Graras at the bottom of the Adrar plateau where the waters of the hydrological network flow. The Amejenjel basin is an example.	It is a question of building a dam whose embankment is 400 m long, 3 m high, 7 m wide at the base and 3 m crest with an upstream riprap. This dam will be equipped with a reinforced concrete drain structure and a cemented stone spillway.	The management of these sites will be entrusted to local organisations of Producers of the oasis.	<ul style="list-style-type: none"> <li>Register, as a priority, the Producers of the oases for the work of the site (in particular the works at HIMO).</li> <li>Support, where appropriate, producers with adapted seeds, ploughing equipment and possibly fences.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear metre of rockfill	400 units			Local TP company preferably	Oasis Producers Association
Drain and spillway	1 unit			Local TP company preferably	Oasis Producers Association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2 / 3 days	Project website

**Table 48.** A model of a reforestation project proposed by stakeholders in Ain Savra in the Aoujeft hub.

<b>This is a typical model of reforestation project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Ain Savra cluster during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Protection of the road on the Yenbech/Kedouel axis.	Reforestation.	The Yenbech/Kedouel axis is an important section for access to	It is a question of carrying out a reforestation in	The management of these sites will be entrusted to	<ul style="list-style-type: none"> <li>Financing AGRs for women for nursery management.</li> </ul>

		several groupings of the commune. The protection of this axis cut silting is vital for the opening up of the municipality.	Prosopis on an area of 70 Ha (7000 m x 100 m) achievable in several stages. It will be necessary to create large nurseries because it takes 400 plants per Ha; This activity should be spread over a relatively long period depending on the programming of the project. It is also necessary to plan the planting which is a major operation in a short time (from the first rains). Babysitting is important during the growth phase of seedlings.	local community-based organisations with, however, for the implementation phase, specific activities to be carried out by particular groups. The nurseries can be made by the women in the vicinity and in parallel with their market gardening activities. Guarding will be the responsibility of unemployed men. Planting will be entrusted to young people.	<ul style="list-style-type: none"> <li>Contract with unemployed male heads of household for security operations.</li> </ul> <p>All community assets should be committed to planting with priority given to young people.</p>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Nursery of 10,000 plants	3			Women's cooperatives	Local community organisations
Planting of 5 Ha	14			Local taskers	Local community organisations
1 Caretaker for 5 Ha	14			Local workers in a situation of unemployment	Local community organisations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Nursery management	Women/cooperatives	10/15	Local workshop	2 days	Project website
Planting techniques	Community Volunteers	15/20	Local workshop and on-site simulations	2 days	Project site
Technique for the exploitation of forest products from reforestation	Community Volunteers	15/20	Local workshop and on-site exercises	2 days	Project site

**Table 49:** A model of a dune fixing project proposed by stakeholders in Ain Savra in the Aoujeft hub.

This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Ain Savra cluster during the debates.					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Fixing the dunes of Ain Savra (oasis and city of Ain Savra).	Mechanical fixing by clay.	The oasis of Ain Savra is in the immediate vicinity of the city. This fixation will have the double advantage of protecting both the palm groves and the city threatened by a mobile dune cord in croissence. It is to set up a mechanical fixation to avoid. The actors think they can safely replenish the clay squares with local forest species.	It is a fixation 1500 ml long on a depth of 300 ml with squares of 20 m x 20 m; i.e. 1,200 ml of clayonnage/wattling barriers /Ha. The height of the clayonnage/wattling barriers is 1.20 to 1 50 m including 30 cm buried in the ground. The material used will be the leaves of the date palm in abundance. For palm leaves 1.50 m long, 30 cm of which are buried in the ground, 14 sheets per ml of rack are required.	The management of these sites will be entrusted to local organisations of date producers and market gardening.	<ul style="list-style-type: none"> <li>Register, as a priority, oasis Producers and local labour for construction work (especially work at HIMO such as planting and supply of clay equipment).</li> </ul>
Estimation, if possible, of the cost of the intervention					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Clayonnage/wattling/wattling square (20 m x 20 m)	1125 units			Local labour	Producers' association
Training required to be scheduled					
This is a typical model of pastoral well project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Ain Savra cluster during the debates.					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Pastoral route rehabilitation: Achektin.	Pastoral well.	The scarcity of pastures and the	It involves drilling a well 10 m deep casing and	The management of the wells will be	

		absence of water points for watering animals threaten livestock activity with extinction, while there are still some pockets of resistant pastures very rich in minerals and other vital nutrients for animals whose exploitation is made impossible by the absence of water points. The Achektin area is a real example of this that can be extrapolated to other pastoral areas.	4 m catchment with two drinkers 4 m long, 2 m wide and 80 cm high. A preliminary survey should confirm the existence of a sufficient water table to water the animals. The nature of the subsoil will determine the advisability or not of a cemented casing.	entrusted to the breeders' associations.	
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Finished drill meter	14			Hydraulic company	Breeders' associations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training

#### *Rachid hub*

**Table 50.** A model of slowdown thresholds proposed by stakeholders in the Rachid hub.

<b>This is a typical model of slowdown thresholds proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Rachid pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Install weir at <i>wadi</i> where palm groves of Rachid are located.	Construction of 25 slowdown thresholds.	There are several palm groves along the wadi, which has a length of 30 km. This involves building a series of cascading thresholds to capture runoff water to recharge the water table.	These are thresholds with a length of 400 m (on average) with a depth of 1 m (height of gabion wall) and a variable height of 50–60 built of cemented stones.	The management of these sites will be entrusted to local organisations of date producers and market gardening.	<ul style="list-style-type: none"> <li>Financing IGAs for women and farmers while waiting for the results of developments</li> <li>Entrust the work to local taskers and register, as a priority, the Producers of the</li> </ul>

					oases for the work of the threshold site (in particular the work at HIMO) <ul style="list-style-type: none"> <li>• Support, where appropriate, producers in seeds, horticultural equipment and dewatering facilities</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear meter of threshold	400 units per threshold			Local labour	Producers' association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Drying/preserving vegetables	Women/cooperatives	15/20	Local workshop	3 / 4 days	R
Maintenance/rehabilitation of thresholds	Phoeniciculturists	10/15	Local workshop and on-site simulations	3 / 4 days	Project site
AGRs: weaving, sewing, bakery/pastry	Women/cooperatives	15/20	Local workshop and external training in CFPs	3 / 4 days for the local and one week for the outside	Rachid for the local and CFP Nkt for the outside

**Table 51.** A model of an agricultural retention dam proposed by stakeholders in the Rachid hub.

This is a typical model of agricultural retention dam in Graras (basins) proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Rachid pole during the debates.



Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Moutboul Dam.	Wire mesh fence of the oasis.	One of the characteristics of the Tagant plateau is the existence of sites favourable to the establishment of dams with large fertile basins. Many sites have been serviced including the Moutboul dam.	It involves laying a wire mesh fence, reinforced with barbed wire, on the entire perimeter of the oasis with concrete stakes and angles.	The management of this dam will be entrusted to the organisation of the Producers of the basin.	<ul style="list-style-type: none"> <li>Support, where appropriate, producers with adapted seeds and ploughing equipment.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear meter of mesh laid	To be determined by the technical study			Local tasks preferably	Oasis Association Producers
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2 / 3 days	Project website

**Table 52.** A model of dune fixing proposed by stakeholders in the Rachid hub.

<b>This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example for illustrate the choice and interventions chosen by the actors of the Rachid pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response

Protection of the road on the Hssey Lgara - Touajil axis.	Reforestation.	The Hssey Lgara - Touajil axis is a model site for this type of intervention insofar as it contributes to the opening up of several localities and production areas.	It is a question of carrying out reforestation using <i>Prosopis</i> on an area of 350 Ha (35 km x 100 m) achievable in several stages. For a need of 400 seedlings / Ha, it will be necessary to create large nurseries; This activity should be spread over a relatively long period depending on the programming of the project. It is also necessary to plan the planting which is a major operation in a short time (from the first rains). Babysitting is important during the growth phase of seedlings.	The management of these sites will be entrusted to local community-based organisations with, however, for the implementation phase, specific activities to be carried out by particular groups. The nurseries can be made by the women in the vicinity and in parallel with their market gardening activities. Guarding will be the responsibility of unemployed men. Planting will be entrusted to young people.	<ul style="list-style-type: none"> <li>Financing AGRs for women for nursery management.</li> <li>Contract with unemployed male heads of household for security operations.</li> <li>All community assets should be committed to planting with priority given to young people.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Nursery of 10,000 plants	14			Women's cooperatives	Local community organisations
Planting of 5 Ha	70			Local taskers	Local community organisations
1 Caretaker for 5 Ha	70			Local workers in a situation of unemployment	Local community organisations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Nursery management	Women/cooperatives	10/15	Local workshop	2 days	Project sites
Planting techniques	Community Volunteers	15/20	Local workshop and on-site simulations	2 days	Project sites
Technique for the exploitation of forest products from reforestation	Community Volunteers	15/20	Local workshop and on-site exercises	2 days	Project sites

**Table 53.** A model of dune fixing proposed by stakeholders in the Rachid hub.

<b>This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Rachid pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Fixing the dunes of the oasis of Rachid.	Mechanical fixing by clay.	The oasis of Rachid, important for the village (capital of the commune and seat of the Arrondissement) is a typical model that the actors have chosen to document their project option of local forest species.	It is a fixation of 18 km long on a depth of 100 m (18 Ha) with squares of 20 m x 20 m; i.e. 1200 m of clayonnage/wattling per Ha. The height of the clayonnage/wattling barriers is 1.20–1.50 m, including 30 cm buried in the ground. The material used will be the leaves of the date palm in abundance. 14 sheets per m of clayonnage/wattling barrier are required.	The management of these sites will be entrusted to local organisations of date producers and market gardening.	<ul style="list-style-type: none"> <li>Register, as a priority, oasis Producers and local labour for construction work (especially work at HIMO such as planting and supply of clay equipment).</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Clayonnage/wattling square (20 m x 20 m)	4500 units			Local labour	Producers' association
<b>Training required to be scheduled</b>					

**Table 54.** A model of an agricultural retention dam proposed by stakeholders in the Rachid hub.

<b>This is a typical model of agricultural retention dam in Graras (basins) proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Rachid pole during the debates.</b>
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Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Build an earthen dam/bund at El Khatt.	Construction of an earthen dam/bund for flood recession agriculture (cereal production and associated speculation).	the adjacent area between the Adrar and Tagant plateaus contains Graras highly productive because they are located on a rich soil. Earthen dams/bunds are the best intervention because the slopes are reduced.	It involves building an earthen bund 1200 m long, 2 m high and 5 m wide at the base and 2 m crest. Upstream riprap is useful.	The management of these sites will be entrusted to local organisations of Producers of the oasis.	<ul style="list-style-type: none"> <li>• Register, as a priority, the Producers of the oases for the work of the site (in particular the works at HIMO).</li> <li>• Support, where appropriate, producers with adapted seeds, ploughing equipment and possibly fences.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear metre of rockfill	1200 units			Local tasker or construction company	Oasis Producers Association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2 / 3 days	Project website

**Table 55.** A model of a pastoral well proposed by stakeholders in the Rachid hub.

<b>This is a typical model of pastoral well project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Rachid pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response

Pastoral wells in El Khatt.	It is a very broad pastoral vocation. The pastures would be of very good quality. However, in the absence of reliable data in terms of hydrogeological prospections, stakeholders recommend considering surveys to identify potential sources and drilling pastoral wells.	Elaborate studies should determine well sinking opportunities, their location and sizing.	This involves drilling a number of wells whose characteristics should be determined in a timely manner once funding decisions have been approved. A preliminary survey should confirm the existence of a sufficient water table to water the animals. The nature of the subsoil will determine the advisability or not of a cemented casing.	The management of the wells will be entrusted to the breeders' associations.	
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Finished drill meter					Breeders' associations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training

*Tamchekett hub*

**Table 56.** A model of slowdown thresholds proposed by stakeholders in the Tamchekett hub.

This is a typical model of slowdown thresholds proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Tamchekett pole during the debates.

Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Slowdown thresholds on the Oued de Toueimiret.	Construction of 4 slowdown thresholds.	There are several potentially convertible basins along this wadi. To exploit them it is necessary to slow down the flow of water so that the bunds resist. It is a question of constructing a series of cascading thresholds to slow down the flow of runoff water and by induced effect to recharge any slicks and surface clayonnage/watling barriers.	It is the construction of 4 thresholds with a length of 400 m (on average) with a depth of 1 m and a variable height of 50 to 60 m built in cemented stones.	The management of these sites will be entrusted to local producer organisations.	<ul style="list-style-type: none"> <li>Entrust the work to local taskers and register, as a priority, the Producers of the oases for the work of the threshold site (in particular the work at HIMO.</li> <li>Support, where appropriate, seed and horticultural equipment producers.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear meter of threshold	400 units per threshold			Local labour	Producers' association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Maintenance/rehabilitation of thresholds	Phoeniciculturists	10/15	Local workshop and on-site simulations	3 / 4 days	Project site

**Table 57.** A model of dam rehabilitation proposed by stakeholders in the Tamchekett hub.

<b>This is a typical model of dam rehabilitation proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Tamchekett pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response

Teweimir Dam.	Dam rehabilitation.	It is the repair of a dam on which the production of dozens of farmers depends. The dike requires recalibration along its entire length. The spillway and drain structure having failed.	The dike will have to be recalibrated and rocked over its entire length of 120 m, the spillway rebuilt in cemented stone over a length of 30 m and the drain structure built. Possibly consider a protective fence against the wandering of animals.	The management of this dam will be entrusted to the organisation of the Producers of the dam.	<ul style="list-style-type: none"> <li>Support, where appropriate, producers with adapted seeds and ploughing equipment.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear metre of rehabilitation and riprap of	120			Public works company	Dam Producers Association
Weir and discharge structure	1			Public works company	Dam Producers Association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2 / 3 days	Project website

**Table 58.** A model of a dune fixing project proposed by stakeholders in the Tamchekett hub.

<b>This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example for illustrate the choice and interventions chosen by the actors of the Tamchekett pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response



Protection of the town of Tamchekett.	Reforestation.	The city of Tamchekett is threatened by silting up residing in the contributions of the Aoukar open to the great desert to the northeast. The protection of the city should be on that side. A reforestation of Prosopis would be all the more appropriate as the guarding is facilitated by the proximity of the houses of the periphery where the pockets of poverty, and therefore unemployment, are located.	It is a question of carrying out a reforestation in Prosopis on an area of 20 Ha (2 km x 100 m) achievable in several stages. For a need of 400 seedlings / Ha, it will be necessary to create large nurseries; This activity should be spread over a relatively long period depending on the programming of the project. It is also necessary to plan the planting which is a major operation in a short time (from the first rains). Babysitting is important during the growth phase of seedlings.	The management of these sites will be entrusted to local community-based organisations with, however, for the implementation phase, specific activities to be carried out by particular groups. The nurseries can be made by the women in the vicinity and in parallel with their market gardening activities. Guarding will be the responsibility of unemployed men. Planting will be entrusted to young people.	<ul style="list-style-type: none"> <li>Financing AGRs for women for nursery management.</li> <li>Contract with unemployed male heads of household for security operations.</li> <li>All community assets should be committed to planting with priority given to young people.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Nursery of 10,000 plants	1			Women's cooperatives	Local community organisations
Planting of 5 Ha	4			Local taskers	Local community organisations
1 Caretaker for 5 Ha	4			Local workers in a situation of unemployment	Local community organisations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Nursery management	Women/ cooperatives	5/10	Local workshop	2 days	Tamchekett town
Planting techniques	Community Volunteers	15/20	Local workshop and on-site simulations	2 days	Tamchekett town
Technique for the exploitation of forest products from reforestation	Community Volunteers	10/15	Local workshop and on-site exercises	2 days	Tamchekett town

**Table 59.** A model of a dune fixing project proposed by stakeholders in the Tamchekett hub.

<b>This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Tamchekett pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Fixing the dunes of Rkheimiya (Radhi commune).	Mechanical fixing by clayonnage/wattling .	The threat posed by silting up in agricultural areas, palm groves and dam basins, imposes a protection scheme that requires little water requirements. To do this, the actors propose to adopt mechanical fasteners of clay.	It is a fixation of 1.5 km long on a depth of 100 ml with squares of 20 m x 20 m; i.e. 1,200 ml of clayonnage/wattling barriers /Ha. The height of the clayonnage/wattling barriers is 1.20 to 1 50 m including 30 cm buried in the ground. The material used will be date palm leaves and other local materials.	The management of these sites will be entrusted to local farmers' organisations.	Register, as a priority, local farmers and labour for construction work (especially work at HIMO such as planting and supply of clay equipment).
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Clayonnage/wattling square (20 x 20)	125 units			Local labour	Producers' association
<b>Training required to be scheduled</b>					

**Table 60.** A model of an agricultural retention dam proposed by stakeholders in the Tamchekett hub.

<b>This is a typical model of agricultural retention dam in Graras (basins) proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Tamchekett pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Bunds of Tewmiyat, Anzay and Legrayer (commune of Gaïet Teïdouma).	Construction of a series of earthen bunds for flood control agriculture	Agglomerations that live from the exploitation of reservoirs scattered in tributaries of the	It is a question of building a series of earthen bunds of varying sizes and in	The management of these sites will be entrusted to local	<ul style="list-style-type: none"> <li>Register, as a priority, the Producers of the oasesfor the work of</li> </ul>

	(cereal production and associated speculation).	watershed of a large wadi of the Affolé need small reservoirs for subsistence agriculture essential to their survival. These bunds are of paramount importance for the food security of their inhabitants.	number to be determined by socio-economic studies. Upstream riprap is useful to avoid rapid erosion.	organisations of cuvette Producers.	the site (in particular the works at HIMO). • Support, where appropriate, producers with adapted seeds, ploughing equipment and possibly fences.
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear metre of rockfill	To be determined by technical studies			Local committee or labour force from producer organisation (AGPO)	Oasis Producers Association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2 / 3 days	Project website

**Table 61.** A model of a pastoral well project proposed by stakeholders in the Tamchekett hub.

<b>This is a typical model of pastoral well project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Tamchekett pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Well in the pastoral zone of the commune of Mabrouk.	It is a very large pastoral area. Pastures, in a normal year, would be abundant and of good quality.	Elaborate studies should determine well sinking opportunities, their location and sizing.	This involves drilling a number of wells whose characteristics should be determined in a timely manner once	The management of the wells will be entrusted to the breeders' associations.	

	However, in the absence of reliable data in terms of hydrogeological prospections, stakeholders recommend considering surveys to identify potential sources and drill pastoral wells.		funding decisions have been approved. A preliminary survey should confirm the existence of a sufficient water table to water the animals. The nature of the subsoil will determine the advisability or not of a cemented casing.		
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Finished drill meter					Breeders' associations
<b>Training required to be scheduled</b>					

**Table 62.** A model of slowdown thresholds proposed by stakeholders in the Nema hub.

<b>This is a typical model of slowdown thresholds proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Nema pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	livelihood options to support the response
Slowdown thresholds in the N'Gadi and Lebheira areas of Nema.	Construction of 2 slowdown thresholds.	The palm grove of Nema is threatened with drying up. The wadi, on which the areas of N'Gadi and Lebheira are located over a length of 2 km, feeds this aquifer. The construction of 2 slowdown thresholds would contribute to the recharge of the groundwater.	This is the construction of 2 thresholds with a length of 500 m (on average) with a depth of 1 (to be gabion wall) and a variable height of 50 to 60 built in cemented stones.	The management of these sites will be entrusted to local producer organisations.	<ul style="list-style-type: none"> <li>• Entrust the work to local taskers and register, as a priority, the Producers of the oases for the work of the threshold site (in particular the work at HIMO.</li> <li>• Support, where appropriate, producers of vegetable seeds and horticultural equipment.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority

Linear meter of threshold	500 units per threshold			Local labour	Producers' association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Maintenance/rehabilitation of thresholds	Phoeniciculturists	10/15	Local workshop and on-site simulations	3 / 4 days	Project site

**Table 63.** A model of dam rehabilitation proposed by stakeholders in the Néma hub.

<b>This is a typical model of dam rehabilitation proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Néma pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Mendes Dam (Néma).	Construction of a dam on the bottom of a <i>wadi</i> .	It is a remnant of containment exploited for agricultural production by the inhabitants of the outskirts of Nema. Given the hydrological regime of the basin, the dike gave way even though the site became an important production hub for the food security of farmers. It is important to rehabilitate this structure by transferring it to a dam with a spillway and a discharge structure.	The dike will have to be recharged and rocked along its entire length of 1500 m. For the dam transfer, it will be necessary to build a side spillway in cemented stone with a length of 30 m and a discharge structure. Possibly consider a protective fence against the wandering of animals because of the proximity of the city.	The management of this dam will be entrusted to the association of Producers of the dam.	<ul style="list-style-type: none"> <li>Support, where appropriate, producers with adapted seeds and ploughing equipment.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Linear metre of rehabilitation and	1500			Public works company	Dam Producers Association
Weir and discharge structure	1			Public works company	Dam Producers Association
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training

Care/maintenance of agricultural containment structures	Oasis Producers	10/15	Local workshop	2/3 days	Project website
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**Table 64.** A model of dune fixing proposed by stakeholders in the Néma hub.

<b>This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example for illustrate the choice and interventions chosen by the actors of the Nema pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Protection of the city of Noual.	Reforestation.	This commune, located in the semi-desert northern part of the Moughataa, is home to a constant and regular invasion of sands. The winds are very strong, and the dunes are constantly moving. The town of Noual, capital of the commune, is almost buried by the sands and requires strong and rapid action to save it. Reforestation based on Prosopis seems to be the best option for a rapid response to this scourge.	It is a question of carrying out a reforestation in Prosopis on an area of 50 Ha (5 km x 100 m) achievable in 4 years according to the actors taking into account the local capacities. For a need of 400 seedlings/Ha, it will be necessary to create large nurseries. It is also necessary to plan the planting which is a major operation in a short time (from the first rains). Babysitting is important during the growth phase of seedlings.	The management of these sites will be entrusted to local community-based organisations with, however, for the implementation phase, specific activities to be carried out by particular groups. The nurseries can be made by the women in the vicinity and in parallel with their market gardening activities. Guarding will be the responsibility of unemployed men. Planting will be entrusted to young people.	<ul style="list-style-type: none"> <li>• Financing AGRs for women for nursery management.</li> <li>• Contract with unemployed male heads of household for security operations.</li> <li>• All community assets should be committed to planting with priority given to young people.</li> </ul>
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Nursery of 10,000 plants	2			Women's cooperatives	Local community organisations

Planting of 5 Ha	10			Local taskers	Local community organisations
1 Caretaker for 5 Ha	10			Local workers in a situation of unemployment	Local community organisations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Nursery management	Women/cooperatives	5/10	Local workshop	2 days	The city of Noual
Planting techniques	Community Volunteers	15/20	Local workshop and on-site simulations	2 days	The city of Noual
Technique for the exploitation of forest products from reforestation	Community Volunteers	10/15	Local workshop and on-site exercises	2 days	The city of Noual

**Table 65.** A model of dune fixing proposed by stakeholders in the Nema hub.

<b>This is a typical model of dune fixing project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Nema pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Fixing the dunes of um Avnadech.	Mechanical fixing by clay.	Capital of the commune of the same name, the village of Oum Avnadech is at the northern limit of the area adjacent to the line of the isohyet 150 mm In addition, the living space of this village has fields and pastures essential for the life of the inhabitants. A threat of silting in gestation but real risks compromising all the agricultural production of the inhabitants.	It is a fixation of 10 km long on a depth of 100 m with squares of 20 m x 20 m; i.e. 1,200 m of clayonnage/wattling barriers /Ha. This project should be programmed over a period of 4 years. The height of the clayonnage/wattling barriers is 1.20 to 1 50 m including 30 cm buried in the ground. The material used will be taken from local materials.	The management of these sites will be entrusted to local associations of farmers and citizens of the village of um Avnadech.	Register, as a priority, local farmers and labour for construction work (especially work at HIMO such as planting and supply of clay equipment).
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority



Clayonnage/wattling square (20 x 20)	2500 units			Local taskronnat or citizens' associations	Association of producers and citizens
<b>Training required to be scheduled</b>					

**Table 66.** A model of a pastoral well project proposed by stakeholders in the Nema hub.

<b>This is a typical model of pastoral well project proposed by the actors. It cannot be proposed for any funding and remains an example to illustrate the choice and interventions chosen by the actors of the Nema pole during the debates.</b>					
Integrated intervention proposed by agropastoral communities	Brief description of the intervention	Sites relevant to the intervention	Detailed study of the intervention	Sustainable Management Option	Livelihood options to support the response
Melgue Teïssir forage crop survey (Mabrouk commune).	Drilling of a borehole for forage crop in irrigated mode.	This is an innovative idea to introduce and encourage intensive livestock farming. It is even more relevant as the wilayah of Hodh El Chargui is essentially pastoral.	The objective is to drill a borehole, with an estimated depth of 80 meters, equipped (water tower with a capacity of 40 m <sup>3</sup> , solar pumping kit, drip distribution network etc ...) to irrigate a basin with an area of 10 Ha initially on which will be practiced a fodder crop (alfalfa type for example).	The management of the survey will be entrusted to the breeders' associations.	
<b>Estimation, if possible, of the cost of the intervention</b>					
Unit	Number of units	Unit cost	Total cost	Project Manager	Contracting authority
Finished drill meter	80			Hydraulic company	Breeders' associations
Water tower	1			Hydraulic company	Breeders' associations
Solar pumping kit	1			Hydraulic company	Breeders' associations
Complete drip system	1			Hydraulic company	Breeders' associations
<b>Training required to be scheduled</b>					
Thematic	Target group	Number of participants	Type of training	Duration	Place of training
Drip driving technique	Producers/ Breeders' Association	10/15	Intensive courses	5 to 7 days	ENFVA de Kaédi
Servicing/maintenance of hydraulic structures	Technicians of the association of producers/ breeders	2/3	Intensive courses	7 days	ENFVA de Kaédi

#### Appendix 4: Survey used during the February 2023 mission

**Table 67.** Field questionnaire used to guide the 2023 mission.

THEME	QUESTIONS	ANSWERS
Establish Technical and Coordination Committees (TCCs) in the four target areas	First, what is the best way to ensure that these CTCs facilitate urban-rural linkages to better facilitate the implementation of climate change adaptation interventions in municipalities?	<p>The CTCs to boost the relationship of productions to urban centres will proceed by identifying the sites of activities in collaboration with the administrative and municipal authorities. He will have the village committees chosen by the beneficiaries in a general assembly and thus:</p> <ul style="list-style-type: none"> <li>• Site management should be entrusted to village committees whose members include one or two representatives of the AGPO.</li> <li>• These committees should undergo training on several themes — particularly management, advocacy, development and development of important areas of market gardening.</li> <li>• The use of simple mechanisation is to replace traditional tools that have become archaic and low efficiency.</li> </ul> <p>In conclusion, at the wilayah level, a technical committee for monitoring the project will be constituted by the technical services concerned by the project activities — DREDD as president, delegates from the Ministries of Agriculture, Livestock, Hydraulics, and a representative of the AGPO union as members. At the site level entrust the management of activities to village committees elected by a general assembly of beneficiaries.</p> <p>The municipal council will be responsible for monitoring the activities carried out in its commune and the administrative authority will play the role of general control and supervision at the Moughataa-level.</p>
	Secondly, what is the best structure proposed for these committees to be centred around the oases in each of the target municipalities? For example, is it possible for AGPO to be represented on each of these committees? Is it possible to have a report from them confirming their intention to be part of these CTCs?	<p>During the meetings held in the four poles with the technical services, the administration and the beneficiaries, the success of the mode of organisation and management of the AGPO was confirmed and the AGPO and their union expressed their willingness to be members of the village committees that will be created to ensure the management of the project sites.</p> <p>It should be noted, however, that the mechanism of operation of the AGPO is based on a lucrative system that is not necessarily the one to be adopted by the village committees of the project sites.</p>
	Finally, is it possible to have minutes from the MEDD to confirm the intention of this department to formally recognize the CTCs in the relevant legislature, once these committees are in place?	The legal recognition of these village committees should be a task of the project management unit which should submit an application to the Ministry of the Interior and Decentralization to have a receipt for each of the village committees in order to endow them with legal personality to respond to the name of the beneficiaries and give them the right to collect the funds generated by the sale of ecosystem services.
Payment systems for ecosystem services (PES)	How are ecosystem services currently paid for by local community members?	In some cases, ecosystem services are paid to village committees with a guarding system and the funds are used to pay for guarding and other infrastructure consolidation services. In other cases, ecosystem services are left free with free use, with this often leading to failed reforestation sites.

	Are there specific organisations or individuals receiving payments?	These payments are either monitored by village committees or entirely left unmonitored and the operation of the site is free.
	How are the funds managed?	The collection of funds is monitored by the municipalities. It is important to point out that for what is to be envisaged for the poles, the collection of funds and their management should be done by the village committees, monitored by the communes, and presented periodically to the general assembly of the beneficiaries. The aim is to collect revenue to contribute to the sustainability of the activity — such as the maintenance and repair of water mining equipment, for example. These taxes are mutually agreed by the beneficiaries (village committee).
	How often do community members make payments for ecosystem services — on a use-based basis or at regular intervals?	Depending on the availability of the saleable product and the need for use.
	What have been the obstacles to scaling up these systems across the four hubs? What solutions are proposed to address these barriers?	Payment for ecosystem services is linked to: <ul style="list-style-type: none"> <li>The existence of the service that requires the creation of assets — reforestation and water points. This asset creation is not within the reach of the populations because it requires a significant investment.</li> </ul> The reliable organisation of populations to ensure this management requires the initiative emanating from leaders sometimes uninformed to undertake such an organisation.
	Are PES stakeholders ready for these systems to be formally recognised in legislation to facilitate monitoring and evaluation and redirecting funds towards climate change adaptation interventions?	As soon as the village committees are officially recognised, their actions become implicitly legally valid and can dispose of the use of the funds in question with the validation of the general assemblies of the beneficiaries. They allocate them according to the needs of the communities either for the consolidation of achievements or for the realisation of other adaptation assets.
Potential for private sector participation and financing	Are there private sector actors who could potentially invest in climate change adaptation within the 12 target municipalities? <ul style="list-style-type: none"> <li>Specific industries?</li> <li>Specific companies or individuals?</li> </ul>	Private action for investment in climate change is very limited or non-existent. In the long-term and when the action of the project is successful, some private individuals can invest in Ecotourism and make certain spaces viable for this purpose.
Accounts and fiscal spaces of the Government	Specific details with supporting documentation on national, regional, or local government accounts.	The only information available relates to the existence of regional development funds, of which only 40% is earmarked for investment. These funds are used to support municipal action in several areas. On the other hand, each project should have a national counterpart registered on the State budget and which can serve to complement the actions of the project. This counterpart is generally of the order of 10% and is in kind — <i>inter alia</i> , support of the staff of DREDDs, regional offices, water, electricity.
Market research for major crops	What are the main agricultural crops in each pole? <ul style="list-style-type: none"> <li>Subsistence crops</li> <li>Cash crops</li> </ul>	The populations of the four poles practice three types of cultivation: <ul style="list-style-type: none"> <li>rainfall crops to produce dry cereals such as sorghum, legumes such as beans and watermelons; and</li> <li>irrigated crops such as vegetable, wheat and barley production as well as exploiting date palm.</li> </ul> Rainfall crops are subsistence crops, irrigated and date palm crops are cash crops partially whose production is sold only partially about 1/3 and the rest is self-consumed.

	Do most farmers produce crops for domestic consumption or resale?	Self-consumption constitutes an important part of production between 60–70% of the volumes produced the rest is sold on the surrounding markets and sometimes Nouakchott to cover, <i>inter alia</i> , health expenses and clothing.
	How do local farmers decide which crops to grow? <ul style="list-style-type: none"> <li>• Consumer demand?</li> <li>• Suitability for the environment?</li> <li>• Personal preference?</li> </ul>	Farmers grow crops that they are traditionally familiar with and for which there is a demand.  Some of these crops are adapted to climate change — early varieties of sorghum, date palm, beans.
	Are there opportunities to plant, grow and sell other crop varieties? <ul style="list-style-type: none"> <li>• Are local community members interested in diversifying their crop varieties?</li> <li>• What equipment/training/work is needed to cultivate new agricultural species?</li> </ul>	The variation of cultures that considers water scarcity, desertification and its hazards is highly sought after by the members of the communities of the four poles. It is important to specify that any introduction of new varieties will require supervision and training of farmers on the cultivation method in question and the provision of equipment and seeds.
	What are the barriers to market access for agricultural crops?	The main barriers to market access are: <ul style="list-style-type: none"> <li>• The isolation of the production areas: the tracks connecting the production areas to the Atar – Tidjikja road are almost impassable, and this single road is invaded by sand to the point that it is often clogged over long distances.</li> <li>• Long-term preservation for vegetable speculation because the means of preservation are non-existent, and farmers are always forced to sell off their production at unremunerative prices fearing their loss or depression.</li> </ul>
Interventions in the field	Have any of the interventions of the proposed project already been implemented in the target centres?	Most of the project's interventions have already been tested in the area but on reduced scales and with inappropriate mechanisms.
	Which interventions have been successful?	<ul style="list-style-type: none"> <li>• the fight against silting;</li> <li>• improving the exploitation of the date palm;</li> <li>• protection of crop areas;</li> <li>• setting aside spaces to encourage plant regeneration;</li> <li>• the creation of assets for water conservation;</li> <li>• slowdown thresholds; and</li> <li>• les AGRs.</li> </ul>
	Which interventions failed and why?	The fight against silting resulting from limited follow-up. The creation of water points because of limited prospecting before drilling.
Activity: Facilitate the establishment of restoration	How many municipalities in the four poles have already engaged in these practices?	All the municipalities of the four poles have conducted experiments in the field of adaptation to climate change but always with the support of projects or the State.

plans, community-managed conservation areas and buffer zones around restored areas in selected communes within the target poles		
	Are they effective? Please provide explanations regardless of the answer.	Most of these experiences have had somewhat positive impacts: where communities have been able to develop reforestation areas with support and monitoring, there have been green belts that constitute a real protection against the advance of sands. Water control through reserves has not been tested yet and threshold dams have always had a positive impact
Activity: Rehabilitate degraded landscapes to restore ecosystem functions related to water filtration, dune stabilisation and the provision of natural resources to local communities.	How many hectares in the common visited have practiced dune fixation?	100 ha — ~50,000 <i>Prosopis</i> plants in the Aoujeft moughataa.
	Is it possible to ask the question to the stakeholders met in the municipalities?	
	How many hectares of dune fixation have been introduced in each municipality — or pole, if information at the commune level is not available?	Information not available
	Is there a manpower — in the context of the MEDD or DREDD — for the implementation of dune fixation measures?  A workforce for the implementation of dune fixing measures and for supervision.	At the level of the municipalities visited there is an idle workforce and can boost the work to be carried out by the project.  Technical supervision will be provided by the State services and in particular the DREDD.
	What were the results of fixing the dunes? In the poles you mean? If possible, but otherwise in the municipalities visited. <ul style="list-style-type: none"> <li>• Success?</li> <li>• Chess?</li> <li>• Have the desired impacts been achieved?</li> </ul>	Success for most and failure for some experiments.
	Are the local communities of each hub ready to participate in this activity?	The data confirmed by the interviewees affirm the readiness of the communities to participate in this activity.
	What are the conditions of engagement?	The mayors and population leaders as well as the territorial administration are committed to ensuring the active participation of the populations in the activities of the project. It is even a strong demand from the populations.

		The workforce met asks for symbolic remuneration because they live from day to day from the work they do.
Activity: Create community-based livestock cooperatives to facilitate the adoption of climate-smart livestock management practices	<p>What is the current situation regarding livestock cooperatives in the 12 target municipalities?</p> <ul style="list-style-type: none"> <li>• Are there already livestock cooperatives?</li> <li>• Who participates in these livestock cooperatives?</li> </ul>	<p>The experiences of livestock cooperatives are limited and are often the work of women. The mission visited a successful poultry farming experience in Aoujeft.</p> <p>The method of fattening goats has also proved to be effective — particularly in areas with agricultural residues.</p>
Activity: Train farmers in targeted municipalities in climate-smart agriculture.	What is the current situation in terms of climate-resilient crop production in the 12 targeted municipalities?	<p>The area has experienced drought for several decades and all the vegetation that grows there is somewhat resilient to climate change.</p> <p>The vegetation cover is very small and agricultural production has suffered a drastic decline. It varies from year to year depending on the disturbance of precipitation</p>
	How are farmers already engaging in the production of climate-resilient crops?	<p>Most of the crops grown are resilient — early sorghum, palm.</p> <p>It has become the only choice that farmers have, and any other introduction of new varieties will require new efforts in terms of mastery of the cycle and tools to be filled.</p>
Activity: Provide seeds and equipment for horticultural practices.	<p>What is the current situation regarding seed markets?</p> <ul style="list-style-type: none"> <li>• Where do local farmers have access to seeds?</li> <li>• Is there a demand for seed markets?</li> </ul>	The seed market is characterised by low supply and high demand leading to higher prices.
	Will there be seeds available to introduce the income-generating horticultural activities proposed by the project?	There are seeds for horticultural crops, but their prices are very expensive, and their quality is not guaranteed.
	<p>If not, what solutions are proposed to overcome these obstacles?</p> <p>Will facilitating links between town and country through established CTCs be useful?</p>	A solution for creating a seed bank at the level of each commune would be fruitful as well as the selection of seeds by producers at harvest time and their storage.
Activity: Provide water-efficient irrigation equipment necessary for	What is the current situation regarding irrigation practices in the 12 target municipalities?	All municipalities practice irrigation to different degrees depending on the availability of water and irrigation tools. Irrigation is more common in the poles of Aoujeft and Rachid than in the other two poles where it is practiced timidly.

climate-smart agricultural practices and train communities in the proper use of equipment.	Number or percentage of agricultural land with access to irrigation. In the municipalities visited.	About 30% of the agricultural land of the different communes of the poles of Aoujeft and Rachid have access to irrigation, in the other two poles this rate is about 20%.
	What irrigation methods are used — manual watering, dripping, planting in floodplains, zai pits, half-moons?	Manual watering and drip.
	What water sources are used for crop irrigation — oases, wadis, groundwater, rainfall?	Irrigation uses groundwater but still at the surface stage because of the impoverishment of the population which does not allow them to drill.
	What is the feasibility of scaling up this activity in the four wilayah?	The scaling up of agricultural activity — especially by irrigation — remains conditioned by the provision of water sources and the reliable organisation of populations in EIG, cooperatives or other.
Activity: Facilitate the adoption of sustainable alternative livelihoods in targeted municipalities.	How many projects have already implemented this type of activity in the targeted regions?  Do you mean in the poles? If possible, but otherwise in the municipalities visited.	Several projects have been carried out similar actions but on small spaces and in small numbers.
	Has the introduction of sustainable alternative livelihoods been a success or failure and why?  What means of subsistence should be set? An example, if possible, such as market gardening.	To introduce livelihoods it is important to do what the beneficiaries choose and not impose an activity on them — the populations know their needs — it is enough to support them, train and supervise them, and help them to organise themselves. The needs vary from one site to another.  Often success and failures are always linked to limited follow-up or an incorrect choice regarding the site selection or of the beneficiaries which has reduced the impact sometimes.
	What were the obstacles to scaling up in the municipalities visited?	The cost of creating and installing infrastructure that requires actions is not within the reach of the population. The people always learn the lessons and implement the successes as soon as they have the means.
	What solutions are proposed to overcome these obstacles?	If water sources are made available in all municipalities, it is almost certain that the duplication of activities will be on a large scale by propagation mechanism. There is no reason we should see successes for which they have the means without them undertaking them.  This mechanism can be facilitated by meetings in forums for the exchange of experiences.
	How many market gardens exist in each target municipality?	In the poles of Aoujeft and Rachid, there are dozens of areas cultivated in market gardening but with low yields due to the high cost of seeds, insufficient water and lack of supervision and phytosanitary products. In the other poles, market gardening is not very developed.
	How many nurseries exist within each of the four target poles?	Each attempt at reforestation is accompanied by the creation of nurseries, a dozen in the municipalities visited at the poles of Aoujeft and Rachid in the other poles the practice is less extensive.



The soil of the Mbeirika dam in the Nema pole is completely bare.



<p>Site selection of the hydraulic infrastructure</p> <p>Invest in water collection and conservation measures on the supply and demand side.</p>	<p>How many rainwater harvesting systems (RWH) and storage tanks (5000 L) are needed to improve community access to and storage of water in each target commune?</p>	<p>It is necessary to create a dozen water collection systems at the level of each municipality. Thresholds of pledge to supply the aquifer, small and bunds.</p>
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	<p>Where would community members like to install rainwater harvesting systems? Please provide the rationale for the selection of each site.</p> <p>In each target municipality, please identify the appropriate sites (with GPS coordinates) for the installation of:</p> <ul style="list-style-type: none"> <li>• dikes;</li> <li>• stone dikes/gabions;</li> <li>• injection wells;</li> <li>• water access points (wells);</li> <li>• on communal buildings such as schools, town halls;</li> <li>• in agricultural areas — near agricultural fields, market gardens;</li> <li>• in rangelands for livestock; and</li> <li>• other suggestions.</li> </ul>	<p>The communities wish to install water collection systems at the wadis, which are the places of flow. For dams and ponds: in agricultural areas (<i>graras</i>). For wells and boreholes, they should follow the groundwater availability map according to agricultural needs, the need for drinking water for agglomerations and in areas with pastures for livestock.</p> <p>At this level we were able to identify the coordinates of the following points where agricultural and dune-fixation activities are underway:</p> <ul style="list-style-type: none"> <li>• <b>Reforestation:</b> <ul style="list-style-type: none"> <li>○ Aoujeft: 20°02'21" N and 13°02'24" W</li> </ul> </li> <li>• <b>Graras in need of water harvesting and storage:</b> <ul style="list-style-type: none"> <li>○ Leibhair: 19°36'11" N and 12°35'27" W</li> <li>○ Bedjamoss: 20°05'12" N and 13°3'32" W</li> <li>○ Ain essavra grara: 19°32'24" N and 12° 06'49" W</li> </ul> </li> </ul>
Economic and financial analysis	Estimating average household income.	On average in the four poles, the average household derives its income mainly from agriculture and totals 4600 MRU per month.
	What households get their income from.	<ul style="list-style-type: none"> <li>• the sale of date palm production;</li> <li>• the sale of the production of irrigated agriculture (market gardening);</li> <li>• the sale of agricultural production under rain marginally; and</li> <li>• small trade and some AGR.</li> </ul>

## Appendix 5: List of attendees for February 2023 mission

**Table 68.** List of stakeholders that participated in the 2023 mission consultations.

Hub	Site	Name	Function/Business	Telephone number
Aoujeft	Atar	Med Kneita	Director Labo Palmiers	46056568
Aoujeft	Atar	Houssein Cherif	DR hydraulic	22369469
Aoujeft	Atar	Ghadi Cheibani	Sce Vocational training	22382887
Aoujeft	Atar	Habibeould ahmed salem	Head of Department Ministry of Economy	41881510
Aoujeft	Atar	Med Elhaj Moctar	TAWAZE Farmers' Association	46919524
Aoujeft	Atar	Raskhe Med Moustapha	Regional Oasis Coordinator	22032916
Aoujeft	Atar	Mame Kbare	DR Masef	43439023
Aoujeft	Atar	Sidi Ahmed Sveire	Regional coordinator "Introduction to Sahel irrigation"	47188678
Aoujeft	Atar	Abdrhmane khyar nass	DR Agriculture	44404040
Aoujeft	Atar	Med Brahim Bah	Regional Statistical Unit	46572726
Aoujeft	Atar	Sidi Mhamed Adebe	DR MEDD	44481976
Aoujeft	Aoujefet	Ndide Hamoud	Inspector MEDD	47663500
Aoujeft	Aoujefet	Mbarek Hawibibe	Farmer	44163830
Aoujeft	Aoujefet	Mohamed brahim Koumba	Farmer	44610008
Aoujeft	Aoujefet	Ahmed Mbeirik Bareck	Farmer	34308047
Aoujeft	Aoujefet	Khadijetou Jeireb	Cooperative President	43015708
Aoujeft	Aoujefet	Vatimetou Abdellahi	President Cooperative Network	47584246
Aoujeft	Aoujefet	Khadijetou Choueibe	Cooperative President	47409617
Aoujeft	Aoujefet	Aminetou Masseoud	Cooperative President	48081582
Aoujeft	Aoujefet	Salka Ethmane	Cooperative President	44405610
Aoujeft	Aoujefet	Zeinebou Masseoud	Cooperative President	48984322
Aoujeft	Aoujefet	Mariam Abdrahmane	Cooperative President	49212201
Aoujeft	Aoujefet	Mariam Salem	Merchant	46031417
Aoujeft	Aoujefet	Hassen Said	Farmer	46054469
Aoujeft	Aoujefet	Lalle Bowbe	Cooperative President	49760102
Aoujeft	Aoujefet	Salka Mohamed	Cooperative President	46031782
Aoujeft	Aoujefet	Ahmed Elkewri	Farmer	44512888
Aoujeft	Aoujefet	Tahya Hmein Amar	Cooperative President	46724992
Aoujeft	Aoujefet	Mawloud Barka	Civil Society Organization (CSO)	36072594
Aoujeft	Aoujefet	Cheikh Med Lemine	Farmer	46757243
Aoujeft	Aoujefet	Med Abdrahmane	President.AGPO	48641524
Aoujeft	Aoujefet	Alioune Babiye	CSOs	47689005
Aoujeft	Aoujefet	Dahi Med Mbarek	Farmer	48559358
Aoujeft	Aoujefet	Med Salem Mbeirik	Cooperative President	46469029
Aoujeft	Ain Savra	Ahmed Nah	Farmer	37938586
Aoujeft	Ain Savra	Ahmed Desri	Manoeuvring	47467037
Aoujeft	Ain Savra	Sid'ahmed Mbairkatt	Transporter	33393295
Aoujeft	Ain Savra	Dah Benbakha	Breeder	37759576
Aoujeft	Ain Savra	Ahoudy Sidna	Farmer	34989655
Aoujeft	Ain Savra	Med Salem Soule	Farmer	33225577
Aoujeft	Ain Savra	Moctar Bellamach	Breeder	31567652
Aoujeft	Ain Savra	Sidi Hamdi	Farmer	36991180
Aoujeft	Ain Savra	Abdou Lebyadh	Merchant	38389955
Aoujeft	Ain Savra	Hademin Hweirthi	Driver	37467066
Aoujeft	Ain Savra	Med Maaloum	Mine worker	32131056
Aoujeft	Ain Savra	Sidi Seyboude	Unemployed	37543792

Aoujeft	Ain Savra	Moulay M'hamed Moulay Brahim	Unemployed	37915812
Aoujeft	Ain Savra	Aminetou Sayde	Unemployed	33217092
Aoujeft	Ain Savra	Abeydi selmou	Manoeuvring	37612565
Aoujeft	Ain Savra	Med Mahmoud Chadhily	Farmer	34636949
Aoujeft	Ain Savra	Abdellahi Med Moctar	Farmer	38172251
Aoujeft	Ain Savra	Mohamed Abidine	Manoeuvring	33270705
Rachid	Rachid	Elkory Bowba	Farmer	46521557
Rachid	Rachid	Med Moctar errabi	Farmer	46569676
Rachid	Rachid	Med ejehah	Farmer	46085597
Rachid	Rachid	Ahmed edjé	Farmer	47440877
Rachid	Rachid	Emmed Hambel	Farmer	46040471
Rachid	Rachid	Med Mhamed	Farmer	46043031
Rachid	Rachid	Abderahmane ezein	Farmer	41661450
Rachid	Rachid	Mariam Ahmed	School Director	46414241
Rachid	Rachid	Fatimetou med	P coop	46706210
Rachid	Rachid	Levreiha Heimada	CO-OP President	428994510
Rachid	Rachid	Ahmed Saleck	Farmer	44351680
Rachid	Rachid	Amar Muftah	Farmer	46884015
Rachid	Rachid	Med moctar Levdhil	Farmer	44327191
Rachid	Rachid	Sid Ahmed Weiss	Teacher	46402710
Rachid	Rachid	Sidi Ahmed Seyedna	Deputy Mayor	46558944
Rachid	Tidjikja	Salimou Taleb Abderahmane	Wali adjoint	44481039
Rachid	Tidjikja	Med lemine ezein	Hakem tidjikja	4448037
Rachid	Tidjikja	Med yarba haini	Livestock inspector	46515668
Rachid	Tidjikja	Elhadrami abdel kader	Forest ranger	36987099
Rachid	Tidjikja	Med elkori	Dr. Hydraulic	46447486
Rachid	Tidjikja	Sidi nefah	DR agriculture	44490197
Rachid	Tidjikja	Isselmou Med Ahmed	Deputy Mayor	46479088
Rachid	Tidjikja	Med ahme med mahmoud	Wali Councillor	33163167
Rachid	Nimlan	Isselmou sid ahmed	P. CO-OP	41898068
Rachid	Nimlan	Med brahim ahmed	Municipal Councillor	46043015
Rachid	Nimlan	Med sid elkhair	Notable	46536318
Rachid	Nimlan	Traiba moctar	President Co-op Union	46253245
Rachid	Nimlan	Nguya ameira	Cooperative President	41963920
Rachid	Nimlan	Med elemine	Farmer	49390247
Rachid	Nimlan	Itawel oumrou bab ahmed	Farmer	41743956
Rachid	Nimlan	Jenja houbain	Farmer	41743859
Rachid	Nimlan	Med mbeiri	Farmer	46765601
Rachid	Nimlan	Elmoctar sidi Khouna	Breeder	46550132
Nema	Jraiv	Baba Messoud	Cooperative President	27934386
Nema	Jraiv	Sidi Baba	Farmer	26365513
Nema	Jraiv	Dah Salem	Cooperative President	20859409
Nema	Jraiv	Abdellahi Ahmed	Farmer	26040422
Nema	Oualata	Sidaty Deih Moulaye Cherif	Mayor	46409372
Nema	Oualata	Sidi Merzoug	Alderman	47554723
Nema	Oualata	Dah Med elmoctar	Alderman	46490737
Nema	Oualata	Ezzy Mint Dida	Alderman	44400716
Nema	Oualata	Mahmoud Messoud	Farmer	
Nema	Oualata	Zeini Elhacen	Cooperative President	41771081
Nema	Oualata	Nana Dida	Cooperative President	43331094
Nema	Nbeiket ahwach	Sidam Med Val	Mayor	46200063
Nema	Nbeiket ahwach	Med lemine Kahli	Deputy Mayor	44140618
Nema	Nbeiket ahwach	Lalla mint Sidi	Cooperative President	49367721
Nema	Nbeiket ahwach	Vatma mint bahim	President poultry cooperative	without

Nema	Nbeiket ahwach	Vatma mint Mini	President of the Slaughter Cooperative	without
Nema	Nbeiket ahwach	Lehnina mint brahim	President of the market gardening cooperative	without
Nema	Umarvinadech	Sheikh Tourad Sidibeya	Mayor	27727239
Nema	Umarvinadech	Hamadi Baba ahmed	Alderman	44702290
Nema	Umarvinadech	Cheikh ahmed Moctar	Alderman	47605065
Nema	Umarvinadech	Med Elmoctar MedLaghdaf	Farmer	48480754
Nema	Umarvinadech	Med lemine baba alwa	Breeder	48001500
Nema	Umarvinadech	Mettou Med Cheikh	Cooperative President	46519916
Nema	Umarvinadech	Fatimetou Sidi med	Cooperative President	48171513
Nema	Noual	Cheikhata med	Mayor	22873303
Nema	Noual	Cheikh Baba ahmed	Deputy Mayor	27838083
Nema	Noual	Mahfoudh Sheikhummy	Alderman	28266670
Nema	Noual	Bahah med saghir	Alderman	26289290
Nema	Noual	Sid Mhamed Ould Mbareck	Breeder	without
Nema	Noual	Yahefdhu Inejih	Farmer	without
Nema	Noual	Isselek ha elwedani	Cooperative President	without
Nema	Noual	Mahfoudha taleb amar	Cooperative President	without
Nema	Noual	Elghadva mint eida	Cooperative President	without
Nema	Noual	Isselemha mint sheikh	Cooperative President	22266670
Tamchekett	Mabrouck	Ahmedou Tfeil	Deputy Mayor	46086181
Tamchekett	Mabrouck	Mariam Med Mahmoud	Councillor	44903202
Tamchekett	Mabrouck	Raghya Khliwa	Cooperative President	44810050
Tamchekett	Mabrouck	Sheikh Teghra	Breeder	47116235
Tamchekett	Mabrouck	Elmaloum Sidi med	Breeder	43488999
Tamchekett	Mabrouck	Eteyib Med Mahmoud	President of the Youth Association	44902333
Tamchekett	Mabrouck	Khadijetou mint Braik	President of the Agricultural Cooperative	41495387
Tamchekett	Mabrouck	Med mahmoud sidi med	Carrier	47968115
Tamchekett	Mabrouck	Elghaouth med mbareck	Farmer	47649863
Tamchekett	Mabrouck	Sid el moctar o/ cheikh	Breeder	47151406
Tamchekett	Tamchekett	Sidi O/ Abeida	Deputy Mayor	26785513
Tamchekett	Tamchekett	Aminetou Zeidane	Councillor	46477680
Tamchekett	Tamchekett	Abdellahi Cheikhna	Civil society organization	27218807
Tamchekett	Tamchekett	Limam Bedida	Farmer	48029789
Tamchekett	Tamchekett	Hefdh allah o/ el mabrouck	Breeder	49786188
Tamchekett	Tamchekett	Abderahmane o/ elvaleh	Breeder	48125274
Tamchekett	Tamchekett	Sidi o/ salem	Farmer	46098240
Tamchekett	Tamchekett	Med Med Elabd	Farmer	48121254
Tamchekett	Tamchekett	Sidi O/ Ejemma	Breeder	47956872
Tamchekett	Tamchekett	Ahmed Mahmoud	Farmer	44537815
Tamchekett	Tamchekett	Khaitna med	Councillor	44668411
Tamchekett	Tamchekett	Hamad O/ Messoud	Farmer	48403459
Tamchekett	Gaet Teidoum	Fatimetou Elabd	Councillor	37614143
Tamchekett	Gaet Teidoum	Elkhaye Sidi Med	Farmer	36876620
Tamchekett	Gaet Teidoum	Sidimed Saleck	Farmer	37710317
Tamchekett	Gaet Teidoum	Oumara mint Med	Cooperative President	36136215
Tamchekett	Gaet Teidoum	Med Saleck	Farmer	32921346
Tamchekett	Gaet Teidoum	Fatimetou Med	Cooperative President	38095714
Tamchekett	Gaet Teidoum	Isselmou Ahmed	Farmer	30516246
Tamchekett	Gaet Teidoum	Mahfoudh Brahim	Alderman	36457542
Tamchekett	Gaet Teidoum	Brahim Med Mahmoud	Youth Association	47782888
Tamchekett	Gaet Teidoum	Med abderrahmane Saleck	Farmer	33729177

## Appendix 6: List of working group discussion participants at June 2023 Validation Workshop

**Table 69.** List of participants within each working group

Group 1	<ul style="list-style-type: none"><li>• Adrar DREDD</li><li>• Mayor Ain Safra</li><li>• Mayor Maire Om Afnadech</li><li>• 1 Réprésentant SC du Pôle Néma</li><li>• Deputy Mayor NBeykitt Lehwach</li></ul>
Group 2	<ul style="list-style-type: none"><li>• Chaired by M. Fall (retired national consultant)</li><li>• Lehmane (Hodh El Gharbi delegate)</li><li>• Oumar Mohamed (Tamchekekket delegate)</li><li>• Ousmane</li><li>• Bonko Sejdi Sidibe</li></ul>
Group 3	List not provided
Group 4	List not provided

**Appendix 7: List of all attendees at June 2023 Validation Workshop**  
(Images provided by UNEP)

AGENCY		UNEP					
MEETING TITLE		GCF validation workshop in Nouakchott, Mauritania					
MEETING DATES		20th June 2023					
MEETING VENUE (CITY/COUNTRY)		Nouakchott, Mauritania					
EVENT NUMBER		A000013342					
APPLICABLE QUARTER		2nd Quarter					
TRAVEL ADMINISTRATOR		Ruth Mutinda					

PAGE 1: ATTENDANCE LIST - 20TH JUNE 2023							
No.	Title (mr., ms., etc.)	NOM NAMES	ORGANIZATION	Email Address	Telephone Number	Passport/ID Number	Signature
1	Mr.	Saleck	MASEF	sojereb4@gmail.com	(222) 46431208	SF0485326	
2	Ms.	Maroum Mortar Mehemid	AMSETRA (MEDD)	mima.Majom@gmail.com	31442440	3145574686	
3	Mr.	Zein	MEDD/DEU	medzeine@gmail.com	32 222 969	8315987608	
4	Mr.	Sellani Ahmed Salem	MEDD/DEV	marredsalen@gmail.com	37211127	4963005183	
5	Mr.	Sylla Hamedine	MEDD/DPCS	shamedine@gmail.com	46042348	B02708647	
6		Eleyton	MEDD/DEU	abdelmehdye@gmail.com	46596446		
7	Mr.	Malikine Ahmed	MEDD	dahmoud64@gmail.com	44340310	111820423	
8	Ms.	tebrah/sidi	MEDD DECE	tebrahksidi@gmail.com	20 969321	5032353502	
9	Mr.	Adamou Bouhari	PAUE	adamou.bouhari@un.org	+2224437 9067	—	
10	Mr.	ELWAVI	MEDD				
11		Ahmedou/mini	DREDD/PA	Ahmedou1991@gmail.com	27112710	4974036892	
12		Miom Fall	MEDD	lunef13@gmail.com	49479061	—	
13		Isselmou	Tijigja		46479088	548163720	
14		Sou Mohamed	MEDD	mohamedsoumail.com	46047376	—	
15		Neinote	MEDD		462532	—	
16		Sidi Ahmed Siouling	MEDD	SidiAhmed964@gmail.com	46558944		
17							



AGENCY	UNEP
MEETING TITLE	GCF validation workshop in Nouakchott, Mauritania
MEETING DATES	20th June 2023
MEETING VENUE (CITY/COUNTRY)	Nouakchott, Mauritania
EVENT NUMBER	A000013342
APPLICABLE QUARTER	2nd Quarter
TRAVEL ADMINISTRATOR	Ruth Mutinda

PAGE 2: ATTENDANCE LIST - 20TH JUNE 2023

No.	Title (mr., ms., etc.)	NOM Name	Name of ORGANIZATION	Email Address	Telephone Number	Passport/ID Number	Signature
18		Moussa KEILA	Consultant Local	moussakouley@yako.fr	33555054		
19		Ahmed Salem SELLANI	MEDD/DCV	mohamedsalem@gmail.com	37291127		
20		Elyotou Med Abderrahmane	MEDD/DCV	abderahmane8@gmail.com	46596446		
21		Demba CAMARA	DIRAM/MEDD	Demba.camara@gmail.com	49382355		
22		Mohamed Koukoury	Le Koukoury	medkoukoury@yahoo.fr	46883290	1630177717	
23		Moulay Bakka	Bakka	moulaybakka@gmail.com	36072194		
24		Med Abderrahmane	Abdeljeil	MedAbdeljeil@gmail.com	48641824	6636806667	
25		Mohamed Taghioullah Khatri	Taghioullah	taghiou@gmail.com	22641054		
26		Ahmedou mini/ Abdi	DRED/Tagant	ahmedou.199@gmail.com	27112710	4971036892	
27		Maloum Bougri	MEDD		26808067		
28		Med Abdellahi Beikha	DIPREM/NEPD	eloullah59@gmail.com	4654784	2663514756	
29		Longmane Bekay	DESD/H. d.	legmane@gmail.com	46940812		
30		Aminetou mint Zeine	Hadj El Gharbi		46477680		
31		Moumène mint Rachid	Hadj El Gharbi		36136215		
32		Sidiy Moqmed Adjebe	DRED/ADRAR	ssidi moqmed@gmail.com	44481976		
33		Bonko Seydi Sidibe	ANLNU/ MEDD	Sidibebonko@gmail.com	46410236		
34							