DATE OF RECEIPT:
ADAPTATION FUND PROJECT ID:
(For Adaptation Fund Board Secretariat Use Only)

PROJECT/PROGRAMME PROPOSAL

PART I: PROJECT/PROGRAMME INFORMATION

PROJECT/PROGRAMME CATEGORY:	**Regular**
COUNTRY/IES:	**Mauritania**
TITLE OF PROJECT/PROGRAMME:	**Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in Mauritania**
TYPE OF IMPLEMENTING ENTITY:	**Multilateral Implementing Entity (MIE)**
IMPLEMENTING ENTITY:	**United Nations World Food Programme**
EXECUTING ENTITY/IES:	**Ministry of Environment and Sustainable Development (MDEDD)**
AMOUNT OF FINANCING REQUESTED:	**US$ 7,803,605 (over 4 years)**

FIGURES, TABLES AND ANNEXES

I. PROJECT / PROGRAMME BACKGROUND AND CONTEXT:

Three quarters of Mauritania's territory of about 1 million square kilometers is desert, and only about 10 percent is arable. It is one of the Sahelian countries that have been hardest hit by successive droughts over the past 30 years.[1] Mauritania's *Programme d'Action National d'Adaptation* (PANA, National Adaptation Programme of Action, 2004) identifies pastoralism and agriculture as the most vulnerable sectors to climate change, and highlights that food insecurity could be exacerbated under a scenario of higher temperatures and more erratic rainfall (see below) due to lower quality and quantity of livestock and agricultural output.

With a Human Development Index (HDI) of only 0.433, Mauritania ranks 136th of 169 countries.[2] The poverty rate in rural areas is close to 60 percent, with 30 percent of the population living in extreme poverty[3] . The country has always been highly food deficient, producing only about 30 percent of requirements. Twenty five percent of the rural population is food-insecure, and they are concentrated in the agro-pastoral zones in the south-east, which is the focus of the proposed project.[4] Half of rural households lack access to safe drinking water.[5]

Forty percent of the population (estimated at about 3.3 million in 2011 and having doubled over the last 25 years) is younger than 14 years old. The overall weak population density varies widely between regions, with the largest concentrations found in the capital of Nouakchott, the port of Nouadhibou, and along the river Senegal in the south. The share of the urban population has increased from 3 percent in 1960 to 41 percent in 2010.This rapid urbanization [6] is spurred by an exodus from rural areas, where a combination of human and climate-induced factors is leading to the degradation of the productive base for almost a third of the country's population. Nevertheless, because of population growth, the absolute number of people leading nomadic lives has also increased in the last 25 years. There is also a higher percentage of women among these groups than in urban areas due to the migration of men in search of employment in the cities.

Climate Change Trends and Scenario

Mauritania's climate is dry, hot and windy, and thus severely exposed to the effects of desertification. Most of Mauritania receives very little rainfall at any time of year. The southern edge, which reaches the Sahel, has a wet season (up to 200mm of rain fall per month) which is controlled by the movement of the Inter-Tropical Convergence Zone which oscillates between the northern and southern tropics over the course of a year. Variation in the latitudinal movements of the ITCZ from one year to another causes large inter-annual variability (see below). Most of the precipitation is concentrated between July and September and isolated storms are increasingly frequent, resulting in heavy rainfall in short periods and creating flash floods. At the same time, part of the southern edge can go without rain for a year or more.

Mauritania experienced long years of drought in the 1970s and 1980s which affected food security in key vulnerable areas. According to FAO, average rainfall dropped considerably from 30 to 60 percent, depending on the agro-ecological area. This drop resulted in shifting the aridity limit further south, thereby reducing the amount of land suitable for agricultural production and also putting stress on sources of water for livestock. The 150 mm isohyet

[1] Government of Mauritania, National Action Plan – Combat against Desertification (PAN-LCD)
[2] UNDP, Human Development Report 2010
[3] High-Level Task Force on the Global Food Security Crisis country visit report 24–29 January 2010
[4] Mauritania Food Security Monitoring System report, June 2010,
[5] WFP, Country Programme 2003 - 2010
[6] An overall urbanisation rate of 2.9 percent has been established.

calculated for 1977–1987 was placed close to the location of the 250 mm isohyet of the 1941–1970 period – in other words, the desert had extended by an area of 150,000 km^2. A steady decrease of precipitation was observed between 1970 and 2000. Figure 1 shows how the bands of identical rainfall have moved about 200 km southwards between 1961 and 2001.[7] In direct correlation with the observed reduction of rainfall, the desert has steadily advanced southwards.

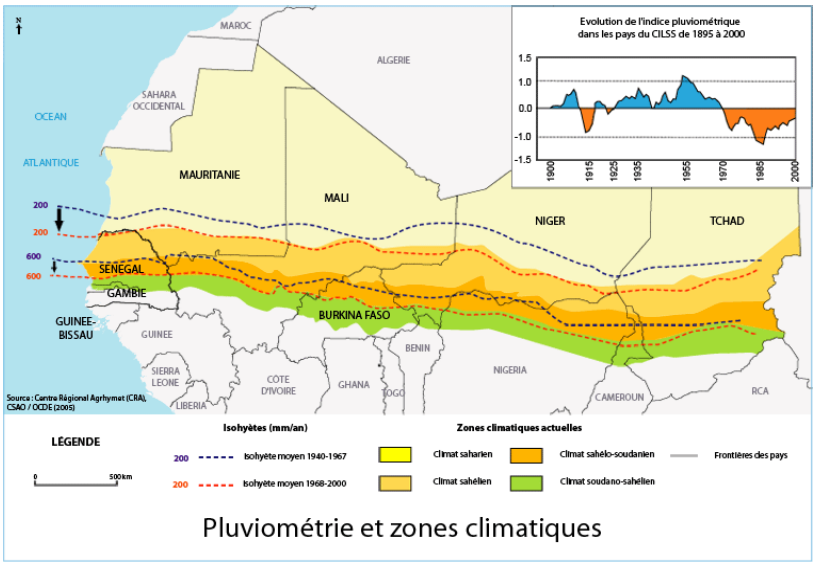

Fig. 1: Movement of isohyets in West-Africa, Centre Regional Agrhymet (CRA, 2005)

Figure 2 depicts the Atlantic Multi-decadal Oscillation index (AMOi), which measures the medium surface temperature of the North Atlantic, excluding the long-term tendency of a temperature increase due to global warming. The figure shows a close correlation between the AMOi and Sahelian rainfall.

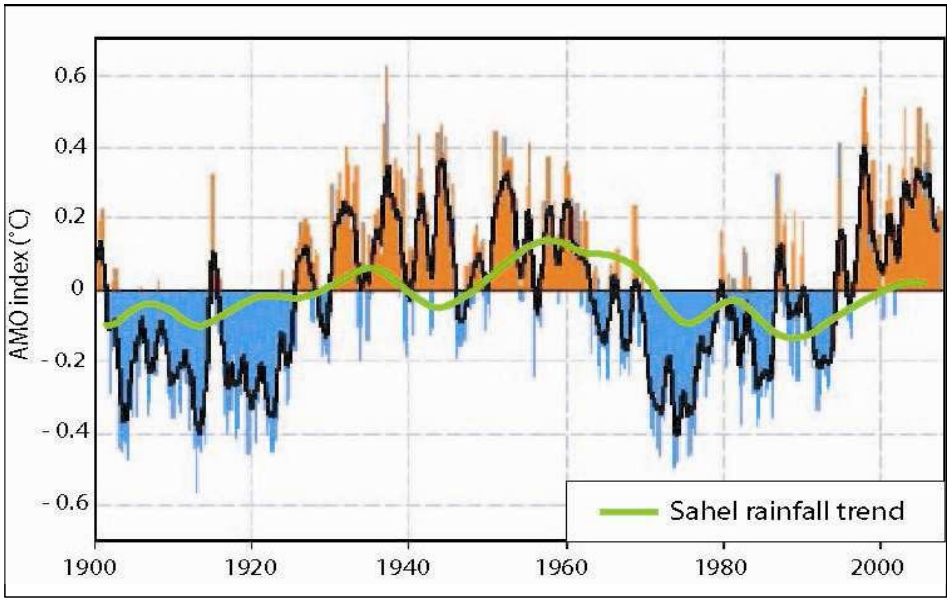

Fig. 2: Atlantic Multi-decadal Oscillation

A decrease in precipitation and persistent drought in the Sahel from the 1960s to 90s (green line) resulted from the concurrence of a warming trend in the equatorial Indian Ocean (shown in inverse sign by the orange line) together with multi-decadal cooling of the North Atlantic (blue line). This concurrence of events had not occurred during the previous 100 years of observation of sea surface temperatures (SSTs) and rainfall, suggesting that the drought could have resulted from anthropogenic influences. Equatorial Indian Ocean warming since the 1960s is consistent with the expectation of planetary warming associated with the increased influence of anthropogenic greenhouse gases (Barnett et al. 2005; Du and Xie 2008). [8]

[7] Centre Régional Agrhymet (CRA), CSAO/OCDE (2005)

[8] While Indian Ocean warming highlights the contribution to Sahel rainfall from the long-term linear trend expected from the increase in greenhouse gas emissions, the alternation of warm and cool decades in North Atlantic sea surface temperature emphasizes the influence of natural decadal variability (Knight et al., 2006; Ting et al. 2009). However, cooling of the North Atlantic may have also resulted in part from anthropogenic influence: as the atmospheric concentration of sulfate aerosols, a

The continued southward advance of the desert is more alarming because it has persisted even while medium-term climatic variations as a result of the ITCZ have meant less pronounced droughts since the beginning of the 1990s. This is because rainfall has not increased as it did in the comparable positive oscillation period between 1930 and 1960. This means that once the present oscillation recedes to levels comparable to the 70s and 80s, with an accompanying prolonged dry-spell, a further acceleration of desertification can be expected

With respect to temperature, the UNDP Climate Change Country Profile shows that the average annual temperature in Mauritania increased 0.9°C since 1960 (an average rate of 0.19°C per decade) and that the rate of increase is faster in the hot and dry season, which is 0.34°C per decade. The mean annual temperature is projected to increase by 1.3 to 3.8°C by the 2060s, and 1.8 to 6.0°C by the 2090s. The range of projections by the 2090s under any emissions scenario is 1.5 to 2.5°C. The

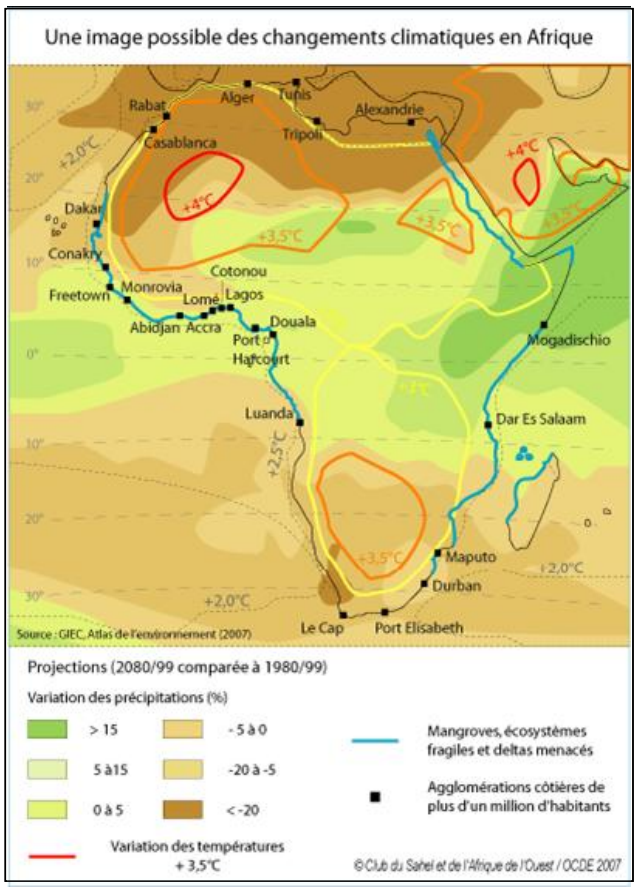

Fig. 3: Africa CC Scenario (OECF, 2007)

projected rate of warming is faster in the interior regions of the country than in those closer to the coast. Projections show substantial increases in the frequency of days with above normal temperatures and nights which are below them. Mauritania's Second National Communication indicates that precipitation will decrease by at least 20 percent (see Figure 3).[9] The results of different models that envisage more or less dry or wet scenarios suggest that precipitation should tend towards a decrease ranging from -65 to +28%

Climate Change Impacts

A downward trend in precipitation would be detrimental to agro-pastoral livelihood zones in marginal environments with just enough rainfall. Also of concern is the possibility that

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by-product of fossil fuel combustion, increased with industrialization so did the reflection of solar radiation back to space, a net cooling effect that partially counteracted the warming in the northern hemisphere (Rotstayn and Lohmann 2002; Chang et al 2010).

This ocean-influenced change in precipitation is a broader regional feature which has caused declines in monsoonal rains (June-September) and declines in rainfall during April-June at latitudes south of 10°N in West Africa (Giannini et al. 2008). This region comprises the source region of the Niger River which provides water for irrigation and secession flooding, allowing for agriculture in the central/Sahelian region of Mali where rainfall is limited. Therefore, changes in precipitation patterns can have an adverse impact on both rainfed and irrigated agriculture.

[9] It has to be noted that the overall decrease of precipitation does not exclude local increases, which have been observed increasingly in past years, resulting in inundations of low lying areas with poor drainage facilities.

precipitation would occur less frequently but more intensely in these zones, leading to overall drier years with more flood events.

As recently as the 1980s, 70 percent of Mauritanians were nomads and subsistence farmers. In the past thirty years, recurrent droughts have forced many of these people to move to the cities. But cities are finding it difficult to cope with the influx. There is high unemployment and a severe lack of social services. Almost half of Mauritania's population, and 75 percent of the country's poor, still depend on agriculture and livestock. And these activities generate about a third of the country's GNP. For these reasons the Government has made it a priority to make rural livelihoods more resilient to the impacts of climate change. Mauritania's Programme d'Action National d'Adaptation identifies desertification and its impact on land and water resources - and their impact, in turn, on livelihoods and food security - as a key issue, highlighting that pastoralism and agriculture are the most vulnerable sectors in the country

Agricultural and herding practices have always been tenuous in the country's hot, dry climate. Rain-fed and "*derrière barrage"* cultivation are the main cropping systems and have long been exposed to variability in rainfall. Agricultural production systems are not advanced and there is still little or no use of fertilizer. Over thousands of years, pastoralists and farmers have developed adaptation strategies to cope with variations in the weather. These principally focused on moving to areas which were less hot and dry and not overpopulated, and developing and protecting water resources. In recent years, agricultural diversification and temporary emigration and employment have been added as coping strategies.

None of these strategies are as robust as they used to be as a result of climate change. Climate change has further exposed unprotected soil, raised temperatures and dried out wells, and compromised land management practices that were at least marginally sustainable. Since 1968, the plant growth period has decreased by 20 to 30 days.[10] It is estimated that since 1970 some 150,000 km2 of Mauritania has turned to desert[11,] with populations constantly retreating from areas becoming uninhabitable. As a result, there has been a reduction of livestock and a sedentarization of herds around large agglomerations. Animal diseases are on the rise and animal deaths are more common.

Degradation continues to be exacerbated by recurrent droughts, thus contributing to the expansion of the desert and reduction of cultivable area. As a result, more people are farming and herding on smaller pieces of land, there is increased competition between cropping and livestock, and farmers are increasingly using marginal soils that are sensitive to erosion. Wide scale sedentarization is reflected in the proliferation of villages along the transhumance axes and paved roads. And among and within villages there is a widening disparity of wealth favoring those with the means to acquire land and livestock and further impoverishing crop and livestock farmers who sell to them during shocks. In short, traditional pastoralists are abandoning their nomadic lifestyle, selling their livestock and becoming destitute.

The average agricultural income is below the poverty threshold. Due to their sedentary nature, the systems associated with agriculture are vulnerable to the availability of pasture land. Although nomads have traditional access to these resources, there is competition and tension with other users. As a result, incomes are meager, forcing people to sell their animals at prices which don't allow them to purchase productive capital. Some cope by finding additional sources of income, often the cutting of tress for charcoal production. When all else fails, they migrate to the cities.

[10] Government of Mauritania, PAN-LCD
[11] Government of Mauritania, PAN-LCD

The overall effect on rural incomes and rural food security can be devastating. According to FAO,[12] domestic food production has declined over the past forty years. The production index[13] has fallen from 161 in 1969-71 to 97 in 2005-2007. This reduced agricultural output leads to reduced income for rural populations, thereby exacerbating poverty and decreasing their purchasing power to buy food. Poor rural households allocate up to 80 percent of their income to food; many have had to cut back on other expenses such as health and education, sell their assets and reduce their consumption of meat and dairy products. Acute malnutrition in children aged 6–59 months is 12.5 percent nationwide – well above the World Health Organization threshold – with peaks above 18 percent.[14] Choric malnutrition affects as much as a third of the population in the center of the country, and in the south east which is the target of the proposed project.

Government Commitment to Overcoming Barriers to Adaptation

Largely because of its precarious climate, Mauritania is one of the largest recipients of donor assistance in Sub-Saharan Africa. Agricultural and rural development initiatives have made up the bulk of support with the aim of stimulating the rural economy, improving agricultural productivity, promoting sustainable land management and improving food security. However, these and other interventions which fail to explicitly build the resilience of local populations to climate change and to overcome the barriers to adaptation may not be sustainable.

The project is being proposed by the Delegated Ministry of Environment and Sustainable Development (MDEDD) as a key element in the national adaptation strategy (PANA, 2004), which will be updated in part on the basis of information used and consultations carried out for the appraisal and launch of the project, as well as a response to the concerns expressed in the Government's Second National Communication. The project will build on the efforts of a number of earlier interventions which focused on natural resource management (see Section F), to more explicitly address climate change impacts on resource degradation and food security and the capacity of communities to plan for and mitigate climate shocks. The project also represents the Government's desire to make more concrete other core strategies, including the new Poverty Reduction Strategic Framework (2011-15), the National Action Plan for the Environment (PANE), and the National Strategy for Sustainable Development (SNDD). These programs mark an important shift in the Government's approach in that they explicitly recognize the important role agro-pastoralist play as stewards of the environment and commit to building their awareness and capacity to take action, going beyond natural resource management to tackle the need for longer-term sustainability in the face of climate change.

Critically, the Government recognizes the need through the project, to break down existing barriers to adaptation, including: 1) lack of information at all levels on understanding and managing climate risks, 2) weak local and national capacities to develop climate change strategies and adaptation measures and ensure their dissemination and replication, 3) poverty and the lack of resources to invest in soil and water preserving assets at the community and household levels, 4) lack of alternatives to short-term, unsustainable coping strategies, and, 5) institutional fragmentation which results in the lack of a coherent strategy and projects that are complementary.

[12] FAO. Food Balance Sheet Mauritanie 2005-2007.
[13] FAO's agricultural production index shows the relative volume of the annual agricultural production compared to a base value of 100 in 1999-2001.
[14] UNICEF, Standardized monitoring and assessment of relief and transitions (SMART), 2010

The Government understands that desertification and the southward expansion of the desert is not exclusively caused by climate change. Rather, it is the result of a number of interrelated factors, many of them human, in particular overgrazing and deforestation. Figure 4[15] illustrates the mutually reinforcing connection of climate and human factors which the project intends to address. This picture does not represent a scientific model, but serves to illustrate the interrelationship between the most important natural and human factors contributing to observed deterioration. Additional factors include changes in temperature (which are still difficult to predict, including their effect on plant growth, evaporation, etc.) and wind patterns which can have significant impacts on soil erosion and the advance of the desert.

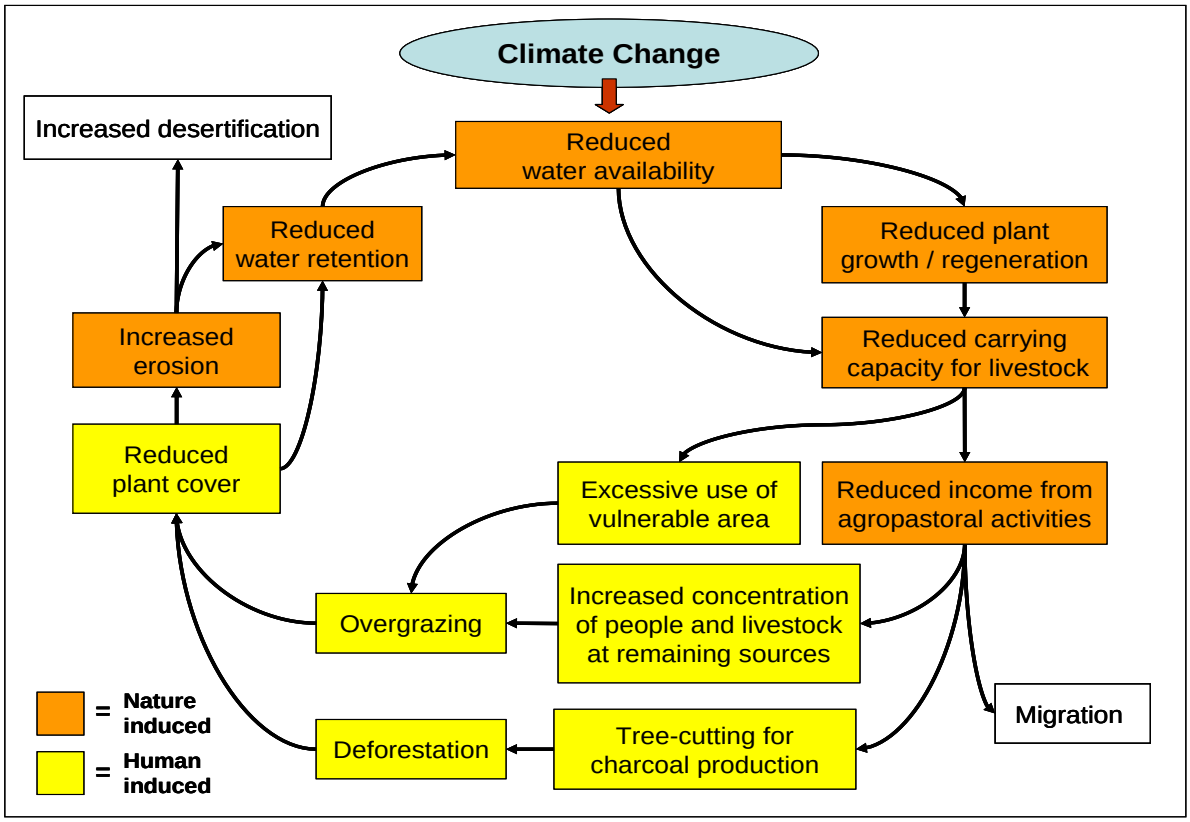


Fig. 4: Climate and Human-Induced Desertification

[15] Figure and explanation are based on Government of Mauritania, National Action Plan – combat Against Desertification.

Project Area and Target Groups

The project area (Figure 5) extends through the southern band of the country, covering the zones with the highest rates of food insecurity and malnutrition.[16]

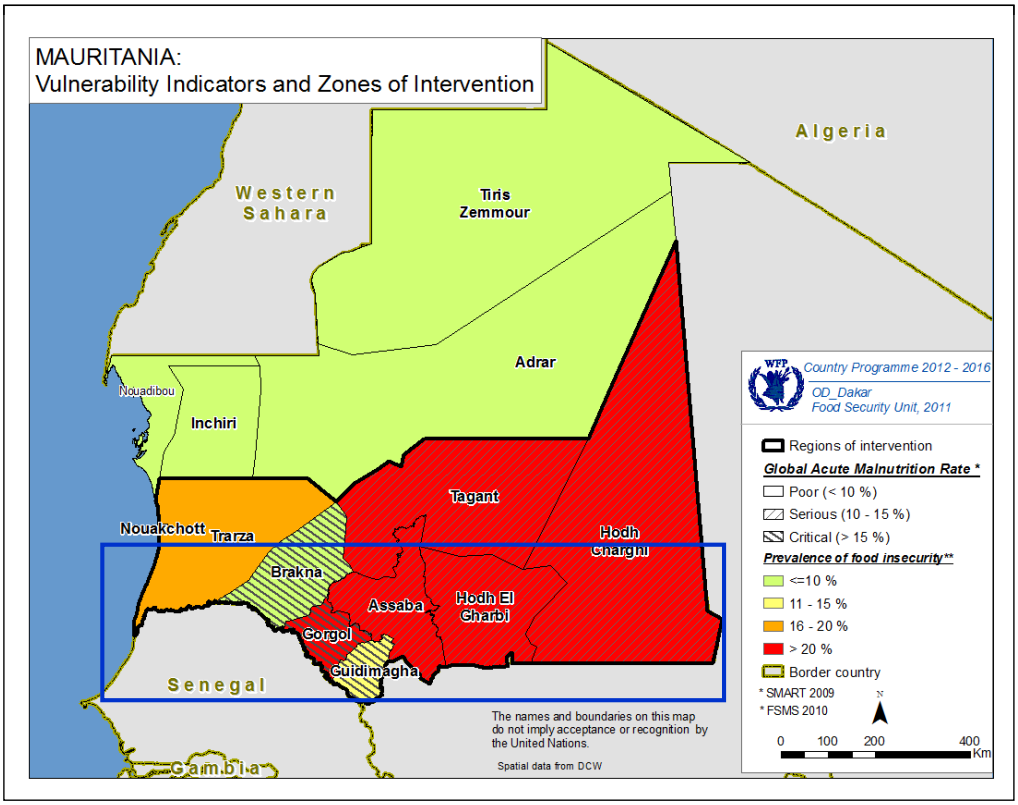


Fig 5: Map with Malnutrition Rates, Food Insecurity and the Project Area (blue frame)

The project area covers mainly the livelihood zones of transhumant pastorals, agro-pastoralists, and for rainfed cultivation – **livelihood zones 4, 5 and 6** respectively in Figure 6 and Table 1, below. The following regions (wilayas) will participate in the project:

- Trarza
- Brakna
- Gorgol
- Tagant
- Assaba
- Gudimaka
- Hodh El Gharbi
- Hodh El Chargui

Within each region, the project will work with 2-3 groups of villages, each clustering 5-6 villages according to their ecological and social-economic characteristics. The methodology for such clustering has been established and tested through cooperation between MDEDD and the German International Cooperation (GiZ) as part of the "Programme de Gestion Décentralisée de Ressources Naturelles (ProGRN I + II, see description, below).

[16] The agro-pastoral east and south are Mauritania's most food-insecure areas, especially during the April–September lean season. WFP's 2009 food security assessment estimated that 21 percent of the population was food-insecure (9 percent severely food insecure and 12 percent moderately food insecure). The highest food insecurity was found in the south-eastern regions: Hodh ech Chargui (48 percent), Assaba (28 percent), Gorgol (28 percent), Hodh el Gharbi (24 percent) and Tagant (17 percent).

Fig. 6: Map of Livelihood Zones (Fews-NET)

The project area is also where soil degradation in the country is determined to be “severe” or “very severe” (see Figure 7).

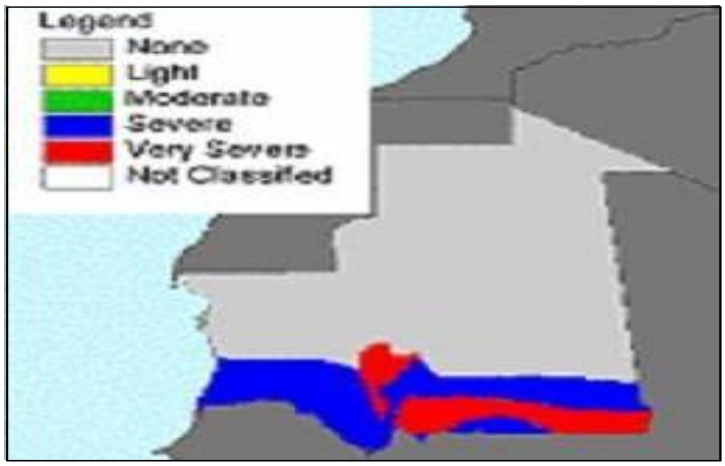


Fig. 7: Degree of Soil Degradation (PANA 2004)

Agro-ecologique zone	Regions	Caracteristics and food security situation
Zone 1- Pastoral Nomads	- Most of Adrar, Hodh El Chargui, Tagant et Tiris-Zemmour - About half of Hodh El Gharbi	• Zone with the lowest population desnity of th ecountry • Insufficiant rainfall for cultivation. Exclusive pastoralism • All cereals and other essential consumption goods must be purchased, through sale of livestock and animal products or occasional labour income (e.g. livestock herd for richer families). • Milk production: August-September (camel, bovine, sheep), December-January (goats) and February-march (camels). • Lean season: June-July
Zone 2- Agro-pastoralism with cultivation in wadis and oases	- Inchiri, Trarza - Small part of Tagant et Tiris-Zemmour - (Towns of Nouakchott et Nouadhibou)	• Arid and semi-arid zone • Date production is profitable only to a few families, but sourrce of regular employment. Sale of harvest in August-November • Mainly livestock, but in oases and temporary water currents (wadis) and close to 2 large coastal towns offer market for local products and seasonal employment as well as remittances from migrants. • Harvest and sale of vegetables, and ceral harvest : January-February • Milk production : August-September (camel, bovine), December-February (sheep)
Zone 3- Traditional coasting fishing	The entire western coast	• Weak population density • Proftiable and stable price for fish allow fishermen to subsist. • Period of low prices: Agusut-October. • Main constraints : Distance to towns, markets and services
Zone 4- Transhumant pastoralism	Part of Trarza	• Insufficent water resources for cultivation, but relatively good pasture • Proximity to the road between Nouakchott and the border town of Rosso provides access to a commercial network for fresh milk. • Milk production: August – November (bovine), and july-september (sheep, goats) • About 20% of households have lost their livestock and live from occasional labour around villages.
Zone 5- Agro-pastoral	- Most of Assaba, Brakna and Gorgol - About half of Hodh El Gharbi - Small part of Hodh El Chargui	• Large zone, considered the poorest and most subject to food insecurity. • Majority of households combine agriculture and livestock. Those depending on livestock normally live better. • Following natural disasters (mainly drought), many people have migrated to towns • Harvest: October-December (rainfed) and Janaury-March (valleys) • Milk production: Auguust - October • Migration for seasonal work : February - June • Lean season : August - September
Zone 6- Rainfed Cultivation	- Most of Guidamakha - Smal part of Hodh El Gharbi and Gorgol	• Most populated zone of the country • Mainzone for rainfed sorgho and millet production • Harvests : October – December (rainfed cultures) and January-February (valleys) • Livestock is favoured by proximity to seasonal pastures in Mali and Senegal • Milk production: July - October and February – March • Large share of the population with seasonal migrant workers (towards towns) and abroad (Northern Mali), mainly between March and June. • Food insecruity only in very bad years. • Lean season : Augsut - September
Zone 7 – Senegal River Valley	The whole band, including small parts of Brakna, Guidimakha, Gorgol and Trarza	• Zone with highest population density • Irrigated rice is main production niche, but not always competetitive with Senegal, and depending on costly inputs. • Harvests: June – July (off-season rice), October – November (rainfed rice) and February – March (cereals after river inundations). • Milk production (limited): August – January (Bovine, sheep) and November – January (goats) • Competition for migrant labour with migrants from other zones. Main migration season is March – July. • Dependence on remittances from migrants to town and Mali. • Widespread poverty

Table 1: Food Security Characteristics in the Farming Zones

The project will focus on the provision of technical services to government extension staff and community leaders. It also aims to build community assets through food or cash-for-work programmes for about 84,000 households which are the most food insecure and most vulnerable to climate change. These households have the following characteristics:[17]

[17] FEWSNET. Mauritania Livelihoods Profile. USAID. March 2005.[17]

- They live on an average family plot of 1.3 ha, varying between 0.5 ha in pastoral zones and 2.4 ha for rain-fed agriculture.[18]
- They possess only a few head of livestock, mainly goats, and less often cattle.
- They do not have direct access to the Senegal River or other relatively abundant sources of water, as the low-lying lands in the vicinity of the river are occupied by densely populated villages.
- They are completely dependent on rainfall. They often live on marginal lands, in the immediate vicinity of steadily encroaching sand dunes
- They are asset poor, as established by the Food Security Observatory (an assessment of the prevalence of productive assets in the area.)[19]
- They depend for their livelihoods on small, irregular activities, involving daily or seasonal employment provided by more affluent households (often for payment in kind such as milk from herded livestock), or on seasonal or permanent migration of household members.
- In direct correlation with their poverty, their level of caloric intake is unacceptably low.[20]
- They do not produce sufficient food for their own consumption and spend between 75-78 percent of their income on food.[21] They are thus highly vulnerable to food price volatility.

Additional socio-economic characteristics for the agro-pastoralist zone can be found in Annex 2.

Adaptation in these areas must go beyond business as usual, beginning with rooting the ownership of interventions in the communities, linking community actions through support from technical agencies in the field, ensuring that there are institutions at national level that are creating a supportive policy and regulatory environment, and ensuring that the broader national strategy for climate change adaptation is informed by lessons that are emerging from the ground.

Breaking the barriers to successful adaptation will be challenging. Encouraging ownership in very poor people, whose first inclination in the face of climate shocks is to sell assets, and often to migrate, will require a breadth and depth of presence in the field to raise awareness about climate threats and adaptation options and instill confidence that solutions can be found. Specialized knowledge in climate change cannot be confined within the meteorological office of the departments in charge of the environment. Regional delegations and representatives of the line ministries and agencies in charge must be trained and have the capacity and resources to service a large geographic area. Successful adaptation will require a distinct focus on the empowerment of women, who increasingly make up the bulk of the work force in these areas. And it will require a means to ameliorate immediate food insecurity in order give people incentives to adopt climate resilient strategies and practices.

[18] CSAO-CILSS. Food security profile Mauritania, April 2008; WFP, Comprehensive Food Security and Vulnerability assessment (CFSVA), 2006
[19] WFP, Study of secondary data on food security in Mauritania, April 2011
[20] See for example Food Security and Nutrition Assessment 2009, WFP / Food Security Monitoring System
[21] WFP, Study of secondary data on food security in Mauritania, April 2011

II. PROJECT / PROGRAMME OBJECTIVES:

The project will promote enhanced environmental governance through ecological monitoring, the management and sharing of climate change knowledge, and the mobilization and involvement of communities to adapt to climate change and build resilient food secure livelihoods. These activities are a priority of the Government's decentralization plan and the accelerated implementation of national adaptation and environment protection strategies at the local level pursued by MDEDD.

The project will support Government technical staff and local NGOs to access, analyze and use climate-related information in combination with food security, livelihoods and vulnerability data; and to support communities by facilitating participative local prioritization processes. Communities will be assisted in devising their own adaptation plans, and to implement them in ways that ensure the sustainability of the assets they create.

The overall goal of the project is to enhance the resilience of vulnerable communities to the effects of climate change on food security. This goal will be pursued by (a) strengthening government services to support communities in their participative development and implementation of local adaptation and natural resource management plans (component 1); and (b) mobilize communities to invest in resilience and climate change adaptation (component 2 and 3).

Project objectives are fully aligned with the Adaptation Fund Results Framework at the outcome level. The alignment is illustrated in Annex 5.

Component 1: **Support technical services and the communities they serve to (a) better understand climate risks, their impact on livelihoods and food security; and (b) facilitate participatory decentralized adaptation planning.**

Objective: Enhance the understanding and capacity of government and the communities it serves to facilitate and undertake participatory adaptation planning

Component 2: **Design and implement concrete adaptation measures identified through community adaptation planning that aim to combat desertification and land degradation**

Objective: Improve the long-term sustainability of the productive ecosystems needed to support climate-resilient and food secure livelihoods.

Component 3: **Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population**

Objective 3: Increase the resilience and food security of communities and households through livelihood diversification and sustainable use of natural resources.

The project involves a two-stage strategy:

1) The initial focus will be on the establishment and strengthening of the institutional and technical capacity for well-informed, participative and community-owned adaptation planning. Under component 1, the capacity of regional technical services and community leaders will be strengthened to retrieve, analyze and convey relevant climate-change information,

beginning with vulnerability analysis; and to lead and guide the formation of village clusters and help them prepare community based adaptation plans.

Vulnerability analysis will determine the villages where adaptation plans will be implemented; where village clusters can be formed according to ecosystem/landscape and socio-economic conditions; the criteria for the selection of participating households (asset poor, no alternative income, etc.); and when interventions would be undertaken. Specific selection criteria will be determined through a participatory process with the communities, who will be directly involved in the selection process and organization of work for asset creation.

2) Components 2 and 3 will focus on the implementation of adaptation plans through the provision of technical assistance, material support, and food- and cash-for-work and training. During the implementation of these components the training provided to regional technical services and communities under component 1 will continue.

Regional teams will be formed, headed by the regional representatives of MDEDD (or DREDD) , and including relevant technical services (e.g. agricultural and rural development extension staff), and they will be supported by contracted partners, including civil society organizations and private sector partners. The DREDD will be responsible for ensuring that regional teams provide the guidance to communities and technical oversight required, and will be responsible for monitoring and reporting. Through such responsibility, the DREDD is expected to maintain support to communities after the project closes, and indeed to extend support to other village clusters and regions.

A rough implementation schedule illustrating this approach is shown below:

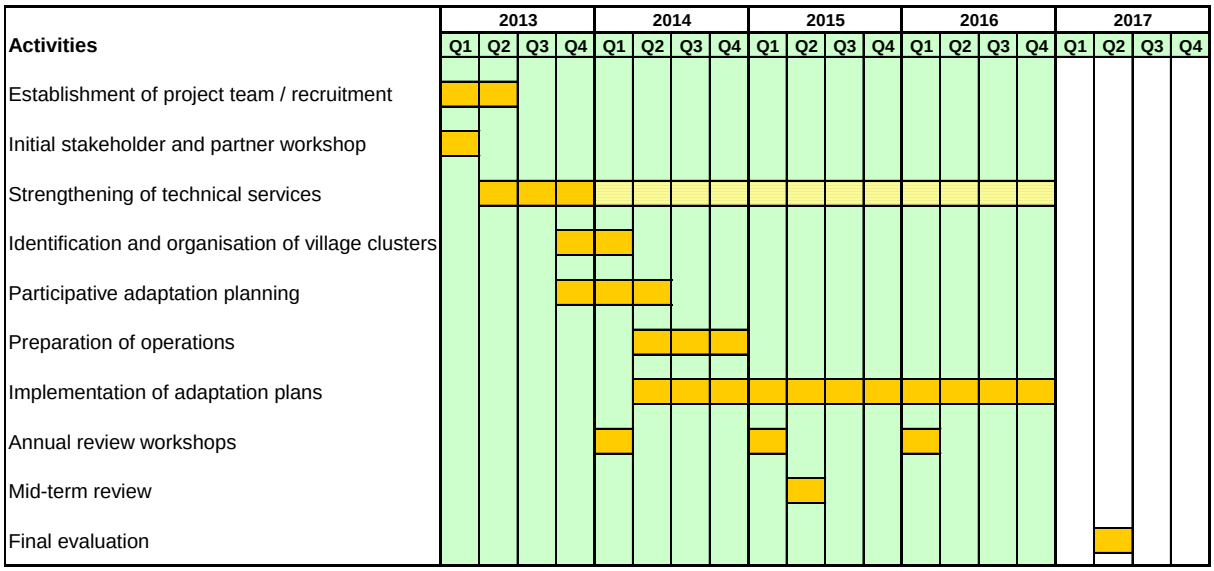


Fig. 8: Indicative Project Implementation Schedule (Disbursement schedule is on page 50)

PROJECT / PROGRAMME COMPONENTS AND FINANCING:

TABLE 2: EXPECTED RESULTS (AN OUTPUT BASED BUDGET AS WELL AS BUDGET NOTES ARE PROVIDED IN ANNEX 1)

Project components	Outputs	Outcomes	Funding request (US$)	Other finance (US$)
1. Support technical services and the communities they serve to better understand climate risks, their impact on livelihoods and food security, and devise relevant and realistic adaptation plans and measures	**1.1**. Technical services strengthened to access and analyze climate change in combination with food security, livelihoods and vulnerability information, monitor local development, and mobilize and support communities. **1.2** Strengthening of Government's threat, risk and vulnerability analysis capabilities by expanding current Vulnerability and Analysis methodologies to overlay climate threats and monitoring changes in landscapes using GIS technologies.	**Outcome 1.1:** Strengthened awareness, ownership and facilitation capacities of government services (DREDD)	**1,789,456**	533,800
	1.3. 20 inter-village associations established and supported. **1.4.** Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food insecurity. **1.5**.100 villages, clustered according to landscape, ecosystem and livelihoods, have prepared adaptation plans that are integrated into local development planning, and adaptation technology requirements identified. **1.6**. Communities share success stories and lessons learned, including through the establishment of 4 community radio stations focused specifically on sharing information on early warning and adaptation management.	**Outcome 1.2:** Strengthened awareness, ownership, planning and management capacities at community level for local natural resource management and climate change adaptation		
	1.7. Monitoring system in place (establishment, training, production of data and reports) to track climate events and ecologic development in project intervention zones.	**Outcome 1.3:** National ecologic monitoring system strengthened and tested		
2. Design and implement concrete adaptation measures identified through community adaptation planning that aim to combat desertification and land degradation	**2.1**.1,500-2,000 ha of dunes fixated. **2.2** 1,000-1,500 ha of vulnerable zones protected. **2.3** 1,000-1,500 ha of community fuel wood forests planted.	**Outcome 2.1:** Advance of sand dunes slowed down or halted **Outcome 2.2:** Increased vegetation cover in intervention zones	**2,498,250**	117,600
	2.4 Water retention structures built covering approx 500ha.	**Outcome 2.3:** Decreased loss of water and soil through surface run-off		

3. Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population	**3.1** Approx 300,000 trees for revenue generation and food planted in protected areas. **3.2** 4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilization. **3.3.** 5,000 technical staff and community leaders trained and equipped for plant/seed multiplication. **3.4** 4,000 technical staff and community leaders trained and equipped for poultry development. **3.5** 1,000 technical staff and community leaders trained and equipped for apiculture. **3.6** Approx 20 community cereal banks established. **3.7** 30,000 fuel efficient stoves provided. **3.8** 2,000 community members (mostly youth) trained to build and maintain fuel efficient stoves.		**Outcome 3.1:** Increased number of sources of income for participating households **Outcome 3.2:** Increased income for participating households **Outcome 3.3:** Increased availability of and access to food for participating communities	**2,253,520**	80,000
Totals:			**7,272,626**	**6,541,226**	731,400
Project execution costs	9.5 % (for AF)		924,335	**684,335**	240,00
Project management fee	8.0 %		578,044	**578,044**	0
Sub-Total:			**8,775,005**		
Government contribution			-971,400		
Amount of financing requested:			7,803,605		

Project Execution Costs (see Budget Annex)

Project Management Fee:

Finance, Budget and Treasury	144,511
Performance Management	115,609
Information & Telecoms	57,804
Audit and Inspection	57,804
Legal	57,805
Program Support	144,511
Total	578,044

The management fee component of the budget covers the costs of services provided by WFP headquarters in support of the implementation of the proposed project. A breakdown of the specific functional areas follows:

Finance, Budget and Treasury
General oversight, management and quality control
Ensure conformance with WFP judiciary standards and internal control processes
Manage, monitor and track financial transactions
Manage all AF financial resources through a dedicated Trust Fund
Human resource management
Procurement and supply management
Support in the identification of suppliers and cost efficient procurement processes

Performance Management
Provide technical support in the areas of risk management, screening of financial and risk criteria and indicator selection
Provide guidance in establishing performance measurement processes
Technical support in methodologies, TOR validation, identification of experts, results validation, and quality assurance
Dissemination of technical findings within the country and the broader adaption community

Information & Telecoms
Includes maintaining information management systems and specific project management databases to track and monitor project implementation

Audit and Inspection
Ensure that financial management practices comply with AF requirements and support audit actions as required
Ensure financial reporting complies with WFP and AF standards
Ensure accountability and incorporation of lessons learned

Legal
Legal advice to assure conformity with WFP legal practices and those of the country
Contract review

Program Support
Technical support, troubleshooting, and support missions as necessary
Specialized policy, programming, and implementation support services
Evaluation support

PROJECTED CALENDAR:

Milestones	Expected Dates
Start of project	January 2013
Midterm review	December 2014
Project Closing	December 2016
Terminal Evaluation	April 2017

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. *Describe the project components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience.*

Component 1: Support technical services and the communities they serve to better understand climate risks, their impact on livelihoods and food security, and devise relevant and realistic adaptation plans and measures

The component aims to improve the analytic and skills base of Government technical services at decentralized levels in order to enable them to mobilize and support communities to undertake their own analysis of climate change impacts and prepare detailed adaptation plans – including harmonized plans for livestock, land and water management and the overall use of natural resources.

Most Government plans and strategies require technical capacity to retrieve, analyze and use relevant and up-to-date information, including at the local level . This is particularly true for the DREDD and their inspectors at departmental level. These services need to communicate with communities, mobilize them and provide them with expert services. This way of working is at the heart of the National Communication of 2008 and its objectives for participative management of land, water and forest resources; the Strategic Framework for Poverty Reduction (CSLP III) and its aim to empower the poor through their improved use of natural assets; and the National Strategy for Sustainable Development (SNDD) and National Action Plan to combat desertification (PAN – LCD, see section II.D) and their commitments to strengthen the role and participation of civil society and promote decentralized government structures.

A critical element of the proposed project is the strengthening of technical services that are responsible for carrying out climate change and vulnerability analysis and reaching out to communities to help them use information and analysis to prioritize and take informed decisions. This component lays the essential foundation for the viability and sustainability of components 2 and 3.

1.1. Technical services strengthened to access and analyze climate change in combination with food security, livelihoods and vulnerability information, monitor local development, and mobilize and support communities

Training and awareness raising at technical levels will be conducted which will focus on climate change adaptation as part of the Government's new plan for rural extension that focus on community organization and training to optimize agro-pastoral production. At national level the plan will build on the participation of public and non-state actors (following the recommendations of the FAO study "Proposal for an approach to rural extension in Mauritania" carried out in 2010-2011). The plan will address the need to harmonize methods and approaches across sectors and landscapes, strengthen coordination between various actors, and improve results. The plan is based on an organizational framework that considers the characteristics of different agro-ecologic zones, the density and spatial distribution of the population (including in terms of poverty levels) and the response capacity of the state at regional and local levels. The proposed project is intended to significantly strengthen Government's efforts along these lines.

The regional technical services to be strengthened include first and foremost the DREDD in the regions covered by the project. At present, the central Ministry, MDEDD, has a total of 480 staff. Of these, not fewer than 385 are based in the capital, Nouakchott, while only 95 are based in the regions and departments. This means that the DREDD often have only a single delegate per region, at times with an assistant, plus one inspector per department.

Of the staff attached to DREDDs, 90 percent are involved principally in control and repression through "forest police" services. They possess neither the qualifications nor the means to respond to the demands of a population subject to more unpredictable and severe weather. They certainly do not play a tangible role in regional planning or in guiding and supporting community-based adaptation planning.[22]

MDEDD is addressing this structural weakness – starting with the institutional review of the environment sector carried out in 2011 and early 2012. Based on the review and the recommendations arrived at through consultations at regional and national level, regulatory, organizational and budgetary changes are expected, including the decisive strengthening of DREDDs through the proposed project. Indeed, the project will form an important element of this strategy, providing DREDDs with initial training, the establishment of work routines for regular retrieval and analysis of information, and basic equipment. The project will enable DREDDs to fill the knowledge gap between central, regional and local levels. UNDP's ARTGOLD project has in recent years worked to address weakness of Government at regional level by strengthening links between central government, decentralized communes and local communities. The proposed project will also work closely with that effort.

The training of technical staff will build on the joint approach and common standards promoted as an outcome of the recent FAO study on the state of agricultural extension services. [23] Crop and livestock farming in Mauritania as a whole contribute 20 percent to GDP (5 percent is attributed to agriculture and 15 percent to livestock). Besides land degradation and difficult access to markets, one of the principal underlying causes for the low productivity in the rural sector is the limited supply of productive services, particularly agricultural services.[24] The FAO study found that demand and supply of agricultural extension services do not correspond to the needs of producers and are not adapted to recent developments in the sector. The improvements proposed in the study hinge on strengthening research, training and extension capacities, as well as improving cooperation and harmonization between services. The activities proposed under component 1 will strengthen the analytical and out-reach capacity of agricultural services and their cooperation with other technical services, in particular environment, but also water and public works.

About 200 technical staff at different levels will be trained under the project, including 30 engineers, 60 "techniciens supérieurs" and 110 "agents techniques". Training subjects will strengthen outreach and participatory work with villages and will include general aspects of natural resource management and inclusion of village adaptation plans into regional planning.

For all general training the project will use the newly revived National School for Training of Agricultural Extension (ENFVA) at Kaédi.[25] Founded in 1962, the school underwent a number of institutional transformations before closing in 1995. Its revival is an important part of Government's strategy to strengthen staff capacity, particularly at decentralized level, and particularly in natural resource management. The revitalization of the ENVFA is being undertaken jointly by MDEDD and MDR.

The technical focus of training will include such areas as dune fixation and erosion control; forest regeneration and management; irrigation techniques; apiculture; and seed selection and conservation. Training for DREDD will also include computer literacy and text treatment, computer training with respect GIS and VAM, use of the Internet, including the search, retrieval, selection and analysis of information, and understanding the overall planning processes and the roles of stakeholders at different levels in the planning process.

[22] The descriptions of the DREDD is extracted from the recent "Institutional Revue of the Environment Sector" (RISE-régionale) and the discussions during the restitution workshop.
[23] FAO, Proposition d'un dispositif de conseil agricole en Mauritanie, 2011
[24] Government of the Islamic Republic of Mauritania, project proposal "Support to the adaptation of agricultural production systems that are vulnerable to climate change", April 2011
[25] Ecole Nationale de Formation en Vulgarisation Agricôle

A training module will be developed to help officials and communities assess local threats (see 1.4, below).

1.2. Strengthening Government's threat, risk and vulnerability analysis capabilities by expanding current Vulnerability and Analysis methodologies to overlay climate threats and monitoring changes in landscapes using GIS technologies

Output 1.2 will strengthen the capacity of government services to obtain relevant data and map it; to agree on harmonized priority actions in view of observed trends; and to feed into and draw benefit from a national ecological monitoring system (see output 1.7).

The output targets national government services which will support DREDD and other regional service providers with information and analysis. The national services include the Commissariat Sécurité Alimentaire (CSA), the technical services of the Ministry of Environment, and the Ministry of Rural Development. Two entities are specifically involved in the collection, analysis and distribution of climate change related data: The National Office of Meteorology (ONM) under the Ministry of Transport; and the Agro-Meteorological Service (SAM) under the Directorate of Agriculture, Ministry of Rural Development. The ONM was created in 2006 with the objective to collect all meteorological activities at national level and to provide user-friendly products to end-users and assist in foreseeing and mitigating extreme climate events. It carries out its mission along five axes: (1) monitoring; (2) research; (3) modeling; (4) provision of services; and (5) international cooperation. The ONM has established a system for the reception of satellite data. It produces regular bulletins as well as early warnings in case of need. At present, the ONM is in the process of elaborating climate indices for the assessment of climate changes (temperatures, humidity, etc.).

The SAM was created following the establishment of the Inter-State Committee for the Fight against Desertification in the Sahel (CILSS) (1974), from which it continues to receive ad hoc support in terms of material. The SAM (1) maintains an operational network for agro-meteorological observation and monitoring; (2) collects and rapidly transmits data at national and regional level by use of radios, the regional communication station IMMARSAT, and through the internet; (3) treats and distributes agro-meteorological information through regular bulletins and radio transmission in national languages; and (4) accompanies the agricultural campaigns among others with the collection and diffusion of agro-meteorological / climate data, and the provision of an early warning system for food security.

However, the available information and analysis is at present not sufficiently understood and utilized by its foreseen end-users. The sub-component will carry out a specific study to map the various actors and their interplay with the aim to identify gaps in the present system, covering the entire continuum from data collection through analysis, inter-departmental coordination, decentralized disaggregation and application until the practical orientation at cluster, community and household level. Based on the results of this study, the project will promote inter-institutional agreements and will support training and equipment at the required levels to assist in closing gaps. This will include training of staff of the relevant institutions and levels to access and analyze up-to-date information from national and international sources on climate change and adaptation trends and experience, to interpret information in the context of local impacts and options, and to convey it to communities. The project will also support the ability to access and analyze satellite imaging and monitoring.

1.3. 20 inter-village associations established and supported

1.4. Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food insecurity

1.5. 100 villages, being clustered according to landscape, ecosystem and livelihoods, have prepared adaptation plans that are integrated into local development planning.

Outputs 1.3, 1.4 and 1.5 will be undertaken by regional teams, led by DREDD, and will include additional relevant government technical services (those trained and equipped in output 1.1). The teams will be supported by civil society and private sector actors.

Their first task will be to identify clusters of villages in which to work. The identification will follow participatory methodology tested over the past decade which has been made possible by revised legal frameworks, in particular the revised pastoral (2004) and forest (2007) codes and application decrees (2009), which anticipate the possibility of transferring exploitation rights to local "collectivités". This practice has been developed and tested with so-called "Local Collective Management Associations" (AGLC)[26], or inter-village associations, through the GiZ-financed ProGRN. The proposed project will use the same MDEDD-approved methodology, building on local conditions and existing cooperative arrangements.

MDEDD and its partners who are supporting the establishment of AGLCs are acutely aware of the importance of the involvement of women. To date, an average of about 20 percent of responsible posts in AGLC are occupied by women – which is considerable given the country's strong traditions favoring the role of men in public affairs

The project will work with 100 villages. Some will have existing associations, others will have new AGLCs supported through ProGRN, and others will create new associations through the proposed project (the latter is a specific Government request). The proposed number of village takes this into account against the level of available resources and the estimated costs of project activities per village. The scale is sufficient to establish good practice across the project area and provide a critical mass that can trigger spontaneous replication.

DREEDs will develop and implement an awareness campaign to inform communities of the threats of climate change and potential adaptation solutions. They will work with local communities, through participatory workshops, to give particular attention to the threats that climate change poses to production systems, water management and food and nutrition security. A gender approach will be integrated in all training and awareness campaigns. *The project aims to ensure that at least 50 percent of community members trained are women.*

It is crucial that communities are directly involved in activity planning and implementation, and that locally relevant decisions are taken at community level and with the involvement of community-based stakeholders. Communities in the project area are linked by the landscape and ecosystem in which they are located, not least through the mobility of pastoralists. Meaningful adaptation plans must take into account such linkages. Working with communities, and led by regional teams, the project will adopt an ecosystem and livelihood approach around which village clusters will be selected The approach will promote the integration of a holistic planning process into regional and local development planning and harmonize village adaptation plans across landscapes. While some villages will have activities designed solely for their own use, most will undertake interventions which will be of use for a cluster of villages.

Costing Note. 1 *Activities at the village level are costed based on the assumption that villages will be covered in clusters, which will include on average 5 villages. The size of village clusters is limited by the vast distances between villages;[27] and the need to ensure*

[26] "Associations de Gestion Locale Collective"

[27] A lesson learned from ProGRN is that the maximum distance within a cluster should be what can be covered by one day of travel on camel-back.

quality and effectiveness. MDEDD and WFP will explore further cost efficiencies as in-depth community consultations are undertaken.

The selection of village-clusters will build on a tested, participatory methodology for AGLCs. It will be carried out through a consultation process between villages and the administration (including the CSA), facilitated by regional teams. Selection will be based on food security and other socio-economic factors, natural resource degradation and potential for improvement, the presence of community structures to share knowledge and build and sustain assets, and the willingness to participate. Before village clusters prepare adaptation plans, technical services will determine regional priorities and establish the planning directives as required for regional harmonization, based on national strategies and priorities and regional vulnerability analysis

Figure 9 illustrates the institutional framework within which the AGLC will work, with MAE, MDEDD and MDR providing support through de-concentrated services at regional and departmental level. An explanation of the roles played by actors at different levels follows.

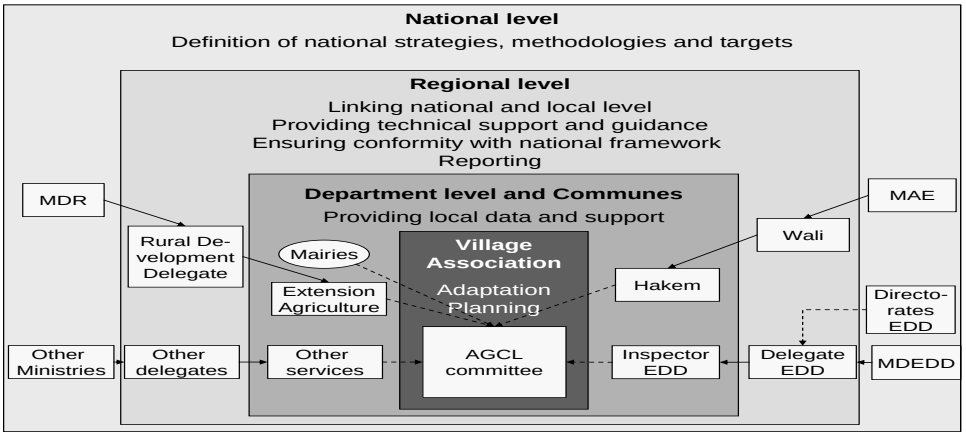


Fig.9: National Institutional Framework

At national level, Government (MDEED) will be responsible for

- the articulation of the climate change challenge and ensuring that the cross-cutting nature of climate change is adequately reflected in relevant sector policies, strategies and programs;
- the provision of an adequate regulatory, institutional and resource framework, establishing processes and structures within which various institutions have clear mandates and the capacity to carry;
- establishing adequate work methodologies, norms and standards;
- establishing overall priorities (thematic, geographic etc.) and targets for national adaptation efforts;
- establishing and running of a comprehensive monitoring system providing reliable and timely information on climatologic and ecological developments

Regional authorities (DREED) constitute the vital link between national and local stakeholders. They

- Translate and disseminate national regulations, priorities, methodologies and standards;
- Translate national priorities – through a consultative process – defining regional major threats, priorities and targets;
- Monitor local developments by consolidation of departmental reports on ecological, climatic and socio-economic indicators, and report back to the national level.

Department and rural municipality ("commune") authorities (DREED at department level) assist regional authorities by establishing and maintaining a dialogue with local communities.

Finally, village clusters are responsible specific local adaption planning and implementation, including

- Ensuring awareness and participation of all communities and sub-groups within the village cluster with respect to climate change threats and adaptation options;
- Managing a participatory process of consultation and prioritization with respect to the strategic choices to be taken by the village cluster;
- Overseeing the preparation of local adaptation plans, including the clear definition of obligations and rights of the participating villages and different user groups, and implementation schedules;
- Overseeing the implementation of the adaptation plans, including discussion on household eligibility criteria for food- or cash-for-work participation, work norms, and monitoring of progress made;
- Overseeing the maintenance of physical assets created through the participating villages, and taking action with its members in case of negligence or other need to intervene; and
- Sharing of information among participating villages, neighboring villages as well as with the departmental and regional level.

The identification of AGLCs, their legal constitution, establishment of boundaries, zoning and stock-taking of vegetation and other socio-ecologic conditions will take about one year.[28] The articulation of village association plans, and the identification of adaptation technology requirements, will determine the nature, size and distribution of activities implemented through components 2 and 3 of the project.

Representatives in consultation fora established for each village cluster will be trained in ecological and social monitoring, climate change (including where and how to obtain climate change related information, and how to use it), conflict resolution, and adaptation planning. The training foreseen under output 1.3 aims at increasing the understanding at village level of climate change issues and potential adaption measures. This will create the basis for local discussions and decisions on concrete adaptation plans. Output 1.3 will also include training of trainers in the technical services in order to strengthen their capacity for outreach and engagement with communities.

Costing Note 2*: The training budget for this output is supported through output 1.*

Costing Note 3: *A number of activities under component 1 can be summarized under the modality heading of community mobilization. However, the outputs are distinct. The total budget foreseen for this modality is just under 1 million US$. The project plans to work with at least 100 villages, organized in about 20 clusters of five villages on average, hence the approximate budget per village for community mobilization is about 10,000 US$, or about 50,000 US$ per village cluster. This is based on the experience that effective community mobilization requires time, and repeated visits. In particular, effective community mobilization through regional teams will require thorough training of trainers and capacity strengthening for their outreach to communities. And not least, travel costs in Mauritania are high.*

1.6. Government and communities share information and lessons learned, including through the establishment of 4 community radio stations focused specifically on sharing information on early warning and adaptation management

[28] GiZ, Gestion décentralisée des resources naturelles en Mauritanie, Expériences et enseignements 2001 – 2011 du ProGRN, p. 10 ;

Throughout its long-standing cooperation with WFP, Government has received technical assistance to develop vulnerability analysis. The proposed project will strengthen this analysis through the use of GIS, and the work will be a crucial element for strengthening government capacity at a decentralized level in order to support local decision making.

Tools will be developed to assist officials and communities to better understand climate threats. Community early warning systems will be designed, implemented and maintained. These will be especially important for deciding on context specific adaptation investments based on local risks and hazards. Early warning systems will also help in updating climate related risk maps (hazards, vulnerabilities and impacts) and in refining socio-economic and food insecurity indicators.

Community learning and the sustainability of interventions that work need to be reinforced through communication among and between communities. One proven and effective way of ensuring pro-active and empowering communication is through community-owned radio stations, where communities become active retrievers and distributers of information and insight. The World Congress on Communication for Development included in its 2007 report the recommendation that *'Ensuring that people have access to communication tools so that they can themselves communicate within their communities and with people making the decisions that affect them – for example community radio and community media*.'[29] Through programming teams, listener clubs and community research, community-owned radio stations can play a vital role in the promotion of community awareness as well as participation in adaptation planning and implementation.[30]

Community radios are not feasible in all settings, and during the inception phase of the project a rapid appraisal will be carried out to determine which communities are better suited for community radio stations than others (consultations have already established strong demand in most communities).

Community radio is relatively cheap to establish, even if solid, modern technology is used. It can reach everyone within a radius of 70 – 100 km at low cost and in the local language. And it does not require further distribution systems or literacy among listeners. Programs can be heard while listeners go about their normal tasks.

Multiple messages can be brought to communities, including information on prevailing market prices for their products. However, the most important messages will result from information developed in the project's food security analysis and early warning, and would include weather and seasonal climate forecasts.

One long-term benefit of a community radio – which does not come at additional cost – is that programs are mainly prepared and sent by volunteers from the community itself. The radio, fully owned and run by the community, becomes a driver of community empowerment and cohesion, and this contributes to the accountability for project results and sustainability.

Costing Note 4: *The suggested approach and costs for the establishment and support to community radios corresponds to the recommendations of UNESCO's Community Radio Handbook. Costs included in the budget cover (1) a start-up study clarifying the legal, technical and social preconditions for community radios in Mauritania; (2) 4 locally recruited community mobilizers working about 2 months during each of the first 2 project years (indispensible to ensure full community ownership); (3) running costs (4) equipment and infrastructure for four radio stations; and (5) an international back-stopper supporting the radio establishment and running process during the last 3 project years with one work month*

[29] From 'The Rome Consensus': Report on World Congress on Communication for Development 2007,. ftp://ftp.fao.org/docrep/fao/010/ai143e/ai143e00.pdf

[30] Birgitte Jallov, Empowerment Radio, 2012

per year. Running costs are about 1,000 US$ per month per radio, and cover costs of maintenance, electricity, communication, and travel within the "catchment area" of the radio; plus a part-time coach for each radio who will be needed to support the main staff (volunteers) in their establishment of working routines, radio management, program development, networking, etc.

1.7 Monitoring system in place to track climate events in targeted areas

The project will establish a system to capture climate events and feedback lessons learned in responding to them. Baseline information will be gathered and systematized; regular progress and monitoring reports will be prepared. These will be analyzed by the project coordination team and reviewed at annual meetings assembling technical services and partners in all regions as well stakeholders from other, related projects (e.g. the IFAD/GEF projects, the GiZ-funded ProGRN project; etc, see section II.F below).

The project monitoring system will be aligned to the on-going national monitoring processes. The National Environmental Action Plan (PANE II) 2012 – 2016 is expected to be approved by June 2012. This will define the strategic framework and main priorities. PANE II already includes a number of indicators for monitoring environmental development (see Annex 3). PANE II will be made operational through a Sector Program for Environment and Sustainable Development (PSEDD). As part of the PSEDD, additional indicators and a common framework for an ecological monitoring system, including the specific roles of different actors at different levels, will be defined, led by MDEDD. Experience with PANE I, and an apparently over-ambitious catalogue of indicators, has shown that it will be crucial to focus on a limited number of indicators for which data can reliably be obtained at an affordable cost.[31] The project will apply the indicators, align itself fully to the monitoring system to be decided as part of the PSEDD, and establish a baseline in the selected intervention areas.

Implementation of Village Cluster Plans Under Components 2 and 3

Concrete adaptation activities will be developed in components 2 and 3 on the basis of participatory planning in component 1. The activities described in the following sections are thus tentative, and based on well-tested and proven approaches and technologies. The distribution of these interventions and their size will be agreed upon as part of village cluster adaption planning, and additional or alternative interventions may be proposed depending on ecological and socio-economic conditions and village cluster preferences and priorities.

Components 2 and 3 will enable communities and poor households to implement the activities they have prioritized. The bulk of their work will be carried out through food or cash for work and for training. Activities will be undertaken exclusively in the lean season, when food is scarce, household stocks are depleted and food prices are high. In the context of poverty which characterizes the project area, as well food insecurity which characterizes the households which will be self-selected to participate in building physical works, compensation for labor is indispensible. The target population is constrained in using their labor in the productive season for anything but the preparation of next season's harvest. And people cannot remain in the project area during the lean season without a source of income. Their only alternative is to migrate temporarily or permanently in search of other income.

While temporary migration is part of local culture, there are good reasons to consider constructive alternatives. Pressure to migrate is increasing, and competition for temporal employment in urban centres is increasing at the same time, which weakens the chances of finding the salaried employment required to sustain households through remittances. Also, the on-going deterioration of natural resources require massive, labor-intensive investments

[31] One such indicator will probably be the "Vegetation Cover Index" (ICV) tested successfully by ProGRN. Others may encompass number of livestock by kind; days and number of points of water availability; etc.

which can only be carried out during the lean season, when the population is not fully engaged in agricultural and pastoral activities..

There are multiple benefits for such work programs:

- Transfers will be provided to areas and groups which the state, with its present capacities, cannot reach;
- Vulnerable groups can maintain food and nutrition security during the lean season without having to break up their family or migrate.
- Valuable labor is maintained in the project area. This labor force is crucial for the creation and maintenance of adaptation and productive assets. Without it the fight against desertification and soil erosion / degradation cannot be won.
- The work programs are powerful tools to mobilize communities and households which, in the context of severe poverty, often are not concerned about investing in future ecological and socio-economic benefits.
- Where cash-for-work is feasible, the influx of cash into the area can stimulate local markets and production

The management of these programs will be undertaken by village cluster governance structures. They will determine the choice, timing and sizing of works; the agreement on work norms and consultation of transfer values; the establishment and implementation of selection criteria for the participating households; and the monitoring of participation and receipt of transfers. In establishing these criteria, community and cluster structures will abide by criteria, standards, norms and priorities established by the Ministry of Social Affairs.

A number of activities described below will not be implemented as soon as adaptation plans are finalised, but will require additional preparation (see implementation schedule in figure 9 above). This is the case, for example, in the establishment of local plant nurseries for dune fixation, community fuel-wood forests, and income generation. As part of the preparation, specific market assessments will be carried out to determine if transfers can be made in cash or in the form of vouchers. Wherever such non-food based modalities are found feasible, they will be the preferred project modality, as they promise higher operational efficiency and allow households their choice of purchases. In 2011 WFP successfully tested cash-for-work programmes in several areas off the country and is using this modality in its current emergency operations.

Component 2: Design and implementation of concrete adaptation measures identified through community adaptation planning that aim to combat desertification and land degradation

Component 2 will promote climate resilience by protecting threatened resources from the effects of climate change, natural and anthropogenic (unsustainable coping strategies).

2.1. 1,500-2,000 ha of dunes fixated.
2.2. 1,000-1,500 ha of vulnerable zones protected.
2.3. 1,000-1,500 ha of community fuel wood forests planted.
2.4. Water retention structures built covering approx 500ha.

Many of the communities which have been consulted and are likely to be part of the project's village clusters have indicated that sand dunes threaten their productive assets. Where this is the case appropriate species of trees and bushes with good soil and sand fixating properties will be planted. The particular species will be identified by the AGLC in consultation with technical services, supported by partners, including FAO. The project will also support nurseries in the area, providing cost-efficient access to relevant seedling, and a basis for local sustainable plantations and local income-generation. Figures 10 and 11 show examples of dune fixation and a local, water efficient plant nursery in Mauritania.

Fig. 10: Dune Fixation

Fig. 11: Water-Efficient Local Plant Nursery

Where frequent wildfires threaten natural resources, communities will establish fire breaks through manual labor. Where soil erosion through water flows is a problem, communities will invest in *diguettes,* and water retention dams. These will slow the flow of water, increase the availability of surface water, and lead to increased vegetable production, as well as the infiltration of water into the soil where it will replenish underground reservoirs.

Desertification has led to a concentration of cattle in smaller areas, further threatening vegetative cover. Protected areas will be created where grass and other vegetation cover can regenerate. Communities will learn that the planting of diverse species within such protected areas yields high benefits for biodiversity and for communities to maintain and strengthen their livelihoods. Figure 12 shows the increasing vegetation cover in protected zones over three years.

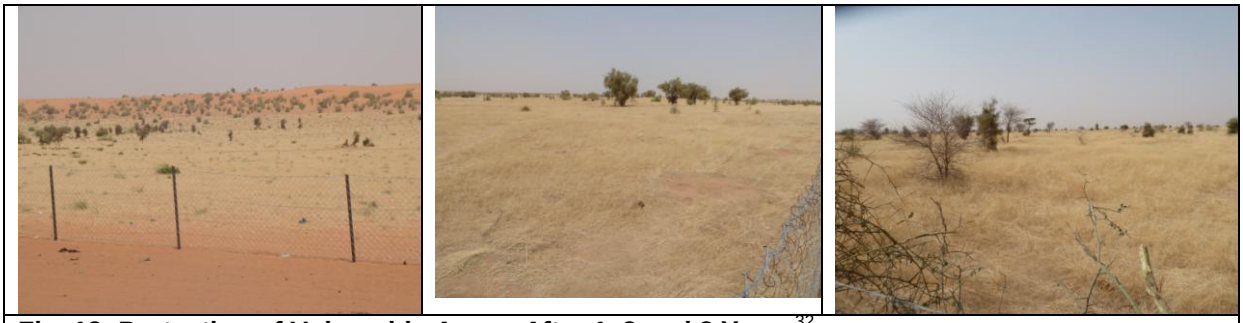


Fig. 12: Protection of Vulnerable Areas, After 1, 2 and 3 Years[32]

Where identified as relevant and prioritized by communities, dedicated areas will be reforested with appropriate species to ensure a supply of firewood. The sustainability of this supply will be supported by the national strategy to promote the use natural gas as a source of energy in urban areas, which are presently the greatest user of wood from rural areas (in the form of charcoal). Fuel-efficient improved mud (and possibly other) stoves will be provided and alternative sources of income generation to charcoal production will be promoted under component 3.

One challenge - addressed through community planning in component 1 – will be to link the natural resource management (NRM) elements of the project to pastoral migration and

[32] The photographs do not show the same area, but different sites that were in a similar state at project beginning, and which were protected 1, 2 and 3 years prior to the site visits during project preparation.

marketing, and in particular to explore how pastoralists can get livestock to market and up and down trekking routes.

Component 3: Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population

This component is a critical pillar for ensuring that communities and vulnerable households become more resilient to withstand shocks and less damaging of the ecosystem that supports them. Again, the specific distribution and size of the proposed interventions will be subject to deliberation in the adaption planning phase of the project. For all outputs, the project will pursue a practical, hands-on approach. Where a livelihood diversification activity has been selected by a village and is found feasible in the specific village context, a number of different intervention types (and their combination) will be used to achieve the desired target of full community ownership and self-reliant sustainment of the activities in question. This will include training, coaching, asset investments and in particular learning by doing. With respect to investments, the project will ensure that the assets created represent the most appropriate choice of technology, allowing the desired production, storage and marketing outputs while being fully mastered by villages and households themselves. This will ensure future sustainability, including repair and replacement with local know-how and resources. Each training for IGAs will be accompanied by a sufficient budget for asset investments. This will be further complemented by the possibility of IGA-groups to apply for grants under the GEF/UNDP Small Grants Facility, which has expressed particular interest in seeing and supporting initiatives that are part of a larger, community-wide strategy.

3.1. Approx 300,000 trees for revenue generation and food planted in protected areas.

The *acacia sénégalaise* is a plant on which the production of *gomme arabique* (gum Arabic) is based, and an important source of income. This resource has been depleted as a result of charcoal production. Simlarly, *zizuphus mauritanica* and *balanites* are important species for food security and income generation. The recovery of this resource in protected, community managed areas will restore an important traditional livelihood. Planting a variety of different, well adapted plants (to be identified in dialogue with communities and national research institutes) will increase biodiversity in the project area.

All trees to be used will be well-adapted to climate conditions of the project zone. Gum Arabic has multiple uses (food processing, textiles, medicine, water-proofing of roofs and walls, painting, etc.). There is a long-standing tradition of this production and the commercialization of various products. During the MDG fund WFP/FAO project (see section II.F), 400 trees were planted per hectare, in lots of 50 ha per village. The average yield per tree after five years is about 520 g per tree corresponding to 208 kg per ha and about 10 tons per lot (or village). Gum Arabic is sold at 500 UM (1.76 US$) per kg. This means that a village can generate about 18,700 US$ per year from a lot of 50 ha. The project aims to plant 300,000 trees at a cost of 700,000 US$. These would (at a survival rate of 100 percent, and if only gum Arabic was planted) yield 156 ton of gum Arabic which could generate about 275,000 US$ per year. The initial investment would thus be earned back after only eight years (five years of growing, three years of harvesting).

Ziziphus mauritiana produces edible fruits (500 UM per kg), high-quality wood for furniture and medicine. This species is traditionally produced and traded at a profit.

Balantine aegyptiaca produces fruits that are traded in great quantities (for juices, traditional medicine, etc.) at 1,000 UM per kg. Its wood is commercialized for construction and tools. This tree is highly appreciated for its economic value.

3.2. 4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilization.

3.3. 5,000 technical staff and community leaders trained and equipped for plant/seed multiplication.
3.4. 4,000 technical staff and community leaders trained in poultry development.
3.5. 1,000 technical staff and community leaders trained in apiculture (beekeeping).

Community groups, DREDD staff (including departmental inspectors), and extension personnel of MRD will be the key stakeholders trained in the implementation of activities which will derive from the adaptation planning exercises. As elsewhere, training will be provided in the form of regular training courses at the newly re-opened national school for training and agricultural extension. On-the-job training will also be provided through the technical support and guidance which contracted NGOs and the private sector will provide to regional teams

Training in moving, phasing, animal health care, respect of protected areas, and provision of fodder buffers will increase the resilience of highly vulnerable, poor households which depend on a few head of cattle or smaller animals, and will enable these households to sustain livelihoods without depleting natural resources.

Training in **more efficient agricultural techniques and water management** (e.g. Irrigasc[33]), coupled with provision of appropriate seeds, will allow communities to increase food and revenues derived from the land. Improved rain-fed fields are an example of better utilization of water resources, as are plant multiplication and vegetable gardens using $1m^2$ tables which produce high yields, and provide income for women's groups with minimum water use.

Poultry has been identified as a high-potential activity for climate change adaptation in the target area. Chickens are inexpensive and offer a good alternative to cattle for the poorest households. Chickens also do not deplete natural resources in the same way as goats or cattle, rather they can increase soil fertility. Finally, chickens allow poor rural households can increase their consumption of meat and diversify their diet.

Apiculture can boost yields from plants depending on pollination, and can serve as a substitute for fertilizer, which is expensive and not used. Where apiculture is feasible, a sustainable culture of bee-keeping can be pursued at low cost and with local means. Beyond significantly increasing agricultural yields and providing income to beekeepers renting out bee families to agriculturists, it can also form the basis of up to 300 bi-products derived from honey and wax.

Beekeeping is not widely practiced in Mauritania, though small-scale traditional collection of honey is practiced by villages in the area bordering Mali. The harvested quantities are traded in the rest of the country by small traders. However, there is strong demand for honey on the Mauritanian market, as it is used for multiple purposes (food and food supplement, traditional medicine against ulcers, bronchitis, allergies, etc.). While there are no exact figures, the annual national demand is estimated at 500 tons, of which only 5 per cent are covered by national production. A kilogram of honey presently costs 3,000 UM (12 US$). There seems, then, to exist a large commercial potential for increased and intensified apiculture in Mauritania, in addition to the agricultural benefits that can be derived from improved pollination. The project will pursue an incremental approach, testing methods and adapted tools and low-cost technologies as well as different products and their commercialization before a wider scaling up.

3.6 Approx 50 community cereal banks established.

Village cereal banks are found in some villages in the project area and have had some success. They can provide a crucial food buffer for vulnerable communities and in particular

[33] See for example at http://www.irigasc.net/

can serve to stabilize food prices during the lean season. The need for, potential benefit, and functioning of village cereal banks has been analyzed. Through further consultation with communities, the project will intervene to establish new cereal banks and improve exisiting one where there is good potential.

WFP has experience in successfully supporting village cereal banks in neighboring Senegal. The difference between village cereal banks and the usual state-run cereal banks (including decentralized ones) is the complete ownership, control and responsibility for the banks by a village association. This concept (see the description in Annex 5) is highly compatible with, and mutually supportive of, decentralized natural resource and adaptation management through village clusters.

3.7 30,000 fuel efficient stoves provided

3.8 2,000 community members (mostly youth) trained to build and maintain fuel efficient stoves

The project will promote the construction of fuel efficient stoves in all participating villages. To ensure sustainability, it is envisaged to focus on mud stoves specifically designed to correspond to local habits. Studies have shown that such stoves, which can be built entirely from material found in the project area for free, can save up to 50 percent of fuel wood. Work will be carried out by youth groups trained under the project. The saving in monetary and labor terms that households can expect from these stoves will ensure that they will be ready to invest in paying youth to build and maintain the stoves.

In this way, it is expected that multiple, sustainable benefits will be achieved: households will save expenses, the pressure on fragile wood resources will be reduced, and building and repair of mud stoves and other local material can constitute an important means of income, especially for young people.

B. Describe how the project provides economic, social and environmental benefits, with particular reference to the most vulnerable communities.

Table 3 identifies the expected economic, social and environmental benefits of the proposed project. (Some of these are quantified elsewhere in the project document)

Table 3: Expected Economic, Social and Environmental Benefits

	Economic benefits	**Social benefits**	**Environmental benefits**
Vulnerable households	➢ Secured agricultural revenues through protection of land and retention of water ➢ Stabilized food prices through community cereal banks ➢ Employment opportunities, short-term through food or cash for work, medium- and long term through more diverse and less vulnerable sources livelihood bases ➢ Biodiversity will provide access to additional flora and fauna for food, income and medicinal purposes	➢ Reduced impact of climate hazards on food security and livelihoods. ➢ Improved nutrition, resulting in improved health of family members ➢ Increased solidarity and mutual help through community group structures ➢ Reduced "push"-factor forcing young household members to migrate and depriving the household of needed labor force	➢ Increased woodlands ➢ Increased water ➢ Increased biodiversity
Communities	➢ Reduced immediate threat from sand dunes and erosion ➢ Increased agricultural productivity and output ➢ Increased market access ➢ Increased food security through cereal banks	➢ Reduced risk of conflict through natural resource management and inter-village associations ➢ Increased social cohesion and empowerment through management committees and community radio	➢ More sustainable land and water resources ➢ Reduced desertification and degradation
Region	➢ Greater food production and security ➢ Stabilization of local production and maintenance of local contingency stocks	➢ Reduced migration from the area, in particular of youth who will have renewed prospects of healthy livelihoods. ➢ Reduced risk of conflict	➢ Reduced desertification and greater biodiversity resulting in greater resilience of regional ecosystems.
Government and partners	➢ Reduced dependence on food inputs from abroad, and reduced exposure to food price volatility. ➢ Reduced dependence on foreign development and humanitarian aid	➢ Greater capacity of technical services ➢ Creation of a knowledge base from which positive experience can be identified and replicated ➢ Reduced pressure on urban areas	➢ Greater in-depth understanding of the interplay between climatic, environmental and human factors influencing climate change, ecosystem health and the economy.

The number of beneficiaries by output is provided in Table 4. Participants are the people who are being trained or carrying out project activities. Direct beneficiaries include all household members benefiting from food or cash. At an average household size of five people, direct beneficiaries (individuals) outnumber participants by a factor of 5.This calculation does not apply for activities under component 1, where participants are not compensated.

Indirect beneficiaries are all those who benefit from the assets created by the project. These include the populations of (at least) 100 villages covered by the project, and in principal all beneficiaries covered by strengthened technical services which will work with additional villages.

Table 4: Project Beneficiaries by Output

Component		Output	participants per output	participants per component	beneficiaries per output	beneficiaries per component
1	Support Technical Services and the communities they serve to better understand climate risks, their impact on livelihoods and food security, and devise relevant and realistic adaptation plans and measures	1.1 Eight DREDD (regional technical services of MDEED) strengthened to access and analyse climate change information, to monitor local development and to mobilise and support communities	184	**4.614**	184	**16.614**
		1.2 Strengthening of Government's threat, risk and vulnerability analysis	30		30	
		1.3 20 inter-village associations established and supported***	400		400	
		1.4 Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food in security	3.000		15.000	
		1.5 100 villages, being clustered according to landscape, ecosystem and livelihoods, have prepared adaptation plans that are integrated into local development planning.	400		400	
		1.6 Comunities share success stories and lessons learned, including the establishment and support of 4 community radios	200		200	
		1.7 Monitoring system in place (establishment, training, production of data and reports) to track climate events and ecologic development in project intervention zones.	400		400	
2	Design and implement concrete adaptation measures identified through community adaptation planning that aim to combat desertification soil erosion and land degradation	2.1 1,500 - 2,000 ha of sand dunes fixated	4.500	**19.500**	22.500	**97.500**
		2.2 1,000 - 1,500 ha of vulnerable zones protected	6.000		30.000	
		2.3 1,000-1,500 ha of community fuel wood forests planted.	4.500		22.500	
		2.4 Water retention structures built covering apporximately 500 ha	4.500		22.500	
3	Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population	3.1 300,000 trees for revenue generation and food planted in protected areas	5.250	**52.850**	26.250	**276.250**
		3.2 4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilisation	4.000		20.000	
		3.3 5,000 technical staff and community leaders trained and equipped agro-pastroal IGA, including plant multiplication	5.000		25.000	
		3.4 4,000 technical staff and community leaders trained and equipped for poultry development	4.000		20.000	
		3.5 1,000 technical staff and community leaders trained and equipped for apiculture	1.600		5.000	
		3.6 Approx 20 community cereal banks established.	1.000		20.000	
		3.7 30,000 fuel efficient stoves built	30.000		150.000	
		3.8 2,000 community members (mainly youth) trained and equipped to build and maintain fuel efficient stoves	2.000		10.000	
Total:			**76.964**		**390.364**	

C. Describe or provide an analysis of the cost-effectiveness of the proposed project.

The principal alternative that large numbers of people living in the project area have chosen in adapting to the impacts of climate change has been to migrate in search or permanent or temporary employment. Today, however, the ranks of the urban poor are rapidly swelling as employment and income opportunities are scarce. And opportunities to emigrate and find employment abroad are becoming increasingly limited (not least due to European countries' economic difficulties) and are often dependent on illegality, including life-threatening human trafficking.

Furthermore, Mauritania's coastal cities of Nouakchott and Nouadhibou now offer no refuge from the perils of climate change. Originally planned as a modest administrative center, Nouakchott has mushroomed into a capital of uncertain population. In the absence of effective urban regulations, up to one million people may have settled on the flood plains. As the sea level rises and natural sand dune defenses crumble or retreat, most of the Nouakchott region is at risk of permanent inundation within a generation. Beyond the city, the coastline is threatened with flooding, salt intrusion and loss of wetland biodiversity. And while fishing and marine livelihoods have in the past contributed over 12 percent of Mauritania's GDP, this sector has diminished in value in recent years (the presence of high technology European trawlers is a principal cause but rising sea temperatures may also affect breeding and habitat of local fish stocks).

Ultimately, rural ecological services will not recuperate, and the productive potential of the countryside will not be realized, as long as the fundamentally unsustainable exploitation of natural resources continues. Perversely, migration deprives the country of a valuable labor force (not to mention a political constituency) required to maintain potentially productive systems.

This project is cost effective for a number of reasons:

The project will utilize a community approach that includes a concentrated effort on community mobilization, awareness raising and training. This approach will involve local people in: managing natural resources, meeting social needs and sustaining outcomes over time (maintaining local cultures, increasing opportunities for income generation, and improving food security and well-being). Implementing concrete adaptation activities with community participation is cost effective when well executed and is the most cost-effective way to achieve large scale results in Mauritania.

Indeed, the management of natural resources by communities has proven more effective than management at higher levels. ProGRN has monitored progress throughout its program, and found that 90 percent of beneficiaries confirm strong ecological benefits of the transfer of resource management responsibilities to the AGLC level. Since 2004, the vegetation cover index (ICV) has almost quadrupled in areas managed by AGLCs, whereas it has over the same period diminished to a quarter of the base value elsewhere.[34] At the same time, there is an immediate and strong correlation between the ICV and economic benefits, in particular for livestock, but significantly also for dry fodder (at a price of 100 UM (about 75 US cents) per 10 kg dry fodder) which is 20 percent of the price of cereals but is produced in far greater quantities.

The favorable rate of return on project investments, which will secure future financial sustainability of assets created, is described above. Interventions will require relatively low material investments and yield a comparatively high return, while being more accessible for community understanding and appropriation. Apiculture, community radios and village cereal banks are well known examples of low cost interventions with potentially high returns

Concrete interventions will be carefully costed with community involvement – including the costs of depreciation and eventual replacement – before decisions are taken on implementation. Detailed cost effectiveness analysis will be made for each community adaptation plan, using a methodology developed by WFP, comparing measurable outcomes with all feasible options and risk analysis.

[34] Gestion décentralisée des ressources naturelles en Mauritanie. Expériences et enseignements 2001-2011 du Programme de Gestion des ressources naturelles, ProGRN, p. 26

Where functioning markets exist, the project will use cash-based support modalities to further increase cost efficiency. The first tests WFP carried out with cash-for-work programs in 2011 showed that such non-food based modalities are feasible, and that they arrive at a favorable alpha-value, indicating greater cost-efficiency than providing the corresponding value transfer in form of food. The cycle of unsustainable coping mechanisms cannot be broken without offering short-term sources of income and food security. In this way, medium- and long term alternatives to unsustainable sources of income (overgrazing, deforestation, etc.) will be secured through income generating activities. Cash and food for work or for training programs as part of components 2 and 3 will be phased so as not to interfere with other agricultural, livestock or forestry related activities required by project stakeholders during that time. Costs of food for food for work rations were calculated using (a) the established food rations for a month of work provided; (b) the estimated number of households participating in each of the foreseen programs; (c) the number of months worked by each participant; and (d) the approximate price of food per ton up to the beneficiary.

The asset building activities under the project could receive additional support through the GEF small grants facility (UNDP GEF V). A joint approach has been discussed between WFP and the Government and UNDP/GEF. The project will facilitate the application by village associations for GEF small grants according to requirements and complementarity to the project's objectives

Cost effectiveness is also promoted though a landscape approach that focuses on concrete activities within village clusters that form a coherent ecological and livelihood zone. The merit of working in villages over large geographic areas is cost efficiency shared ownership of assets.

Relatedly, the project will specifically address the issue of ad-hoc and small scale adaptation efforts. The strategy considers that fragmented responses may address a local issue, however, without a combined community based and ecosystem based approach it is unlikely that context specific actions which meet the priorities of local populations will succeed . The project approach specifically aims to reduce fragmentation by targeting village clusters organized by ecosystems - landscapes with shared water points, animal migration routes – as well as production systems (access to markets, storage etc.).

The integrated focus on the management of natural resources will also serve to processes to promote indigenous knowledge to reduce and mitigate climate change related risks, and opportunities for income generation.

The co-location of activities under the three project components will promote operational efficiency and facilitate efficient and effective monitoring. The approach will also lead to the creation of models which are expected to be replicated in the project area and beyond.

The full alignment of the project to Government-approved and tested methodologies and structures will further increase cost-efficiency. For example, instead of pursuing its own ecological monitoring system, the project will be part and parcel of the effort under PANE II and the PSEDD. Similarly, the project will apply the methodologies developed by MAE for translating knowledge between national, regional and local actors, as well as the methodology to establish and support decentralized natural resource management through AGLC developed by MDEDD with assistance form ProGRN.

D. *Describe how the project is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.*

The project directly contributes to the objectives, and supports the implementation infrastructure, of key Government policies and programs aimed at achieving sustainable growth and adapting to the impacts of climate change.

The **Second National Communication of 2008** identifies the need for populations to adapt to climate change-induced biodiversity loss, reduction of agricultural production, soil degradation, and impoverishment by emphasizing 1) participative land, water and forest management, 2) in particular, the establishment of green belts, and 3) income-generating activities.

The review of the implementation of **Mauritania's Strategic Framework for Poverty Reduction 2005-2010**[35] found that, during the period under review, environment and natural resources continued to decline due to climate change, socio-economic development and population growth. The decline of ecosystems has predominantly affected the rural population and the reduction of biodiversity has significantly limited their income-generating potential. The review recognized that the impact has been most severe for the poorest.

In part as result of the review, Mauritania's **Poverty Reduction Strategic Framework (CSLP III) 2011 – 2015** includes in its vision of for the year 2015 (as two out of five overarching priorities) access to basic nutrition and productive use of a healthy natural environment.

The CSLP III will be implemented through

1. Accelerated economic growth
2. Capitalization of growth and productivity potential for the poor
3. Development of human resources and access to basic services; and
4. Promotion of institutional development based on good governance and participation of all stakeholders

The second axis envisages the integration of natural resources in the productive tissue of the national economy. The approach explicitly links environmental sustainability and growth for the benefit of the poor. The strategy for promoting natural capital focuses on empowering the poor through their improved use of natural assets. This priority is addressed in components 2 and 3 of the project.

CSLP III is also explicit that the fight against climate change and the sustainable management of the environment are major pillars of governance in Mauritania. Specific objectives in this regard include mainstreaming climate risks and sustainable management of land and natural resources in development strategies and programs, improving environmental governance at decentralized levels, and strengthening of national capacities in monitoring the effects of climate change. These priorities will be addressed through component 1 of the project.

Mauritania's **National Action Plan for Adaptation (PANA, 2004)** consists mostly of a series of prioritized concrete projects. These were established by applying a number of criteria, including distribution between different ecosystems and productive systems according to their contribution to GDP. Projects were identified by technical experts in 18 areas. Most of the activities proposed by the project are related to those prioritized by the PANA, including water retention, improved agricultural techniques and community fuel wood forests. However, the PANA is not a strategic document and does not provide strategic orientation. *A review of the PANA is being undertaken in 2011/2012 and has been informed through the appraisal and consultation process of the project.*

[35] Cadre Stratégique de Lutte contre la Pauvreté 2011-2015

The **National Strategy for Sustainable Development (SNDD)** of 2006 places people at the center of decision-making, with the priority of satisfying the needs of the poorest and most marginalized groups. It pursues five main themes:

- Strengthening institutional and political structures to more effectively manage the environment and natural resources;
- Promoting sustainable access to basic services as a means of poverty reduction;
- Promoting integrated and participatory management with the aim of more efficient use of natural resources;
- Managing the local and national environment in accordance with international conventions; and
- Establishing financing mechanisms for implementation.

The **National Action Plan – Combat against Desertification (PAN-LCD)** pursues the general objective of ensuring sustainable development within the framework of the CSLP. It focuses on seven priority areas, including:

- Strengthening the role and the participation of civil society and of decentralized government structures;
- Improving agricultural production in rural areas and ensuring its sustainability (by e.g. improving agro-silvo-pastoral practices);
- Promoting decentralized, rational and sustainable management of natural resources.

The **National Food Security Strategy** 2011-2015 integrates environmental protection measures in view of climate change as well as the improvement of agricultural and pastoral lands. The corresponding action plan pursues as a strategic objective the promotion of a productive, diversified, sustainable and integrated agriculture (including agriculture, pastoralism, fisheries and environment) adapted to the effects of climate change.

In light of high unemployment rates, particularly among youth, the Government has launched the ”**Solidarity 2011**” program. The environment component of the program includes four components - the regeneration of *acacie sénégalaise* plantations which allow the production of *gomme arabique*; the fixation of dunes; and the restoration and protection of degraded and threatened soils – all of which the project will support.

The Government’s commitment to Solidarity 2011 underscores its conviction that payment for work schemes of the kind which will be utilized in the project can promote sustainability and lead to self-sufficiency.

The **National Action Plan for the Environment (PANE)** 2007-2011 was conceived as an operational matrix. However, today Government believes the original plan lacked simplicity, clarity and realism. Implementation was attempted without an adequate operational framework for consultation and harmonization for integrated environmental management. The framework was also not binding on national actors and ministries acted with different goals and rules.

The **PANE II (2012-2016)** has been elaborated in light of lessons learned form PANE I. It aims to provide Mauritania with a coherent framework for improved environmental governance in general and for the fight against the degradation of natural resources in particular. PANE II pursues 8 thematic areas (including combatting desertification and sustainable natural resource management; conservation, restoration and sustainable management of biodivserity; adaptation and mitigation of climate change; and fuel wood) and 7 cross-cutting priorities, including environmental monitoring and evaluation and the creation of legal frameworks and institutional reforms.

E. *Describe how the project meets relevant national technical standards, where applicable*.

Project activities will be carried out in ful compliance with national standards and methodologies for decentralized natural resource management. The proposed interventions will adhere to national technical standards that are in force, particularly those relating to land use, livestock management and water management. Through its training activities aimed at technical services the project will promote the knowledge and understanding of such standards and norms at regional and departmental level, which is indispensible for their effective application at local level.

Technical guidance provided through the project will follow national norms: for example, training for decentralized resource management, or efficient pastoral and agricultural techniques, will be provided through the ENFVA, which will ensure that established national standards and norms are applied and shared.

Work norms within labor-intensive programs will be agreed with the respective AGLC and the Ministry of Social Affairs. Experience with previous norms, established jointly by Government and WFP, will be considered.

The project will also identify gaps in appropriate sector technologies aligned with adaptation needs and identify possible solutions including sources of technical assistance and transfer modalities. Where relevant, environmental impact assessments will be carried out.

The standards, models and procedures for community involvement and ownership will be based on methodologies developed and tested by Government through earlier projects and programs, including most prominently ProGRN, but also e.g. PDRC (see below), ARTGOLD, etc.

F. *Describe if there is duplication of project with other funding sources, if any.*

There is no duplication with other sources of funding. Synergies and joint learning will be possible in relation to several other projects.

Natural Resource Management Programme (ProGRN). The second phase of the ProGRN ran from 2008-2010 with a budget of $9.6 million. The program consisted of four components: 1) Guidance on environmental policy, 2) Decentralized management of natural resources in Guidimakha and Hodh el Gharbi regions, 3) Management advice for the National Park of Banc d'Arguin; and, 4) Strengthening coherent support to the environment sector. A new phase of the ProGRN with the same components and a similar budget began in 2011.

The first component of the project will feed directly into the appraisal of the proposed Adapation Fund project, the second component will support its implementation, and the 4th will provide lessons to ENFVA on training. Also, ProGRN includes support to the establishment of a comprehensive environmental monitoring system pending the validation of PANE II and preparation of PSEDD. Stakeholders in the proposed project are participating in the discussions concerning this monitoring system, and will directly promote its implementation in the selected project areas including through training, establishing baseline information, and ensuring that relevant data are collected and adequately reported to the system.

Community Rural Development Project (PDRC). The World Bank-supported PDRC ran from 2004 to 2010. It focused on community-based rural development by supporting the formation and legal registration of more than 800 Community Development Associations in 10 regions of the country; transferring about $3 million to more than 270 these associations for the implementation of community-level investments (schools, health centers, markets,

rural roads, etc.); training about 200 facilitators who could assist the associations in the development of their local development plans; providing institutional support to different agricultural and other technical Government services.

The present project will directly build on the achievements of this project, involving functioning community associations and trained facilitators in the project area.

Spanish-funded MDG Project. This project, ending in 2011, brought together a number of ministries, WFP and FAO, and NGOs in an effort to develop models for community-based protection and regeneration of land through dune fixation and reforestation. The PAN-LCD found that the project's decentralized and participatory approaches produced good results, and the experience is one reason for the approach proposed in the current project proposal.

The proposed project will (a) apply the models of community outreach tested in the MDG project, (b) bring them to scale (a goal the Government has been explicit to emphasize), and (c) considerably enhance their scope by incorporating them into a larger, more comprehensive approach that applies the best practices of other interventions (in particular, the village cluster approach).

A particularly important lesson from the MDG project is that continuous technical support and monitoring are crucial for the creation of quality physical assets and their maintenance after project completion. The proposed Adaptation Fund project will build on this emphasis through technical capacity building of government structures that will be able to ensure this support after project termination; and increased community engagement through village cluster associations. The project will allow communities to capitalize to a much greater extent on the physical assets already created under with MDG project support.

TerrAfrica. The TerrAfrica program in Mauritania has led to the implementation of a strategic investment framework for sustainable land management (SLM). A multi-sector SLM committee was established by law and is coordinating all SLM investments in the country, including terrestrial activities that aim at mitigating GHG and fostering adaptation to climate change through SLM.

The SLM strategic investment framework has been taken into account in the design and location of the proposed project. Key actors from the TerrAfrica initiative were consulted during project appraisal and they will play an on-going role in the project.

The **IFAD/GEF adaptation project** "Support to the adaptation of agricultural production systems that are vulnerable to climate change" aims to add a climate change dimension to the IFAD Poverty Reduction Project in Aftout South and Karakoro (PASK II) which seeks to improve the living conditions and income of targeted populations, taking into account, among other things: (i) the strengthening of the targeted population's participation in local development/partnership; (ii) the conservation and recognition of the value of the natural resources for/by the local targeted populations; (iii) the promotion of economic growth rooted in the sphere of the target populations and based on the development of local opportunities. The project intervenes in three prefectures located in three different wilayas: M'Bout in the Gorgol region, Ould Yengé in Guidimakha and Kankossa in Assaba.

The **IFAD/GEF SLM project** "Participatory Environmental Protection and Poverty Reduction in the Oasis of Mauritania" aims at sustainable protection of the productive land and water resources of the oases, conservation of local biodiversity so as to control and mitigate land degradation and desertification, and protection of the natural integrity, functions and services of oases ecosystems resources in the arid and semi-arid plateaus of Mauritania (Adrar, Tagant, Assaba).

There is no significant overlap with the IFAD project areas. The proposed Adaptation Project will not work in oases areas. And the region in which the IFAD-GEF project will work is large, and there is more than enough area to accommodate similar interventions in different locations. However, both IFAD-related projects, WFP, IFAD, MDEDD and MRD are collaborating to ensure that there are operational synergies and closely shared information. The identification of specific villages clusters will be undertaken in close consultation with IFAD stakeholders. IFAD and WFP project stakeholders will be engaged in each other's governance structures, and lessons learned will be closely shared through periodic project monitoring and annual meetings.

The project will also build on the **UNDP/GEF project "Conservation of Biodiversity Through Participatory Rehabilitation of Degraded Land in Arid and Semi-Arid Cross-Border Zones of Mauritania and Senegal."** That project offers valuable lessons with regard to community ecosystem rehabilitation and livelihoods improvement through income generating activities.

The project can draw on important lessons from the UNDP/GEF Conservation of Biodiversity (as well as the GiZ financed ProGRN). Highly profitable IGA have been identified, including harvest and sale of dry fodder for cattle; production of gum Arabic from acacia sénégalaise; wood production for construction and firewood; plant and tree nurseries; production of spices and mint, which today are imported from Nouakchott to almost the entire project area; production and drying of vegetables (with solar); milk and yoghurt production supported by solar refrigeration; etc. Specific options will be discussed with village associations during adaptation plan preparation, and where required, specific additional feasibility and market studies will be carried out

Among the most important lessons is that such IGA have best chances of success and sustainability if they are part and parcel of a whole package of complementary and harmonized activities – as will be the case for activities proposed as part of village cluster adaptation plans.

Shared learning of lessons, promotion of synergies and avoidance of conflicts or duplication will be ensured by the close involvement of other project stakeholders in project implementation and governance. Already, government and NGO stakeholders in the other projects mentioned have been involved in consultations during appraisal. The involvement of these actors going forward on the basis of the project inception workshop is illustrated in Figure 14, below. All key project managers will participate in the workshop. Lessons and guidance proposed as a result of the workshop will be integrated into government's harmonized system for rural extension, and will form the basis for the training and capacity strengthening of technical services. These will then be directly involved – through the project's regional teams – in the work with village clusters. This experience will be documented and shared with the range of stakeholders at annual review workshops. In this way, the project will promote synergies with related projects; promote joint learning; and constitute a way of scaling up a number of other initiatives, where these are found by the joint stakeholder workshops to have developed successful approaches.

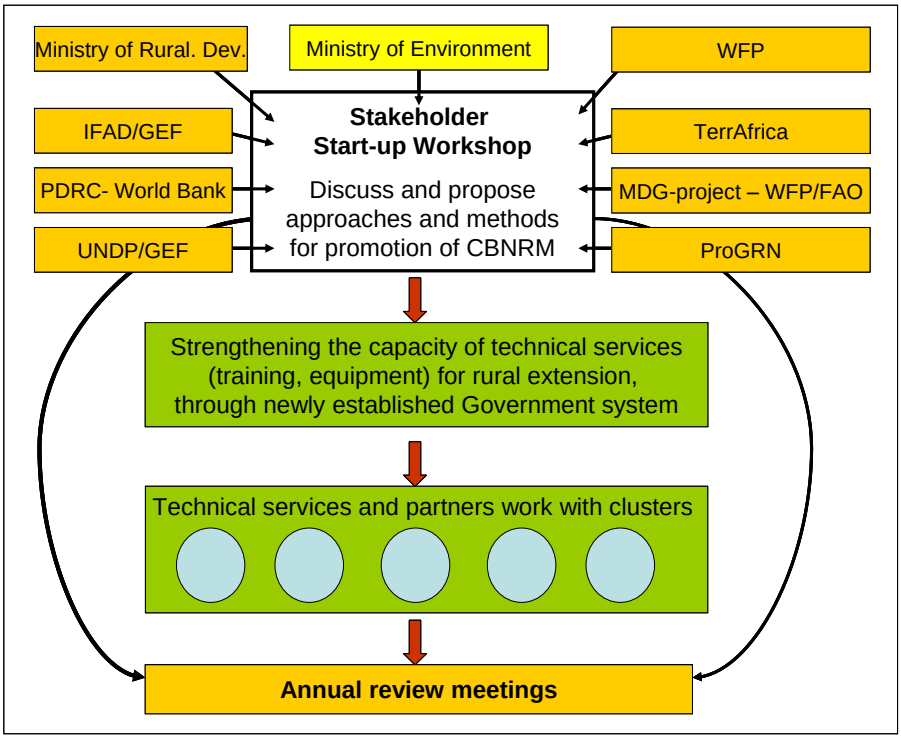


Fig. 13: Stakeholder Involvement

G. *If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.*

Many activities in the proposed project, especially in component 1 - early warning, awareness campaigns, inter-village associations and community radio - focus directly on sharing information, monitoring and knowledge management. The Government views this project as a learning model that will allow the national government and local communities the opportunity to review context specific approaches, establish best practice and scale up successful activities to achieve climate change resilience at scale.

The project's knowledge management activities will draw upon national actors and capabilities, and include community-based monitoring and evaluation. In addition, and specifically:

- In each village and cluster, a baseline will be established, both in qualitative terms (video footage, interviews with households, etc.) and quantitatively with respect to agreed upon indicators.
- In each region, quarterly progress reports with an agreed-upon, standardized structure will be prepared by project management and partners; these will be shared with all other regions as well as stakeholders at national level. They will – along with individual monitoring reports – form the basis for annual reports by project management.
- Each year, a workshop will join project actors from community, department, regional and national level – as well as stakeholders from other, related projects - to discuss opportunities and constraints, share experience and learning, and point the way forward (see explanation above). The results of these discussions will be incorporated in annual work plans.
- WFP will work with MDEDD to include all relevant reports and other information on the web-site of the Ministry. WFP will assist the Ministry with providing extracts of

experience and lessons learned that can influence the formulation of new policies and programs, including the revision of the NAPA.

In addition to monitoring, evaluation will provide the basis for the evidence-based approach proposed in this project. The criteria to be assessed during mid-term and final evaluation will encompass standard evaluation criteria. As a point of departure, the evaluation strategy will focus on full alignment to national processes and structures. e.g. the indicators that will be agreed-upon for the ecological monitoring system (see Annex 3) will be applied. Additional specific criteria will include sources of income, level of available household income, share of household income used for food, number weeks of food gap, and the availability (quantity, distance) of fodder and water.

While the timing of the mid-term review and evaluation is governed by the provisions of the Adaptation Fund, the project will attempt to the extent possible to either integrate these into wider evaluations beyond the limits of the project itself, or at least to have other relevant partners join both the mid-term review and the final evaluation. As a minimum, the technical advisory group will be closely involved in the preparation of the TOR for both MTR and final evaluation, and will be interviewed during both.

H. *Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation.*

This project is the initiative of MDEDD, with strong commitment and support form the Ministry of Rural Development. MDEDD requested that WFP help to prepare a comprehensive intervention to support climate-adaption drawing on its experience in the project area.

The project approach has been discussed with several existing village associations during field visits undertaken during project preparation (not necessarily the ones the proposed project will cover - that will be determined through the analysis in component 1). A number of community consultations and joint (potential) site visits were carried out with Government as well as with FAO which will be a technical partner (see Annex 6). The results of these visits provided a rich indication of potential commitment among villages, their knowledge and capacities for learning and implementation, and a sense of which interventions are working and most sought after in the face of climate change impacts and food insecurity.

The project has been reviewed and discussed at various levels of Government to ensure that the proposed activities are fully aligned with Government priorities and can realistically and cost effectively be undertaken within the time frame, and with the resources proposed. Consultations during project appraisal included

- In-depth meetings at MDEDD with the thematic directorates that will be involved in project implementation under the leadership of the Coordination Cell (Cellule de Coordination sur les Changements Climatiques)
- Participation and discussion in the restitution seminar on RISE regional, the institutional study of the environment sector with a focus on regional structures
- A dedicated workshop on the project proposal which included representatives from MDEDD, MRD at national level, several DREDD, as well as potential collaborating development partners and civil society
- Meetings with IFAD, FAO, WB, and GIZ to discuss on-going and future projects and areas of collaboration.
- In-depth meetings with ProGRN to discuss project approaches, coverage, and areas of cooperation and complementarity
- Meetings with UNDP to discuss joint approaches and concrete cooperation, including ARTGOLD, and UNDP/GEF.
- Discussions with the Lutheran World which has vast experience in the field of community mobilization and involvement in the fight against desertification.

- IUCN, another experienced implementation partner, was consulted on the project approach, project area, and possibilities for collaboration.

A list of persons met during consultations is included in Annex 6. The present draft has been reviewed and endorsed by MDEDD.

I. *Provide justification for funding requested, focusing on the full cost of adaptation reasoning.*

Baseline**:** The Government of Mauritania has established a policy framework to address climate change threats through the NAPA and the Second National Communication and finding resonance in the Poverty Reduction Strategic Framework, the National Strategy for Sustainable Development and the National Action Plan against Desertification. However, most measures have been focused at national level institutions and concrete actions on the ground have been few and ad hoc. Where there has been planning and action at the local level, most activities a) have been short of technical expertise, b) have not explicitly taken an adaptation focus utilizing information on climate trends and threats, and c) have not put communities at the forefront. While sector specific projects are under implementation, they do not promote an adaptation focus and do not adequately consider the impact of climate change on food security which is a high Government priority.

The Government recognizes that there are significant gaps in tools, information and capacities needed to assess climate change threats and a paucity of approaches to involve communities in developing adaptation actions that will help buffer them from increasing exposure to degradation and desertification. The lack of adequate food production and access to food in Mauritania is already a question of life and death for hundreds and thousands of people. Without this project, local adaptation planning and implementation in the country will be much slower to address the threats to food security and sustainable livelihoods.

Without concrete adaptation actions and livelihood support, the baseline scenario would see a continuing deterioration in ecosystems, production systems, household food security, and livelihood security.

Currently in Mauritania, most projects are limited to small areas and those that address desertification and land degradation are not developed by the concerned communities. Most projects of this kind are focused on tree-planting and stop short of addressing the underlying human-induced factors of degradation which is driven by food insecurity, poverty and exacerbated by climate change. With the exception of the re-establishment of *acacia sénégalaise* in limited areas, few current activities aim at strengthening the food security and long-term livelihoods of the most climate-vulnerable agro-pastoralists and the sustainability of the natural assets on which they depend. In particular, the vital links – knowledge, resources and accountability - between central government, regions and communities is a crucial weakness, leaving activities that do address issues of resilience in a holistic way without adequate guidance and the promise of sustainability through appropriate approaches and design. Unless concrete adaptation measures are supported to be planned and implemented locally, vulnerability to climate threats and food insecurity will only increase.

Without the proposed project, a key priority in the Government's efforts to halt the advance of the desert would go unsupported. Unsustainable coping strategies would continue, including the concentration of increasing numbers of livestock in reduced areas of land, cutting trees for charcoal production and sale, and migration to urban areas. Natural assets would fail to rebound. Economic opportunity would be lost. More people would permanently leave the area. Others would suffer and die.

Adaptation Alternative: The Government's national strategies and programs reflect a commitment to tackle the impacts of climate change and, in particular, to put in place an enduring response to the unsustainable use of natural resources and food insecurity. The

Government's aim in the proposed project is to build on the successes and failures of past interventions and bring solutions to scale which address the underlying barriers to sustainable natural resource management and ensure sustainability.

Adaptation Fund resources would support the transition from a singular focus on planning and strategy at the central level to adaptation planning at regional and local levels (component 1) and the implementation of concrete actions to sustain natural resources and improve livelihoods and resilience in and around communities (component 2 and 3). The proposed project would help make this transition by bringing together the ministries which have responsibility for natural resource management and rural development– and by strengthening the knowledge-sharing and coordination between actors at central, regional and village cluster levels.

For example, The project will promote the generation and use of climate information in an institutionally coordinated manner, through the linking of local early warning systems with regional and national systems. Information from all levels will also inform local contingency plans (as well as adaptation interventions). Currently contingency plans are developed and in force only at the national level. Developing appropriate tools for climate change monitoring and planning at local level are critical for developing robust national adaptation strategy.

In this way, the project will integrate overall national adaption planning and actions into sector planning and action at all levels, as well as local planning and implementation and lessons learned from implementation on the ground will more readily be transferable to other areas.

The project will promote the incorporation of recognized cultural knowledge to address climate change risks and develop community plans to solve problems locally. It will help raise awareness of risks related to variations in temperature and precipitation, and the risks associated with desertification. Communities, and in particular women, will be involved in planning and designing local solutions. Through a participatory planning process, local people will gain knowledge and understanding and be empowered to drive local solutions to respond to climate threats

Critically, the project will leave behind a significantly strengthened group of people working in Government technical services that will be able to interact with the most vulnerable populations everywhere and replicate successful methodologies and approaches

J. *Describe how the sustainability of the project outcomes has been taken into account when designing the project*

As described immediately above, the project has been specifically designed to ensure sustainable outcomes. Sustainability will be ensured through:

(a) the direct and decisive involvement of existing community leadership structures within project processes, reaching from cluster level vulnerability analysis and exploration of adaptation options to village level mobilization and prioritization, activity implementation and follow-up as well as harmonized resource management at village and inter-village (landscape) level; and
(b) strengthened technical services and enhanced regional planning (supported by multi-stakeholder workshops, training and equipment, and (c) direct involvement of the strengthened DREDD (which will be in charge of regional teams) in community mobilization and strengthening, ensuring adequate technical support to cluster and community-level planning, activity implementation and maintenance as well as – through accompanied "learning by doing" of the technical services – the continued capacity to provide this support after project termination.

All processes leading to decisions at cluster and village level will be highly participatory and no assets will be created that are not prioritized and would not be sustained by the beneficiaries The approach of working through groups of villages (associations, cooperatives or other forms) that have an official role in decentralised management of natural resources has been tested and is supported by official government policy and regulations (e.g. revised legal frameworks, in particular the revised pastoral (2004) and forest (2007) codes and application decrees (2009).

Sustainability of future monitoring and support will be ensured by the active and central role of DREDD, which will receive capacity support and throughout the project learn to apply what will be required of them in the future.

The sustainability of individual activity outputs will result from the tangible benefits of communities and households responsible for their maintenance through protection from damages and stabilized or increased income. All physical assets created under the project will be designed to be sufficiently simple and cheap to repair and replace by communities with their own knowledge, skills and resources. The financing for sustaining these assets will be secured in different, complementary ways:

(a) partly, the assets created will allow communities to directly raise income, e.g. by selling fodder from protected zones, levying a contribution for picking fuel wood from community forests, etc.
(b) partly, the benefits derived from these assets – e.g. dune fixation, fight against water erosion, etc. – are so tangible and significant that communities will be able to raise the required resources for the protection and maintenance of these assets from their members either on an ad hoc basis or through a community maintenance scheme /fund;
(c) partly, the income that can be raised by households through the IGAs under component 3 will ensure a higher level of financial resources and a greater presence of manpower in the villages which can contribute to the maintenance of created assets.

To some extent, spontaneous scaling-up can be expected where other (non-project) villages are exposed to the benefits derived from the project or where project villages by their own means increase the assets created under the project using their own resources and the know-how acquired through the project. (It is not anticipated that scaling-up of project investments would be financed through mechanisms developed under the project. Such scaling-up will need to be promoted by Government – not least through the strengthened decentralized technical services).

The experience and knowledge created by the project will be captured through its monitoring system, documented in accessible reports, and shared and discussed with all relevant stakeholders, thus promoting the availability and application of valuable lessons beyond the project itself.

Discussions with villagers revealed that a huge benefit of the proposed interventions will be social cohesion, which is hard to quantify yet indispensible for the sustainability of assets and the resilience of ecosystems and communities. While most of the proposed interventions promote cohesion, community participation in planning, the empowerment of village associations, and the establishment of community radios play particularly important roles.

PART III: IMPLEMENTATION ARRANGEMENTS

A. *Describe the arrangements for project implementation.*

The project will be executed by the Government of Mauritania, under the overall supervision of the Ministry of Environment and Sustainable Development (MDEDD) in collaboration with the Ministry of Rural Development and the Ministry of Social Affairs.

Village committees of Village Cluster Associations will play a key role in early warning, adaptation planning, and asset creation. The establishment of village cluster associations, the facilitation of their discussions and the preparation of their specific adaptation plans and design of their proposed interventions will be supported by regional teams.

WFP will provide support to MDEDD and the management team, and assign a Project Coordinator to work with the management and regional teams team (see below). The project coordinator will be an international consultant hired for the specific purpose of coordinating the project and providing continuous on-the-job training and support to the coordination cell at the MDEDD. WFP will coordinate the processes of monitoring, evaluation and knowledge management with regional teams designated by MDEDD and others. WFP will be responsible for developing the M&E plan and ensuring its implementation. WFP will assume financial oversight of the project and be accountable to the Adaptation Fund Board. WFP has the overall responsibility to ensure that the project achieves and measures expected results, and fulfills all reporting functions.

The project implementation structure is illustrated below:

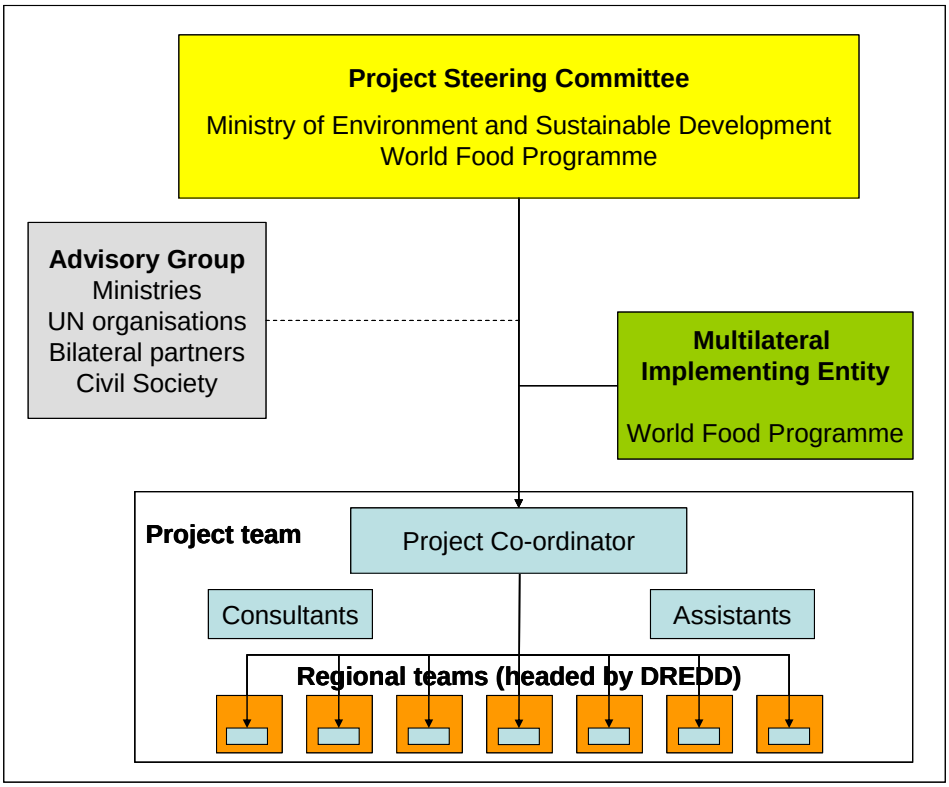


Fig. 14: Project Implementation Structure

The project **Steering Committee** will be comprised of MDEDD and WFP. The chair of the steering committee will be the Head of the Ministry's "Coordination Cell for the National Programme on Climate Change" (CCPNCC). Other ministerial participants in the Steering Committee will include the technical directorates concerned, i.e. the Directorate for the

Protection of Nature (which includes the fight against desertification), the Directorate of Programs, Information and Environmental Monitoring, and the Directorate for Pollution and Environmental Urgencies.

The Steering Committee will be the highest decision-making body of the project, and will as such direct the overall implementation of the project. It will meet every three months for regular meetings, and extraordinarily if called for by the chair. In particular, the Steering Committee will:

- be responsible for the direct supervision of the project team;
- approve annual work plans and budgets;
- review and approve annual reports and financial accounts;
- approve the composition of regional project teams;
- approve any recruitments under the project; and
- discuss and approve any proposals for the overall steering of the project, based on monitoring reports provided by the project team.

The Steering Committee will seek the advice of knowledgeable partners participating in a **Technical Advisory Group** comprised of relevant ministries, including the Ministry of Rural Development and the Food Security Commissariat (CSA), UN organizations, including FAO, IFAD, and UNDP, relevant bilateral partners, including GiZ, and experienced civil society organizations locally and internationally, including IUCN and the Lutheran World Federation.

The Advisory Group will:

- participate in project appraisal and the inception workshop, discussing past experience of climate change adaptation related projects and lessons learned, including best practice for the involvement and ownership of communities;
- share relevant information and experience made with a view to optimize learning, coordination and harmonization between the various relevant projects and programs;
- participate in annual workshops where annual progress reports and draft work plans will be presented and discussed, and where recommendations for the Steering Committee will be formulated; and
- contribute with relevant experience and expertise in all matters pertaining to successful project implementation and achievement of sustainable results.

The **Project Team** will work under the direct supervision of the project Steering Committee. It will consist of a project coordinator, a number of assistants, a team of consultants, and not least implementation partners that will be recruited to support regional teams with technical guidance and on-the-job training.

The **Project Coordinator** will be based in MDEDD. The coordinator will:

- prepare annual work plans and budgets
- ensure good and open communication and cooperation between the project and all relevant stakeholders at national, regional and community level;
- supervise and support the implementation of annual work plans;
- supervise the day-to-day work of assistants and consultants;
- prepare the Terms of Reference for specific studies and consultancies;
- coordinate the provision of technical assistance with the regional teams;
- supervise and support the monitoring of project activities and the indicators included in the project results framework.
- assure the quality of reports provided by the regional project teams;
- prepare annual reports;
- oversee budget execution according to plans and established rules.

Project assistants, consultants and implementing partners will perform the tasks to be described in their specific terms of reference under the supervision of the project coordinator.

Regional Teams will be established in each of the targeted regions. They will be headed by the respective DREDD, and include, in addition to other relevant technical services (e.g. regional staff of MDR), implementing partners recruited for the implementation of project activities in the various regions. This approach seeks to ensure that – while additional technical support is made available – the appropriate service is in charge and responsible for project activities right from the start, receiving up-front training as well as on-the-job training and other support through the duration of the project. The philosophy behind this approach is that there should not be a hand-over of responsibilities from an external technical support partner to Government at the end of the project, but that responsibility should rest from the outset where it ultimately will be, only the amount of technical external support will be more intensive at the beginning and less so towards the end of the project.

Regional teams will:

- Work directly with AGLC and communities, facilitate their forming of associations and provide technical and process orientation and guidance, enabling them to identify their adaptation requirements and options, and to select their preferred adaptation actions;
- Assist communities with the organization of internal discussions, including the selection of work participants, establishment of work norms, etc.;
- Accompany the implementation of adaptation activities with the aim to ensure that agreed upon activities are carried out with a high technical quality and applying methodologies corresponding to applicable technical standards;
- Monitor the progress of activities as well as the development of indicators included in the project results framework; and
- Provide regular progress reports to the project coordinator.

B. Financial and Project Risk Management

The identified risks, their assessment as well as risk management measures in the table below were discussed and confirmed through consultations during project appraisal. They will be re-assessed and adjusted on an on-going basis as standard part of annual review workshops:

Risk	Probability	Response Measure
External factors may delay project implementation	**Medium to low**	The project is a high priority of the Government, and will receive support where difficulties are encountered. Where some of the village clusters are delayed in preparing their adaption plans, other with completed adaptation plans will go ahead with their implementation. Depending on the progress made by various clusters in adaptation plan elaboration and implementation, budgets may be redistributed towards the better performing clusters (based on periodic reviews of progress).
Communities find it difficult to take up the skills, learning and social cohesion necessary to secure protected areas	**medium**	Communities will carry out the adaptation actions that they themselves prioritize, and will invest their own resources in addition to those provided by the project. The high degree of participation and ownership promoted by the project, coupled with the provision of income to support what are now meager livelihoods, will render the risk of communities not sustaining project results very low.
There is little local specialized management and technical capacity related to climate change, particularly in the entities that are responsible for the project.	**high**	The strengthening of decentralized services is a strategic priority of Government, to which the project will provide valuable support. The project will contribute directly to increasing the Government's technical capacity at these levels.
Lack of adequately qualified partners	**Low**	A number of qualified partners with a similar project philosophy as WFP are working on the ground, and WFP has good experience in working with them.
People purchase greater amounts of livestock (beyond carrying capacity)	**Low**	The project will promote increased community sensitization as well as knowledge and skills concerning sustainable natural resource management. Communities will better understand the impact of livestock on their environment. Alternative sources of income will be promoted.
Outsiders bring in additional livestock	**Low**	Communities will better understand the impact of livestock on their environment and will attach a monetary value to the use of protected areas. This will counterbalance the interest of outsiders to bring in additional livestock.
People cut down planted trees for fuel wood (other than community	**Low**	Community ownership (and this protection) as well as alternative sources of income will reduce this risk. In addition, Government is pursuing the strategy of replacing wood with natural gas in urban centres,

forests)		which are the most important market for fuel wood from rural areas.
Natural disasters, in particular drought	**Medium**	As a matter of routine, WFP prepares contingency plans in close collaboration with Government to detect and address risks early on.
Lack of complementary projects and inputs	**Low**	The project falls fully within Government strategies and related donor strategies. The project advisory group will involve all relevant partners and stakeholders.

Table 5: Risk Assessment Matrix

C. Monitoring and Evaluation Arrangements and Budgeted M&E Plan

Project monitoring, reporting and evaluation will be carried out in accordance with WFP established procedures and standards and will be based on WFP's internal "Evaluation Quality Assurance System" (EQAS). Financial monitoring and accounting by the Multilateral Implementing Agency will follow WFP standards that are based on the International Public Sector Accounting Standards (IPSAS).

Key monitoring, reporting and evaluation activities will include:

Inception workshop will be held at project up-start, under the chairmanship of MEDD and with involvement of all major stakeholders, in particular the project advisory group, as well as centralized and decentralized government entities. The inception report to be provided on the basis of the workshop will form the basis for the first detailed annual work plan.

An in-depth baseline (to be developed within 4 months of project start) and regular follow-up reports concerning all indicators included in the project results framework (see below section D) form an integral part of the project, which has a strong learning dimension.

Short quarterly progress reports will keep the project stakeholders at decentralized and national level abreast of the most recent developments and events, including project activities, results achieved, problems encountered and plans to overcome these. Every fourth quarterly report will provide additional input to the project annual report (as will be defined by the project coordinator who will take into considerations the requirements of the national environmental monitoring system under establishment.

Detailed annual reports will provide full information on activities carried out, outputs produced and – to the extent possible – tendencies towards foreseen outcomes observed. The annual reports will be presented and discussed at an annual workshop – at which the advisory group and other identified stakeholders will participate - that will provide recommendations / endorsement for the proposed next annual work plan.

An external mid-term review will be carried out half way through project implementation. A final report will summarize all project activities and results. A final evaluation is foreseen to be completed within six months after project termination. An indicative plan and costing for monitoring, reporting and evaluation (part of project execution costs) is provided below.

Type of M&E activity	**Responsible Parties**	**Unit cost (US$)**	**Budget** (excl. staff time)	**Time frame**
Inception workshop	Project coordinator	3,000	3,000	Within 2-3 months of project approval
Baseline study	Project coordinator, with the assistance of regional teams	10,000	10,000	Within 4-6 months of project start
Annual follow-up reports	Project coordinator, with the assistance of regional teams	10,000	30,000	Within first 3 months of each project year
Quarterly progress reports	Project coordinator, based on information from regional teams and own observations	0	0	Quarterly
Annual reports	Project coordinator WFP coordinator	500	1,500	Annually
Annual workshops	Project coordinator	3,000	9,000	At the end of each project year
Technical reports	Project coordinator External consultants	0	0	As required
Mid-term review	WFP coordinator External consultants	1`5,000	15,000	18 months after project start
Final report	MEDD focal point WFP coordinator	500	500	Within 2 months after project end
Final evaluation	WFP coordinator External consultants	25,000	25,000	Within 6 months after project end
Financial Audit	WFP	15,000	15,000	
		TOTAL INDICATIVE COST	**109,000**	

Table 6: Monitoring Plan and Budget

The content of monitoring will be oriented at

- The project results framework – see below section III.D
- The environmental monitoring system being under establishment by MDEED and to be supported by the project in the intervention zones
- Potential additional indicators agreed upon by stakeholders

The monitoring and evaluation data generated will consist of financial, procurement and physical progress reports, information on compliance with environmental and social assessments, management frameworks, and financial reports. The issues to be reviewed will include the efficacy, efficiency, sustainability, and acceptance by stakeholders of project actions. Information on the achievement of quantitative targets will be supplemented with narrative reports. These reports will be made available in time to be reviewed and discussed by the Steering Committee during its quarterly meetings.

D. Disbursement of Funds

The disbursement of funds is oriented at the broad implementation schedule and fund requirements. The disbursement schedule is shown in Table 7 below.

Table 7: Disbursement Schedule

	Upon Agreement signature	One Year after Project Start	Year 2	Year 3	Year 4	Total
Scheduled Date	August 2012	January 2014	January 2015	January 2016	January 2017	
Project Funds	1,799,547	1,799,547	1,799,547	1,799,547	27,373	7,225,561
Implementing Entity Fee	144,511	144,511	144,511	144,511		578,044

E. Results Framework, Milestones and Indicators

Programme Strategy	Objectively verifiable indicators
Goal	*The overall goal of the project is a strengthened capacity of government technical services to guide and assist vulnerable communities increasing their food security and resilience to the impacts of climate change by providing them the information, organization, planning and implementation skills and means to improve the foundations on which their livelihoods are based.*

	Indicator	Baseline	Target	Sources of Verification	Risks and assumptions
OBJECTIVE 1: **Enhanced understanding, skills and means of decentralized government and communities for leading and facilitating participatory adaptation planning**	Number of community adaptation plans prepared through participative local planning supported with information and facilitation by DREDD	No adaptation plans exist in intervention zones	20 clusters of villages have established adaption plans in a participatory manner	• Project reports • Adaptation plans	DREDD and central technical services are willing and capable to absorb and apply training and capacity strengthening.
<u>Outcome 1.1:</u> **Strengthened awareness, ownership and facilitation capacities of government services (DREDD)**	DREDD have played an active and supportive role in the mobilization, organization and implementation of inter-village adaption planning processes	DREDD do not have capacity to provide any support to communities	DREDD have succeeded to provide information, guidance and facilitation support to 20 village clusters	• Project reports • Potential RISE follow-up study	
Output 1.1: Technical services strengthened to access and analyze climate change information, food security, livelihoods and vulnerability information, and to monitor local development, and mobilize and support communities.	DREDD have been trained, have communicated with department and local level, have visited communities, have facilitated village cluster establishment and discussions	DREDD do not visit communities and do not provide information, support, guidance or facilitate processes	DREDDs have regular contact and trustful relationship with village clusters and communities that value their support	• Project reports • Potential RISE follow-up study • Recipient perception study (part of MTR)	
Output 1.2: Strengthening of Government's threat, risk and vulnerability analysis capabilities by expanding current Vulnerability and Analysis methodologies to overlay climate threats and monitoring changes in landscapes using GIS technologies.	Preparation and communication to regional level of up-to-date and reliable information and analysis of climate change information and of government priorities	DREDD hardly receive any guidance, information and analysis from central level	Regular communications between central level and DREDD provide up-to date information and guidance, adapted to the capacity at regional level	• Project reports • Potential RISE follow-up study • Recipient perception study (part of MTR)	
<u>Outcome 1.2:</u> **Strengthened awareness, ownership, planning and management capacities at community level for local natural resource management and climate change adaptation**	Communities and their relevant sub-groups (e.g. women, livelihood groups, etc.) have actively participated in the preparation of the inter-village adaptation plans prepared and see their interests adequately reflected.	There is only little joint discussion at community level, and not all groups are involved; no inter-village discussions take place	About 100 villages in 20 village clusters understand, own and manage their adaption plans and their natural resources	• Project reports • Recipient perception study (part of MTR)	

	Indicator	Baseline	Target	Sources of Verification	Risks and assumptions
Output 1.3: 20 inter-village associations established and supported.	Inter-village associations exist and are active in on form or the other in each of 20 targeted clusters	In some clusters, some form of cooperation structure may exist, on which the project can build.	20 inter-village associations with a role in managing natural resources and adaptation plans recognised by population and DREDD	• Project reports • Recipient perception study (part of MTR)	Communities are willing to join in village clusters and to follow participatory adaptation planning exercises. DREDD take active leadership of regional teams. Qualified implementing partners are available to continuously support regional teams.
Output 1.4: Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food insecurity.	Number of people (gender-disaggregated) and communities trained	Communities are aware of degrading natural resources, but rarely of context, causes and adaptation options	Communities have the capacity to analyse and understand their situation, and adaptation options	• Project reports • Recipient perception study (part of MTR)	
Output 1.5: 100 villages, being clustered according to landscape, ecosystem and livelihoods, have prepared adaptation plans that are integrated into local development planning. Identification of adaptation technology requirements such as integrated livestock water and cropping systems.	20 village cluster adaptation plans developed in a participatory way and officially recognised by DREDD Specific studies on adaptation technology requirements are available at the relevant levels	Communities and village associations do not prepare comprehensive adaptation plans A number of *ad hoc* studies exist within several projects, but are not systematically made available	Adaptation plans include analysis, discussion of options, decision on priorities and analysis of implications (costs, maintenance) Studies on technology for 3-4 “standard” adaptation assets are available to all partners and stakeholders	• Project reports • Adaptation plans • Study reports	
Output 1.6: Communities share success stories and lessons learned, including through the establishment of 4 community radio stations focused specifically on sharing information on early warning and adaptation management.	Community radios are on air, involving communities in programming and feed-back	To be established during project year 1 as part of CR feasibility study	Four CR are on air, have strong volunteer involvement and a sustainability strategy	• Project reports • Site visits to CR (final evaluation)	
<u>Outcome 1.3:</u> **National ecologic monitoring system strengthened and tested**	Participating communities and government services have provided quality, timely and reliable ecologic monitoring reports aligned with the national monitoring system	No ecologic monitoring system exists – this will be established as part of PANE II operationali-zation.	The new national ecologic monitoring system is known, used and maintained by DREED and in project village clusters.	• Project reports • Reports provided by the monitoring system	PANE II is approved and its operational plan includes a relevant and realistic results framework and monitoring plan.
Output 1.8: Monitoring system in place (establishment, training, production of data and reports) to track climate events and ecologic development in project intervention zones.	Number of people trained at regional and village cluster level; amount and quality of data provided by village clusters / regional teams	There is no systematic collection, consolidation and analysis of data on nationally agreed-upon indicators.	Participating DREDD and village clusters provide data on agreed-upon indicators; and receive, understand and use reports.	• Project reports • Reports provided by the monitoring system	

	Indicator	Baseline	Target	Sources of Verification	Risks and assumptions
OBJECTIVE 2: **Design and implement concrete adaptation measures identified through community adaptation planning that aim to combat desertification, soil erosion and land degradation**	Number of implemented community adaptation plan action aiming to combat desertification, soil erosion and land degradation	No comprehensive community (cluster) adaptation plans exist in the intervention zones to be selected.	20 comprehensive adaptation plans have been implemented with respect to combat desertification, soil erosion and land degradation.	• Project reports • Site visits	Communities / village clusters prioritise the fight against desertification, erosion and soil degradation in their adaptation plans. No major emergencies jeopardise the implementation of planned works.
<u>Outcome 2.1:</u> **Advance of sand dunes slowed down, halted or reversed**	Reduced, halted or reversed dune advance in participating communities	To be established during project year 1	Significant deceleration – and ideally reversal – of dune advance	• Project reports • Ecol. Monitoring reports • Site visits	
Output 2.1: 1,500-2,000 ha of dunes fixated.	Plants – and other measures – have stopped advance of dunes	Sand dune fixation does take place as part of several projects, but hardly in the zones to be selected.	Communities have fixated dunes and have a clear plan for maintaining / reinforcing fixation	• Project reports • Site visits	
<u>Outcome 2.2:</u> **Increased vegetation cover in intervention zones**	Increased Vegetation Cover Index in participating communities	ICV is not used systematically (mainly in ProGRN). Baseline to be established as part of adaptation plan preparation	Increase of ICV by at least 10% in participating village clusters until end of project, and clear prospect for further increase	• Project reports • Ecol. Monitoring reports • Site visits	
Output 2.2: 1,000-1,500 ha of vulnerable zones protected.	Area of land protected from against uncontrolled grazing and bush fires	There will only be sporadic protected areas in selected village clusters	1,000 – 1,500 ha of land protected and encompassed by sustainable management plan	• Project reports • Adaptation plans • Ecol. Monitoring reports • Site visits	
Output 2.3: 1,000-1,500 ha of community fuel wood forests planted.	Area of land planted and controlled for fuel wood production; volume of produced fuel wood	There is hardly any controlled fuel wood plantation in areas to be selected	Participating communities cover at least 50% of their fuel wood requirements from controlled wood production	• Project reports • Adaptation plans • Site visits	
<u>Outcome 2.3:</u> **Decreased loss of water and soil through surface run-off**	Increased surface and sub-soil water availability	There are only few – if any – water retention structures functioning in areas to be selected	Area where days of water availability has increased with at least 20% has grown by at least 20%	• Project reports • Adaptation plans • Ecol. Monitoring reports • Site visits	
Output 2.4: Water retention structures built covering approx 500 ha.	Number, kind, surface size and volume (where applicable) of water retention structures	To be established as part of adaptation plan preparation	Communities construct and maintain retention assets according to plan	• Project reports • Adaptation plans • Site visits	

	Indicator	Baseline	Target	Sources of Verification	Risks and assumptions
OBJECTIVE 3 **Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population**	Number and type of implemented community adaptation plan action aiming to diversify and strengthen the livelihoods of the most vulnerable population	No adaptation plans are in place, livelihood bases are hardly diversified in areas to be selected	Communities have implemented adaptation plan action and continue to gain sustainable income from new sources	• Project reports • Adaptation plans • Site visits	Communities / village clusters prioritise the diversification and strengthening of their livelihood bases in their adaptation plans. No major emergencies jeopardise the implementation of planned training and works.
Outcome 3.1: **Increased number of sources of income for participating households**	Number and type of sources of income for participating households before and after the project	Livelihood bases are hardly diversified in areas to be selected – specific baselines to be established as part of adaptation plan preparation	At least 20 5 of village cluster population have widened their livelihood bases with new sources of income	• Project reports • Site visits	
Outcome 3.2: **Increased income for participating households**	Level of income for participating households before and after the project	Participating households are among the poorest in the selected areas.	Participating households have increased their revenues by at least 40%	• Project reports • Beneficiary interviews	
Outcome 3.3: **Increased availability of and access to food for participating communities**	Food gap (number of weeks/months) for participating households before and after the project	Participating households have the greatest food gap in the selected areas.	Participating households have decreased their food gap by at least 50%	• Project reports • Beneficiary interviews	
Output 3.1: Approx 300,000 trees for revenue generation and food planted in protected areas.	Number of trees planted and growing in protected areas; amount of food and revenue gained from these.	Baseline to be established as part of adaptation plan preparation	Planted trees already are – or have at least a clear prospect of – providing substantial amounts of food and income	• Project reports • Adaptation plans • Site visits	
Output 3.2: 4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilization.	Number of people (gender disaggregated) trained	Hardly any training is available in areas to be selected; extension staff requires training, too	Extension staff and cluster population are aware of and apply appropriate techniques	• Project reports • Recipient perception study • Site visits	
Output 3.3: 5,000 technical staff and community leaders trained and equipped for plant/seed multiplication.	Number of people (gender disaggregated) trained	Hardly any training is available in areas to be selected; extension staff requires training, too	Extension staff and cluster population are aware of and apply appropriate techniques	• Project reports • Recipient perception study • Site visits	
Output 3.4: 4,000 technical staff and community leaders trained and equipped for poultry development.	Number of people (gender disaggregated) trained	Hardly any training is available in areas to be selected; extension staff requires training, too	Extension staff and cluster population are aware of and apply appropriate techniques	• Project reports • Recipient perception study • Site visits	

	Indicator	Baseline	Target	Sources of Verification	Risks and assumptions
Output 3.5: 1,600 technical staff and community leaders trained and equipped for apiculture.	Number of people (gender disaggregated) trained	Hardly any training is available in areas to be selected; extension staff requires training, too	Extension staff and cluster population are aware of and apply appropriate techniques	• Project reports • Recipient perception study • Site visits	
Output 3.6: Approx 20 community cereal banks established.	Number of functioning village cereal bank associations; volume of cereals and money in bank.	No village-owned cereal banks exist in areas to be selected – to be confirmed during adaptation planning	Participating communities own their VCB, membership, money and food held by associations is stable	• Project reports • Site visits	
Output 3.7: 30,000 fuel efficient stoves provided.	Number of fuel efficient stoves built by participating communities; share of reduced consumption of fuel wood	Fuel-efficient stoves are hardly know and available in areas to be selected – to be confirmed during adaptation planning	Communities know, understand and use fuel efficient stoves; fuel-wood consumption by participating households reduced by at least 40%	• Project reports • Site visits	
Output 3.8: 2,000 community members (mostly youth) trained to build and maintain fuel efficient stoves.	Number of people (gender-disaggregated) trained	No training is available in areas to be selected; extension staff requires training, too.	In all participating communities a group of people regularly builds and repairs fuel-efficient stoves;	• Project reports • Site visits	

A Results Framework Alignment Table is provided in Annex 5.

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

M. Sidi Mohamed El Wavi First Adviser to the Minister Head of Mission Coordinator of the National Programme on Climate Change (CCPNCC) National Focal Point UNFCCC Ministry attached to the Prime Minister in charge of Environment and Sustainable Development	Date : Signature :

B. IMPLEMENTING ENTITY CERTIFICATION *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (……list here…..) and subject to the approval by the Adaptation Fund Board, understands that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project.

Implementing Entity Coordinator:

M. Alain Cordeil
Country Director
World Food Programme
Mauritania

Date: Tel :

Project contact person:

Mr. Limam Abdawa, National Program Officer, World Food Programme Mauritania

Tel:

E-mail: Limam.Abdawa@wfp.org

Annex 1: Output based budget and budget explanatory note

A) Output-based budget overview

Component		Budget per component	Output	Budget per output	other finance	Funding requested from AF
1	Support Technical Services and the communities they serve to better understand climate risks, their impact on livelihoods and food security, and devise relevant and realistic adaptation plans and measures	2.323.256	1.1 Eight DREDD (regional technical services of MDEED) strengthened to access and analyse climate change information, to monitor local development and to mobilise and support communities	1.187.200	533.800	1.789.456
			1.2 Strengthening of Government's threat, risk and vulnerability analysis	256.800		
			1.3 20 inter-village associations established and supported***	30.000		
			1.4 Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food in security	28.800		
			1.5 100 villages, being clustered according to landscape, ecosystem and livelihoods, have prepared adaptation plans that are integrated into local development planning.	40.000		
			1.6 Comunities share success stories and lessons learned, including the establishment and support of 4 community radios	402.456		
			1.7 Monitoring system in place (establishment, training, production of data and reports) to track climate events and ecologic development in project intervention zones.	378.000		
2	Design and implement concrete adaptation measures identified through community adaptation planning that aim to combat desertification soil erosion and land degradation	2.615.850	2.1 1,500 - 2,000 ha of sand dunes fixated	490.950	117.600	2.498.250
			2.2 1,000 - 1,500 ha of vulnerable zones protected	727.500		
			2.3 1,000-1,500 ha of community fuel wood forests planted.	698.700		
			2.4 Water retention structures built covering apporximately 500 ha	698.700		
3	Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population	2.333.520	3.1 300,000 trees for revenue generation and food planted in protected areas	429.350	80.000	2.253.520
			3.2 4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilisation	295.600		
			3.3 5,000 technical staff and community leaders trained and equipped agro-pastroal IGA, including plant multiplication	354.000		
			3.4 6,000 technical staff and community leaders trained and equipped for poultry development	212.830		
			3.5 1,000 technical staff and community leaders trained and equipped for apiculture	195.260		
			3.6 Approx 20 community cereal banks established.	370.000		
			3.7 30,000 fuel efficient stoves built	296.440		
			3.8 2,000 community members (mainly youth) trained and equipped to build and maintain fuel efficient stoves	180.040		
Total project costs		**7.272.626**		**7.272.626**	**731.400**	6.541.226

B) Budget Explanation Notes

For many outputs, calculations include standard unit costs, which are provided in the following table. These will be presented and explained below in sub-section B.1. Thereafter, explanations for the budget per output will be provided in sub-section B.2. All prices are in US$.

Standard Unit Costs

Item		Unit	Unit cost
1	Food for work	Work months per participant	**28,8**
2	Food for training	Work months per participant	**14,4**
3	Support to households joining a Village Cereal Bank	Cost of food per household	**78,0**
4	Cost of training at ENFVA	Month of training per month per participant (incl. Travel, DSA, e	**1.000**
5	Cost of on-the-job support by NGO to DREDD	Payment to implementing partner per month of support	**1.100**
6	Technical assistance	Short term advice, studies, per month	**5.000**
7	Technical assistance	Long-term to CCPNCC (incl. DSA)	**7.000**
8	Infrastrucuture and Equipment central level	GIS equipment, IT-equipment, 1 vehicle, some repairs	**60.000**
9	Hospitality during village meetings	Lump-sum per visit	**100**
10	Salary of DREDD	Salary per work month	**400**
11	DSA DREDD and drivers	Per day of in-country travel	**90**
12	Vehicle running costs	Lump-sum per vehicle per year	**3.000**
13	Animation / mobilisation, etc.	Cost of animation per village (salaries, travel, etc.)	**1.841**
14	Training	Cost of training per village (salaries, travel, etc.)	**2.200**
15	Support to community storage infrastructure	Lump sum (urchase price, transport, installation)	**13.500**
16	Provision of non-food items required for food-for-work activities (component 2)	Lump sum per village	**4.200**
17	Tools and non-food items supporting improved stoves foyers améliorés	Lump sum per village	**500**
18	Strengthening of technical services - equipment	Lump sum per service	**35.000**
19	Infrastructure and equipment per community radio	lump-sum per radio	**60.000**
20	Coaching and other running costs for CR	lumps-sum per month	**1.000**
21	Technical study on community radio feasibility etc.		**12.000**
22	Backstopping of CR, quality assurance, etc.	lumps-sum per month, incl. salary, travel etc.	**18.000**
23	Study on apiculture, training of trainers, quality assurance	lumps-sum per month, incl. salary, travel etc.	**20.000**

B.1 Explanation of Standard Unit Costs

Item 1: Food for work: The cost of food to be provided per participant per work month is calculated on an average cost of 600 US$ per ton, the normal ration of 2.4 kg per participant (representing a household of five) per working day and 20 working days per month.

Item 2: Food for training: the same calculation applies, but the ration is only half (i.e. 1.2 kg per participant per training day).

Item 3: Support to households joining a Village Cereal Bank: In similar operations, WFP provided a one-time support of 130 kg of cereals to a household joining a Village Cereal Bank. The standard cost applies the cost per metric ton to this quantity.

Item 4: Cost of training at ENVFA: The cost per participant per month, including transport, accommodation, food, venue and teacher, is estimated by the Government (MDEDD) at 1,000 US$.

Item 5: On-the-job support by implementing partner to DREDD: This cost is estimated jointly by MDEDD and WFP at 1,100 US$, based on past experience.

Item 6: TA, short term: For budgeting purposes, a lump-sum of 5,000 US$ per month is estimated as realistic by WFP and Government, including salary, travel and DSA. For specific assignments, the project will assess if a lump-sum is the most favorable solutions, or if costs should be adjusted to specific conditions (location, duration).

Item 7: TA, long term: The cost of 7,000 US$ per month for a long-term adviser to CCPNCC – including salary, DSA and travel – is estimated as realistic.

Item 8: Infrastructure and equipment central level: A total of 60,000 would include 1 vehicle for CCPNCC, repairs to office premises, and GIS/IT equipment for CCPNCC plus relevant other central services for about 20,000 US$.

Item 9:Hospitality during village meetings: this would include ideally some working tools (paper, pens, flip-charts, etc.) or other practical items that could be provided to village cluster associations – plus some contributions to joint lunches and dinners – altogether about 100 US$ per visit.

Item 10: Salary of DREDD: It is estimated that the DREDD will spend about 20% of their work-time on the implementation of the project. Their monthly salary is about 2,000 US$, i.e. the standard unit cost included in the budget is 400 US$ (which will be counted as government contribution).

Item 11: DSA DREDD and drivers: DSA outside of Nouakchott is on average 90 US$.

Item 12: Vehicle running costs: A lump-sum of 3,000 US$ for fuel and maintenance is estimated by Government and WFP as very low, but possibly sufficient.

Item 13: Animation / mobilization: A lump-sum of 1,841 US$ for one month of animation / mobilization per village cluster has been carefully calculated by MDEDD and WFP based on average local salaries for animators and current exchange rates.

Item 14: Cost of training: A lump-sum of 1,841 US$ for one month of animation / mobilization per village cluster has been carefully calculated by MDEDD and WFP based on average local salaries for trainers and current exchange rates.

Item 15: Support to community storage structures: Items included in the lump-sum of 13,500 are basic repairs to available storage structures, some new constructions, as well as equipment required for proper warehousing (including pallets, balances, etc.)

Item 16: Non-food items: a standard lump-sum of NFI supporting labor intensive programs of 4,200 US$ was set by WFP based on previous experience. For the individual types of activities, this lump-sum will be adjusted according to expected requirements (full lump-sum, half lumps-sum, etc.), see below section B.2

Item 17: Tools and NFI for fuel efficient stoves: the project will work to the extent possible with material that can be provided free of cost by communities themselves (mainly clay). Some tools or material input may be required, however. The lump-sum of 500 US$ per village is deemed minimal, but sufficient.

Item 18: Strengthening of technical services (DREDD), NFI: the lump-sum of 35,000 US$ includes one vehicle per DREDD, repairs to office premises and some office furniture and equipment.

Item 19: Infrastructure and equipment per community radio: the lump-sum of 60,000 US$ is based on UNESCO's community radio handbook (for studio) and other experience for radio mast, generator, etc.

Item 20: Coaching and other running costs of Community radio: the lump-sum is based on an estimate of local "salaries" for a coach and on average 2 salaried staff of a CR – based on experience summarized in Jallov, B., Empowerment Radio.

Item 21: Technical study on community radio feasibility: The lump-sum is based on a usual WFP rate for a qualified international expert working for 15-18 days.

Item 22: Backstopping of community radio: the same rates apply as for item 21.

Item 23: Study on apiculture: the same rates apply as in item 21, but more work and travel days are foreseen.

B.2 Budget explanation by output

1.1 Eight DREDD strengthened: This is by far the most costly output of the project. It is also highly crucial and indispensible if the project is supposed to make a real long-term, tangible difference. The costs include the following:

	Total
Three months of intensive training for DREDD plus 2 additional technical staff at ENFVA:	72,000
Technical support on-the-job provided by an implementing partner to each DREDD over three years:	316,800
DSA for DREDD and driver (2 persons from each DREDD) for at least 40 travel days per year):	230,400
Vehicle running costs for 4 years:	96,000
Reinforcement of DREDD staff: one driver per DREDD:	115,200
Infrastructure and equipment:	280,000
Office running costs: 200 US$ per DREDD per month	76,800
Total:	**1,187,200**

1.2 Strengthening of (central) government capacity for threat, risk and vulnerability analysis: The sum of 219,300 US$ includes

- technical assistance for 3 government services for two weeks each during 3 project years;
- infrastructure and equipment (see explanation for standard unit costs);¨
- running costs of the vehicle for CCPNCC, including the costs of one driver
- salary for one additional administrative staff of CCPNCC (government contribution)
- costs for enlarged office premises of CCPNCC (Government contribution)

1.3 Inter-village associations established and supported: Payment of implementing partners, travel and DSA is already included in the different positions under 1.1. The sum of 30,000 includes

- A lump-sum for hospitality for consultation and facilitation visits
- 20% of DREDD salary for a total of 60 months over the project duration (government contribution)

1.4 Communities trained in climate change threats and adaptation measures: Payment of implementing partners (trainers), travel and DSA is already included in the different positions under 1.1. The sum of 28,800 includes covers the cost of food-for-training during one month for 100 participants in each of 20 village clusters.

1.5 **Villages have prepared cluster adaptation plans:** Payment of implementing partners (trainers), travel and DSA is already included in the different positions under 1.1.The sum of 40,000 US$ covers 20% of DREDD salaries during 4 months for each cluster, plus a lump-sum for cluster visits.

1.6 **Communities share success stories** / 4 community radios established and running: The sum of 407,456 US$ includes

- One up-start feasibility study for all CRs
- Two work-months of mobilization during each of two project years for each of four CRs
- Part-time coaching plus utilities and running costs during 2 project years
- Infrastructure and equipment
- Part-time backstopping and quality assurance over three project years

1.7 **Monitoring system in place**: the sum of 378,000 US$ covers

- 6 weeks of training for each village cluster
- 48 months of technical assistance to CCPNCC, including salary, DSA and travel.

2.1 **1,500 – 2,000 ha of sand dunes fixated:** The sum of 493,200 US$ covers

- Costs of food for 150 participants working for 3 months during 1 project year in each of 20 clusters
- 20% of DREDD salary for 3 work months in 20 clusters
- Costs of non-food items (NFI) - half lump-sum

2.2 **1,000 – 1,500 ha of vulnerable zones protected:** The sum of 732,000 US$ covers

- Costs of food for 100 participants working on fences for 3 months during 1 project year in each of 20 clusters
- Costs of food for 100 participants working on firebreaks for 2 months during 1 project year in each of 20 clusters
- 20% of DREDD salary for 3 work months in 20 clusters

2.3 **1,000 – 1,500 ha of community fuel wood forests planted**: The sum of 703,200 US$ covers

- Costs of food for 150 participants working on fencing, planting and nursing for 3 months during 1 project year in each of 20 clusters
- 20% of DREDD salary for 3 work months in 20 clusters
- Costs of NFI - full lump-sum

2.4 **Water retention structures built covering about 500 ha:** The sum of 703,200 US$ covers

- Costs of food for 150 participants working on dams, diguettes etc for 3 months during 1 project year in each of 20 clusters
- 20% of DREDD salary for 3 work months in 20 clusters
- Costs of NFI - full lump-sum

3.1 **300,000 trees for revenue generation and food planted.** The sum of 431,600 US$ covers

- Costs of food for 175 participants planting different species of trees for 2 months during 1 project year in each of 20 clusters
- 20% of DREDD salaries during 4 months for each cluster, plus a lump-sum for cluster visits.
- Costs of NFI - half lump-sum – total budget for investments/assets: 207,750 US$.

3.2 **Training in livestock management, agricultural techniques and efficient water utilization** (decentralized natural resource management): The sum of 295,600 US$ covers

- Costs of food for training for 200 participants participating in one-month training in each of 20 clusters during 1 project year
- Provision of training during 3 months for each cluster. Additional work-time from other technical extension services will be provided by government without additional cost to the project.
- Costs of NFI - a lump-sum of 1,060 per village to support training, and provide some basic, essential equipment enabling communities to apply acquired knowledge and skills. Total budget for assets investments foreseen is 106,000 US$.

3.3 **Training in agro-pastoral IGA,** including plant multiplication: The sum of 354,000 US$ covers

- Costs of food for training for 250 participants participating in one-month training in each of 20 clusters during 1 project year
- Provision of training during 3 months for each cluster, plus a lump-sum for cluster visits. Additional work-time from other technical extension services will be provided by government without additional cost to the project.
- Costs of NFI - a lump-sum of 1,500 per village to support training, and provide some basic, essential equipment enabling communities to apply acquired knowledge and skills (e.g. constructing water-efficient nursery tables). Total budget for assets investments foreseen is 150,000 US$.

3.4 **Training in poultry** (or other small livestock) development: The sum of 212,830 US$ covers

- Costs of food for training for 200 participants participating in one-month training in each of 20 clusters during 1 project year
- Provision of training during 1,5 months for each cluster, plus a lump-sum for cluster visits. Additional work-time from other technical extension services will be provided by government without additional cost to the project.
- Costs of NFI - a lump-sum of 1,000 per village to support training, and provide some basic, essential equipment enabling communities to apply acquired knowledge and skills (e.g. constructing enclosures, water and fodder storage, etc.). Total budget for assets investments foreseen is 100,000 US$.

3.5 **Training in apiculture** development: The sum of 202,760 US$ covers

- An upstart feasibility and market study on apiculture
- Costs of food for training for 80 participants participating in three-month training in each of 20 clusters during 1 project year
- Provision of training during 2 months per cluster. Additional training work-time from other technical extension services will be provided by government without additional cost to the project.
- Costs of NFI - a lump-sum of 300 per village to support training, and provide some basic, essential equipment enabling communities to apply acquired knowledge and skills (e.g. constructing hives (from local material), extraction and storage of honey, etc.). Total budget for assets investments foreseen is 30,000 US$.

3.6 **Establishment of village cereal banks**. The sum of 370,000 US$ covers

- Costs of food for an average of 50 participating households in each of the 20 clusters
- Provision of training during 2 weeks per cluster. Additional training work-time from other technical extension services will be provided by government without additional cost to the project.

- Costs of NFI - a lump-sum of 13,500 per village cereal bank to support training, and provide a basic, safe and quality storage environment. Total budget for assets investments foreseen is 270,000 US$.

3.7 30,000 fuel-efficient stoves built. The sum of 296,440 US$ covers

- Costs of food for work for 100 participants during 3 work months in each of the 20 clusters
- Provision of training during 2 months per cluster. Additional training work-time from other technical extension services will be provided by government without additional cost to the project.
- Costs of NFI - a lump-sum of 500 US$ per village. Total budget for assets investments foreseen is 50,000 US$.

3.8 2,000 community members trained to construct and maintain fuel-efficient stoves. The sum of 180,040 US$ covers

- Costs of food for training for 100 participants during 3 work months in each of the 20 clusters
- Provision of training during 2 months per cluster. Additional training work-time from other technical extension services will be provided by government without additional cost to the project.
- Costs of NFI - a lump-sum of 200 US$ per village to support training. Total budget for assets investments foreseen is 20,000 US$.

It is obvious that the unit prices and exact quantities of items, including NFI, number of work-months, etc. will deviate to some extent from the present budget. The quantities and unit prices included are educated estimates, based on current prices, established work norms and experience of government and WFP. Throughout project implementation, cost-efficiencies and savings will be sought. However, possible savings in some areas might be off-set by increased costs in others. Where net savings are achieved, the project will invest the resulting available resources in project replication / production of additional outputs to further increase results.

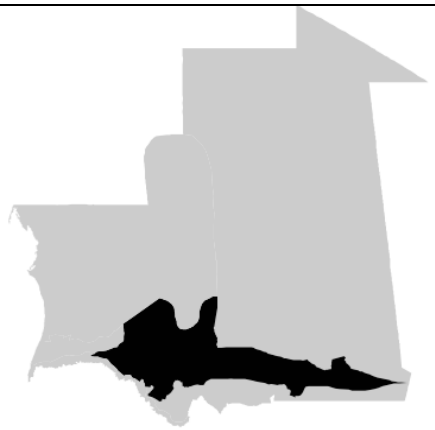
C. Breakdown of Execution Costs and explanation

The budgeted project execution costs have been calculated as follows:

Position	unit	unit price	# of units	Total	Government	AF
Project coordinator	month	6.000	44	264.000	0	264.000
DSA coordinator	lump sum	171.855	1	171.855	0	171.855
International travel coordinator	air tickets	2.400	2	4.800	0	4.800
Administrative assistant	month	1.000	48	48.000	48.000	0
Driver (10)	month	300	480	144.000	144.000	0
Vehicles	purchase	34.000	1	34.000		34.000
Vehicle running costs (1)	lump-sum per yea	3.000	4	12.000		12.000
Communication	lump-sum per yea	20.000	4	80.000		80.000
Air travel	air tickets	4	2.170	8.680		8.680
Office space Project team Nouakchott (govt)	rent per month	1.000	48	48.000	48.000	0
Monitoring and evaluation				109.000	0	109.000
				924.335	**240.000**	**684.335**

Two assistants will be assigned to the project: One administrative assistant – funded by Government – will work directly with the project coordinator at MDEDD, ensuring support to the coordinator in all day-to-day work of managing the project. In addition, one liaison assistant will be placed within the WFP country office to ensure close coordination and smooth operations between the project and WFP implementation and accounting systems. This liaison assistant will be financed from the management fee and does therefore not figure in the project execution costs.

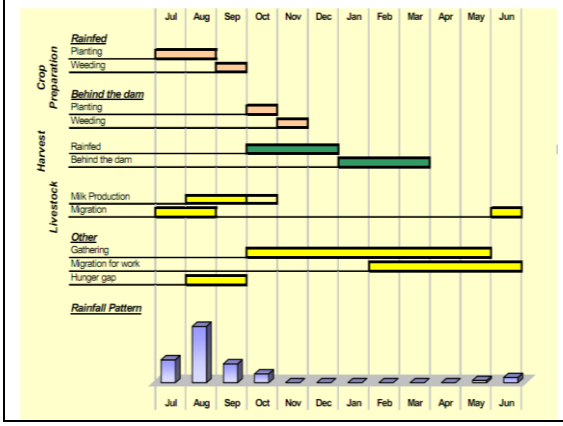
Annex 2: Socio-Economic Characteristics of the Agro-Pastoralist Livelihood Zone



Historical trends: Changes in rainfall during the 1970s and 1980s have resulted in the deterioration of assets, especially among poor households. Loss of livestock due to drought and environmental degradation has forced some households to rely more on agriculture. For other households, the pattern of reduced rainfall has highlighted the need for diversification and so households have bought animals when they could afford them.

Recent trends: Population pressure together with recent climatic variability has pushed people to cultivate more widely on former pasturelands at these northern limits of viable rainfall for cereals (sorghum and millet). This affects both livestock potential (due to overgrazing) and agricultural potential (due to less frequent rainfall in the northern part of the livelihood zone).

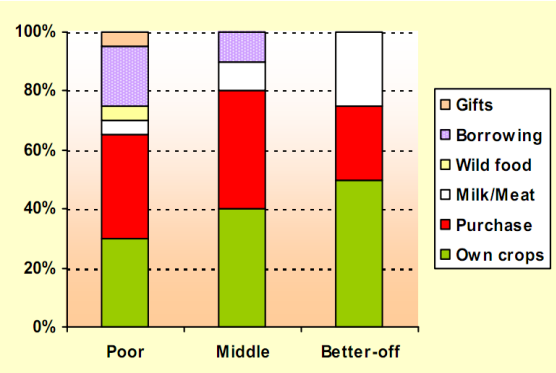
Seasonal calendar



The **seasonal calendar** highlights the high sensitivity of agro-pastoral areas to climate: rain-fed agriculture and pastoralism depend on reliable and sufficient precipitation during the rainy season (JAS).

Under climate change, the timing of rainfall could be delayed with more intense precipitation in a shorter period, potentially leading to drier years and localized floods. This, in turn, would affect the quantity and quality of crop yields as well as of livestock products (milk). Ensuring a sustainable source of water is therefore critical in this livelihood zone.

Sources of food

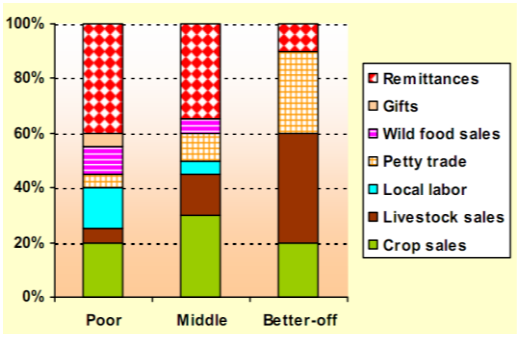


A majority of households (60 percent) are considered to be poor in this livelihood zone. All wealth groups depend on climate-sensitive food sources (own production, purchase, milk and wild food) for their consumption.

The poor and middle wealth groups especially depend on markets. Potential food price increases due to changes in crop production could exacerbate the vulnerability of these groups.

Additionally, the high reliance on own production highlights the vulnerability of households in this zone to changes in rainfall that could affect crop production.

Sources of cash



Although households in all wealth groups sell their crops, the poorer households sacrifice some of their insufficient food stock. They usually sell cereals to repay some of the debts obtained from borrowing money during the hunger gap.

The poor and middle wealth groups also depend to a large extent on remittances from Nouakchott and other cities, highlighting the important relationship between urban and rural areas in Mauritania.

Annex 3: Preliminary Indicator Catalogue Anticipated in the draft PANE II

Overall Objective: Mauritania is engaged to develop and use the best approaches for environmental protection and sustainable management of natural resources

Sector Objective: MDEDD is seen as an effective and efficient leader in the implementation of the environmental policy, playing its cross-sectoral and inter-sectoral role.

Preliminary Sector Reform: Reinforce the capacity of the environmental administration through th implementation of institutional sector reform

Matrix of major indicators allowing to measurement of quality and impacts of the Mauritanian environmental policy based on six priorities:

1. Evaluation of environmental control

Indicators

- Every investment project is subjected to a regular environmental assessment and obligatorily undergoes an Environmental and Social Impact Assessment and the identified compensatory mitigation measures are effectively carried out according to Environmental and Social Management Plans
- The treatment of solid and liquid waste does not any more constitute a major risk for urban centres
- The reduced demand for plastic bags is encouraged by an officially established restrictive policy

2. Sustainable Management of Natural Resources

Indicators

- The vegetation cover is stabilised or even increasing
- Food insecurity and poverty in rural areas are decreasing due to an increased availability of natural resources

3. Increase of Protected Areas

Indicators

- The surface of protected areas reaches 12 and 17 percent of the marine and terrestrial territory of Mauritania
- Habitat for migratory birds and fish are preserved through a network of established and functioning protected areas
- The wealth of fauna and flora biodiversity improves, according to objectively verifiable indicators

4. Prevention of Catastrophes due to Climate Change

Indicators

- The threatening risks of natural catastrophes for the City of Nouakchott are considerably reduced

5. Promotion of Renewable Energy

Indicators

- The share of fossil fuels within the country's energy consumption is decreasing

6. Legal Framework

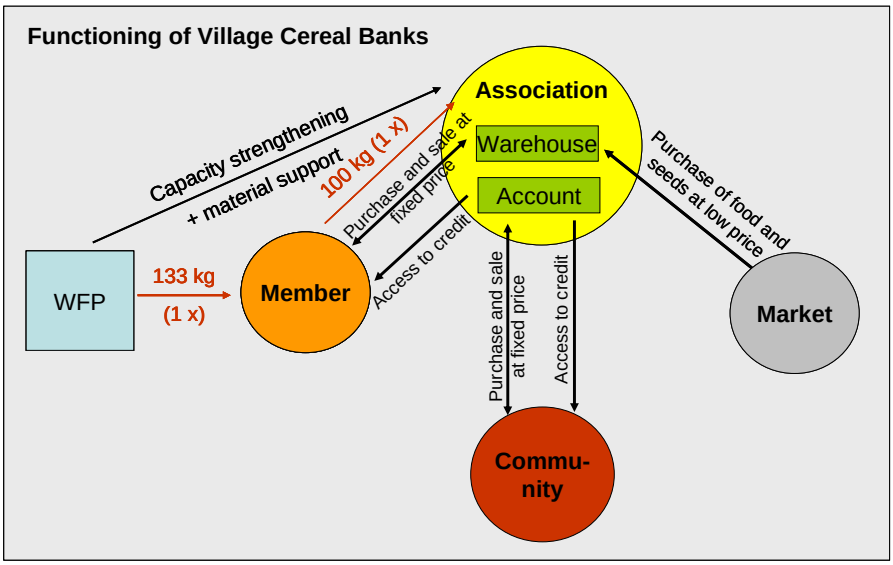
Indicators

- All areas of the environment sector are subject of clear, well-adapted and rigorous regulations.
- The ensemble of environmental regulations is reviewed and harmonised
- Consultation and systematic sharing with MDEDD of any draft legislation of environmental character

Annex 4: Village Cereal Banks (VCB) – the pilot project of Tambacounda, Senegal

During the pilot phase of 2009, 17 (of 24 planned) Village Cereal Banks (VCB) have been supported in the region of Tambacounda, Senegal, where large price fluctuations between the lean season and after harvests over time had pushed an increasing number of small farmers into deepening poverty and dependency from large-scale traders. A total of 2.346 VCB-association members have received altogether 312 mt of cereals, resulting in a combined VCB-stock of 234.6 mt. In addition, WFP has provided institutional support to the VCB associations in terms of training, mobilisation and equipment.

WFP provides support to an association which is formed as a legal person with legal status and internal regulations, a functioning warehouse and a bank account. Once the association is formed, each member receives from WFP the quantity of 133 kg of cereals against the obligation of the member to contribute with 100 kg of cereals to the stocks of the VCB. The association sets a fixed price at which it will sell cereals to its members and its community during the lean season. Where a household does not provide of cash resources at that time, it can obtain cereals on the basis of a credit that can be repaid after harvest (in kind or in cash). Interest rates are very low, and slightly higher for non-members. With its financial resources, the association buys commodities and seeds on the market during favourable periods and at low prices. Credits are also provided to association or community members to buy seeds or to cover other financial needs. The functioning of the VCB is illustrated below:



The following **outcomes** have been reported by the associations interviewed:

- The possibility to stabilise the price of cereals on the local market, including during the lean season;
- The availability of food in the locality;
- The avoidance of premature harvests (often practiced before as people could not wait)

The operation has at least contributed strongly to the achievement of the following **impacts**:

- An increased self-responsibility and strengthened spirit of sharing and solidarity in the communities
- A significant increase of local capacities of organisation (responsibility of beneficiaries, establishment of various committees, transparency, etc.) and good local governance;
- A reduction of the rural exodus and the maintenance of production capacities (main d'œuvre) in rural zones
- The increase of local production due to the availability of good quality seeds at affordable prices, access to credit, reduction of premature harvests and the possibility of storage (which also provides a stronger incentive to produce more)
- Strengthened food security, in particular in isolated areas; and
- Reduced vulnerability to shocks.
- The President of the Rural Community of Malem Niani gave his synthesis of the positive impacts of the VCB in his community: **"Here, there is no more hunger.**

Annex 5: Alignment of Project Objectives/Outcomes with Adaptation Fund Results Framework

Project Component 1 Objective	**Project Component 1 Objective Indicator**	**Fund Outcome**	**Fund Outcome Indicator**
Enhanced understanding, skills and means of decentralized government and communities for leading and facilitating participatory adaptation planning	Number of community adaptation plans prepared through participative local planning supported with information and facilitation by decentralized government (DREDD)	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1 Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
Project Component 1 Outcomes	**Project Component 1 Outcome Indicators**	**Fund Output**	**Fund Output Indicator**
Outcome 1.1: Strengthened awareness, ownership and facilitation capacities of government services (DREDD)	DREDD have played an active and supportive role in the mobilization, organization and implementation of inter-village adaption planning processes	***Output 3***: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. and type of risk reduction actions or strategies introduced at local level
Outcome 1.2: Strengthened awareness, ownership, planning and management capacities at community level for local natural resource management and climate change adaptation	Communities and their relevant sub-groups (e.g. women, livelihood groups, etc.) have actively participated in the preparation of the inter-village adaptation plans prepared and see their interests adequately reflected.		
Outcome 1.3: National ecologic monitoring system strengthened and tested	Participating communities and government services have provided quality, timely and reliable ecologic monitoring reports aligned with the national monitoring system		
Project Component 2 Objective 2	**Project Component 2 Objective Indicators**	**Fund Outcome**	**Fund Outcome Indicator**
Design and implement concrete adaptation measures identified through community adaptation planning that aim to combat desertification soil erosion and land degradation	Number of implemented community adaptation plan action aiming to combat desertification soil erosion and land degradation	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress

Project Component 2 Outcomes	**Project Component 2 Outcome Indicators**	**Fund Output**	**Fund Output Indicator**
Outcome 2.1: Advance of sand dunes slowed down or halted	Reduced, halted or reversed dune advance in participating communities	***Output 5:*** Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)
Outcome 2.2: Increased vegetation cover in intervention zones	Increased Vegetation Cover Index in participating communities		
Outcome 2.3: Decreased loss of water and soil through surface run-off	Increased surface and sub-soil water availability		
Project Component 3 Objective 3	**Project Component 3 Objective Indicators**	**Fund Outcome**	**Fund Outcome Indicator**
Design and implement concrete adaptation measures identified through community adaptation planning that aim to diversify and strengthen the livelihoods of the most vulnerable population	Number and type of implemented community adaptation plan action aiming to diversify and strengthen the livelihoods of the most vulnerable population	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets
			6.2. Percentage of targeted population with sustained climate-resilient livelihoods
Project Component 3 Outcomes	**Project Component 3 Outcome Indicators**	**Fund Output**	**Fund Output Indicator**
Outcome 3.1: Increased number of sources of income for participating households	Number and type of sources of income for participating households before and after the project	***Output 6:*** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individual- or community-livelihood strategies
Outcome 3.2: Increased income for participating households	Level of income for participating households before and after the project		6.1.2. Type of income sources for households generated under climate change scenario
Outcome 3.3: Increased availability of and access to food for participating communities	Food gap (number of weeks/months) for participating households before and after the project		

Annex 6: Consultations During Project Preparation

1. Consultations with Government (MDEDD)

Many consultations have been held with the Delegated Ministry of Environment and Sustainable development (MDEDD). The main interlocutors at MDEDD include the following:

Name	Function	Institution
M. Amedi Camara	Minister	Delegated Ministry for Environment and Sustainable Development
M. Sidi Mohamed El Wavi	National Coordinator	Coordination Cell for Climate Change (CCPNCC), MDEDD
Boubacar Diop	National Director	National Directorate for Nature Protection and Fight Against Desertification (DPN), MDEDD
Mohammed Yahya Lafdal	National Director	National Directorate for Programs, Coordination and Environment Information (DPAE), MDEDD
Maubaye Abdelrahman	National Director	National Directorate for Pollution and Environmental Emergencies (DPUE), MDEDD
Maloune Dine Maouloud	National Director	National Directorate for Communication, Information and Education (DCIE), CIE, MDEDD
Alioune Fall	Chef de Service	National Directorate for Nature Protection and Fight Against Desertification (DPN), MDEDD
M. Fall Oumar	Chief Technical Adviser	CCPNCC, MDEDD

2. List of sites visited where discussions were held participants and beneficiaries

(These are sites house from other projects with similar labor-intensive work programs to combating soil degradation and desertification, plus IGA) – all sites are in the regions of Trarza and Brakna.)

- Agbe
- Meimoune
- Demane
- Roueibina
- Azlat
- Wabinde
- Dar sellam
- Regbe2
- Rabia
- Diawlé
- PK19
- PK84
- PK32

More in-depth discussions were held with the **community management committees** of:

- DEMANE (Trarza), contact M. Mohamed Ahmed O/ Youra telephone 22359483/22425271
- DIAWLE, (Trarza), contact M. Mohamed Ould Meyne 46945787
- AZLAT (Brakna), contact M. Moustapha Ould Abdel Kader, telephone 22353503/22044656

- WABINDE (Brakna), contact M. Ramdane Mint Moussa

3. (Partial) List of participants at consultation workshop 28-29 February 2012

Name	Function	Institution
Mohamed El Mamy	Maire	Elu, Gudhimaghu
Mohamed Vall-Lelle	Délégué regional	DREDD Guidimaka
Tombo Mamadou Aly	Délégué regional	DREDD Trarza
Mohamed Sidi Mohamed	Délégué regional	DREDD Hodh El Charghi
Hademine Mustafa	Délégué regional	DREDD Targant
Ahmed Mohamed Sow	Coordinateur	ONG ARK, Rosso
Mohamed Lemin Ahmedou	Société Civile	Hodh El Charghi
Boubacar Diop	Directeur National	Direction Protection de la Nature MDEDD
Mohammed Yahya Lafdal	Directeur National	Direction de Programmation, Suivi et Evaluation, MDEDD
Alioune Fall	Chef de Service	Direction Protection de la Nature (PDN) MDEDD
Baye Mohamed Abdallah	Directeur National	Direction Formation et Vulgarisation, MDR
Maubaye Abdelrahman	Directeur National	Direction Nationale d'Urgences Environnementales MDEDD
Maloune Dine Maouloud	Directeur National	Direction Nationale CIE, MDEDD
Baba al Mohamedou	Directeur des Programmes	Commisariat de Sécurité Alimentaire (CSA)
Mohamed Lemine Vally	Directeur adjoint	DPUE, MDEDD
Sidi Mohamed El Wavi	Coordinateur National	Cellule de Coordination pour les Changements Climatiques, MDEDD
Fall Oumar	Conseiller Technique Principal	CCPNCC
Diallo Ahmed	Chef de Service	CSA
Alain Olive	Chef de Programme	UNDP
Amadou Ba	Coordinator, GEF SGP	UNDP
Michael Wahl	Conseiller, ProGRN	GiZ
Limam Abdawa	National Programme Officer	PAM
Tourad Saleck	Programme Assistant	PAM
Mohamed Lemu Baba Ahmedou	Acteur local	Nema

5. List of partner organisations consulted

Organisation	Person	Function
UNDP	Ms. Ilària Carnevali	Deputy Resident Representative, Programme
	Mr. Alain Olive	Head of Environment and Energy Department
	Ms. Francesca Moledda	Coordinator, Project ARTGOLD
	Mr. Amadou Ba	Coordinator UNDP/GEF Small Grants Facility
FAO	Dr. Ahmeda Ould Mohamed Ahmed	Assistant to the Representative (Programme)
	Mr. Mustafa Aidara	Programme Officer, Technical expert MDG-Fund project
GiZ	Mr. Klaus Mersmann	Coordinator, Programme Gestion des Ressources Naturelles (ProGRN)
	Mr. Michael Wahl	Adviser to the MDEDD on environmental and climate policy
	Dr. Matthias Görgen	Technical Adviser ProGRN, Monitoring and Evaluation
IUCN		Head of Programme
Lutheran World Federation	Mr. Aantjes Jacob Huibert	Resident Representative

Annex 7: List of Abbreviations

AF	Adaptation Fund
AGLC	Local Collective Management Associations
AMOI	Atlantic Multi-decadal Oscillation Index
CCPNCC	Coordination Cell for the National Programme on Climate Change
CSA	Food Security Commissariat
CSLP	Strategic Framework for Poverty Reduction
DREDD	Regional Delegate for Environment and Sustainable Development
ENFVA	National School for Training of Agricultural Extension
EQAS	Evaluation Quality Assurance System
FAO	Food and Agricultural Organisation
FEWSNET	Food Early Warning System - Network
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GIS	Geographic Information System
GiZ	German International Cooperation
HDI	Human Development Index
ICV	Vegetation Cover Index
IFAD	International Fund for Agricultural Development
IGA	Income-Generating Activities
IPSAS	International Public Sector Accounting Standards
IUCN	International Union for the Conservation of Nature
M&E	Monitoring and Evaluation
MAE	Ministry of State Administration
MDEDD	Delegated Ministry of Environment and Sustainable Development
MDG	Millenium Development Goals
MDR	Ministry of Rural Development
MTR	Mid-Term Review
NAPA	National Action Plan for Adaptation
NGO	Non-governmental Organisation
PANA	National Adaptation Programme of Action
PANE	*National Action Plan for the Environment*
PAN-LCD	National Action Plan – Combat against Desertification
PASK	Project in Aftout South and Karakoro
PDRC	Community Rural Development Project
ProGRN	Programme on Natural Resource Management
PSEDD	Sector Program for Environment and Sustainable Development
RISE	Institutional Revue of the Environment Sector
SLM	Sustainable Land Management
SNDD	*National Strategy for Sustainable Development*
SST	Sea Surface Temperatures
TOR	Terms of Reference
UM	Mauritanian Ouguyia
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USAID	US Agency for International Development
VAM	Vulnerability Analysis and Mapping
WFP	World Food Programme