



**ADAPTATION FUND**

AFB/PPRC.6/10  
August 31, 2011

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Adaptation Fund Board  
Project and Programme Review Committee  
Sixth Meeting  
Bonn, September 14, 2011

## **PROPOSAL FOR MAURITANIA**

## I. Background

1. The Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund, adopted by the Adaptation Fund Board, state in paragraph 41 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US\$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the approval by the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would finally require Board's approval.

2. The Templates Approved by the Adaptation Fund Board (Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund, Annex 3) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

*For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.*

3. The first four criteria mentioned above are:

1. Country Eligibility,
2. Project Eligibility,
3. Resource Availability, and
4. Eligibility of NIE/MIE.

4. The fifth criterion, applied when reviewing a fully-developed project document, is:  
5. Implementation Arrangements.

5. Based on the Adaptation Fund Board Decision B.9/2, the first call for project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Adaptation Fund was sent out on April 8, 2010.

6. According to the paragraph 41 of the operational policies and guidelines, a project or programme proposal needs to be received by the secretariat not less than seven weeks before a Board meeting, in order to be considered by the Board in that meeting.

The following programme concept titled "Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in Mauritania" was submitted by the World Food Programme (WFP), which is a Multilateral Implementing Entity of the Adaptation Fund. This is the first submission of the project. It was received by the secretariat in time to be considered in the 15th Adaptation Fund Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the diary number MTN/MIE/Food/2011/1/PC and filled in a review sheet.

7. In accordance with a request to the secretariat made by the Adaptation Fund Board in its 10th meeting, the secretariat shared this review sheet with WFP, and offered it the opportunity of providing responses before the review sheet was sent to the Project and Programme Committee of the Adaptation Fund.

8. The secretariat is submitting to the Project and Programme Review Committee the summary of the programme, prepared by the secretariat, in the following section. The secretariat is also submitting to the Committee the technical review sheet and the responses provided by WFP, in an addendum to this document.

## Project Summary

Mauritania – Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in Mauritania

Implementing Entity: *WFP*

Project/Programme Execution Cost: USD 810,429

Total Project/Programme Cost: USD 8,530,828

Implementing Fee: USD 653,888

Financing Requested: USD 9,995,145

### Project Background and Context:

Mauritania is a large West African country particularly vulnerable to climate change-induced drought, decreasing rainfall and flash flood.

The project goal is to increase the resilience and food security of communities to the impacts of climate change by providing them the information, organization, skills and means to improve the foundations on which their livelihoods are based.

To that end, 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.

The programme presents three components:

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 (USD 2,213,820)

This component aims to improve the analytic and skills base of Government and NGO technical services at different levels in order to enable them to adequately mobilize and support communities to undertake their own analysis of climate change impacts and prepare specific adaptation plans – including harmonized plans for livestock, land and water management. The component prepares the mobilization, local analysis and planning capacity and empowerment on which the identification of interventions made in Components 2 and 3, and the sustainability of those interventions, ultimately hinges.

Component 2: Design and implement concrete adaptation measures identified through community adaptation planning to combat desertification and improve food security (USD 3,395,880)

Component 2 will promote climate resilience by protecting threatened resources from the effects of climate change, natural and anthropogenic (unsustainable coping strategies). The activities under this component are characterized by their fundamentally defensive character. The identification of activities is tentative, and based on well-tested and proven appropriate approaches and technologies. The balance of these intervention, their size and location, will be discussed and agreed upon as part of the community adaptation planning workshops, and it may be the case that additional or alternative interventions will be proposed. Overall, it is expected that 1,500-2,000 ha of dunes will be fixated, 1,000-1,500 ha of vulnerable zones will be protected,

1,000-1,500 ha of community fuel wood forests will be planted and water retention structures will be built, covering approximately 500ha.

Component 3: Diversify and strengthen the livelihoods of the most vulnerable population by measures identified through community adaptation planning (USD 2,921,128)

This component is an important pillar in ensuring that communities and vulnerable households become less vulnerable, more food secure, and better able to pursue livelihoods that are in harmony and supportive of sustainable management of natural resources. Again, the specific balance, size and distribution of these interventions will be subject to deliberation in the adaption planning phase of the project. For all sub-components, 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 of outputs by villages and households. This will ensure future sustainability, including repair and replacement with local know-how and resources.



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## PROJECT/PROGRAMME PROPOSAL

### PART I: PROJECT/PROGRAMME INFORMATION

PROJECT/PROGRAMME CATEGORY:	<b>Regular</b>
COUNTRY/IES:	<b>Mauritania</b>
TITLE OF PROJECT/PROGRAMME:	<b>Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in Mauritania</b>
TYPE OF IMPLEMENTING ENTITY:	<b>Multilateral Implementing Entity (MIE)</b>
IMPLEMENTING ENTITY:	<b>World Food Programme</b>
EXECUTING ENTITY/IES:	<b>Ministry of Environment in Coordination with Ministry of Rural Development, Ministry of Social Affairs and Civil Society Partners</b>
AMOUNT OF FINANCING REQUESTED:	<b>US\$ 9,995,145 (over 4 years)</b>

## ■ 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.<sup>1</sup> 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 136<sup>th</sup> of 169 countries.<sup>2</sup> The poverty rate in rural areas was 59 percent in 2008, with 30 percent of the population living in extreme poverty<sup>3</sup>. The country has always been highly food deficient, producing only about 30 percent of its 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.<sup>4</sup> Half of rural households lack access to safe drinking water.<sup>5</sup>

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<sup>6</sup> is spurred by an exodus from rural areas, where a combination of human and climate-induced factors and feedback mechanisms 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 nomadic populations 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 very 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

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<sup>1</sup> Government of Mauritania, National Action Plan – Combat against Desertification (PAN-LCD)

<sup>2</sup> UNDP, Human Development Report 2010

<sup>3</sup> High-Level Task Force on the Global Food Security Crisis country visit report 24–29 January 2010

<sup>4</sup> Mauritania Food Security Monitoring System report, June 2010,

<sup>5</sup> WFP, Country Programme 2003 - 2010

<sup>6</sup> An overall urbanisation rate of 2.9 percent has been established.

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 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<sup>2</sup>. 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.<sup>7</sup> In direct correlation with the observed reduction of rainfall, the desert has steadily advanced southwards.

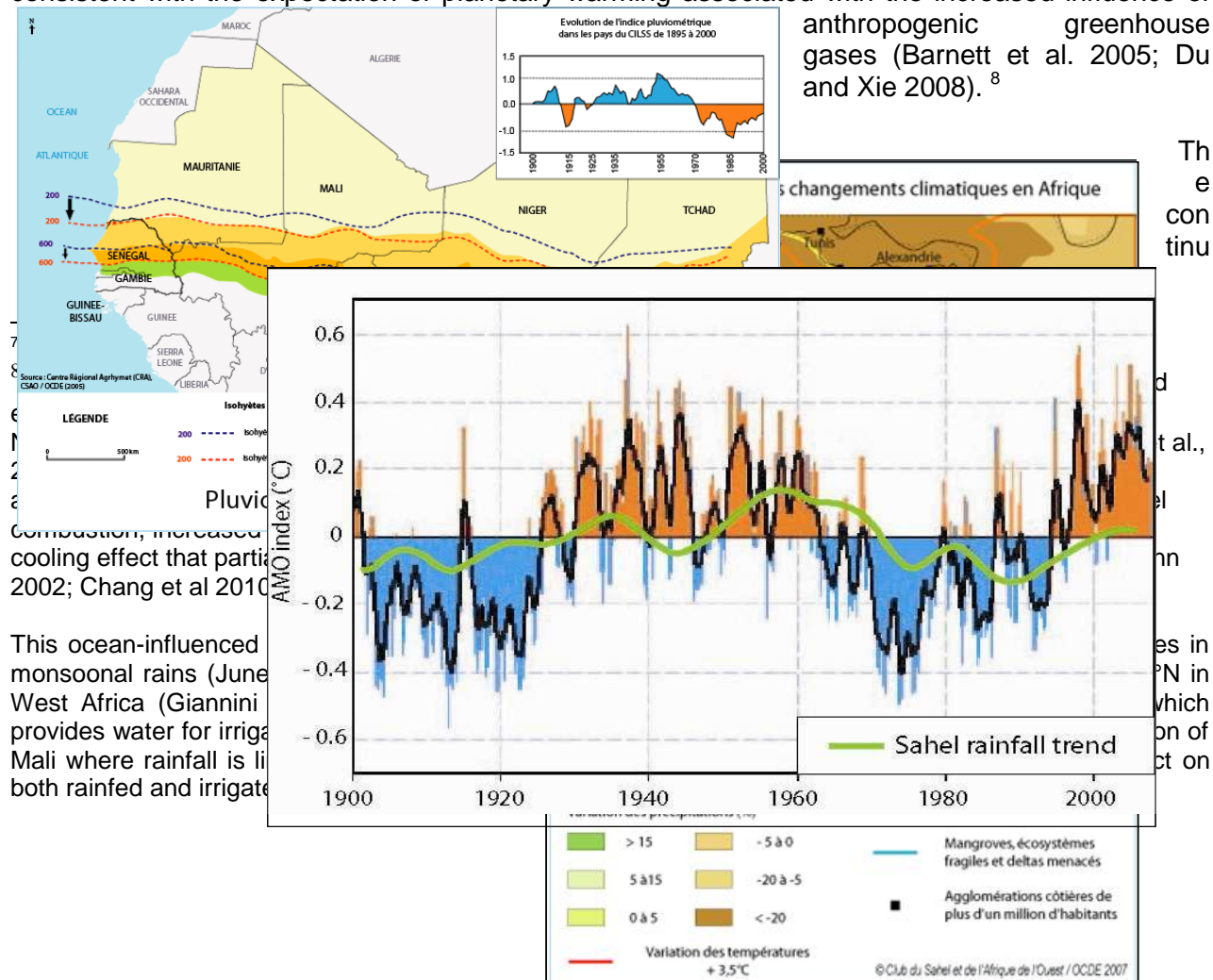
**Figure 1: Movement of isohyets in West-Africa, Centre Regional Agrhymet (CRA, 2005)**

Figure 2 depicts the Atlantic Multi-decadal Oscillation index (AMO<sub>i</sub>), 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 AMO<sub>i</sub> and Sahelian rainfall.

**Figure 2: Atlantic Multi-decadal Oscillation**

A decrease in precipitation and persistent drought in the Sahel from the 1960s to 90s (Figure 2, 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).<sup>8</sup>



Combustion, increased cooling effect that partially offsets the warming effect of CO<sub>2</sub> (Chang et al 2002; Chang et al 2010). This ocean-influenced monsoonal rains (June to September) in West Africa (Giannini et al. 2003) provides water for irrigation in Mali where rainfall is limited. Both rainfed and irrigated

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ed 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 **Figure 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).<sup>9</sup> 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 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 Mauritians 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 still not overpopulated, and developing and protecting water resources. In recent years, agricultural diversification and temporary emigration and employment have been added as coping strategies.

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<sup>9</sup> 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 lowlying areas with poor drainage facilities.

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.<sup>10</sup> It is estimated that since 1970 some 150,000 km<sup>2</sup> of Mauritania has turned to desert<sup>11</sup>, 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 these 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.

The overall effect on rural incomes and rural food security can be devastating. According to FAO,<sup>12</sup> domestic food production has declined over the past forty years. The production index<sup>13</sup> 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.<sup>14</sup> Chronic 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

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<sup>10</sup> Government of Mauritania, PAN-LCD

<sup>11</sup> Government of Mauritania, PAN-LCD

<sup>12</sup> FAO. Food Balance Sheet Mauritanie 2005-2007.

<sup>13</sup> FAO's agricultural production index shows the relative volume of the annual agricultural production compared to a base value of 100 in 1999-2001.

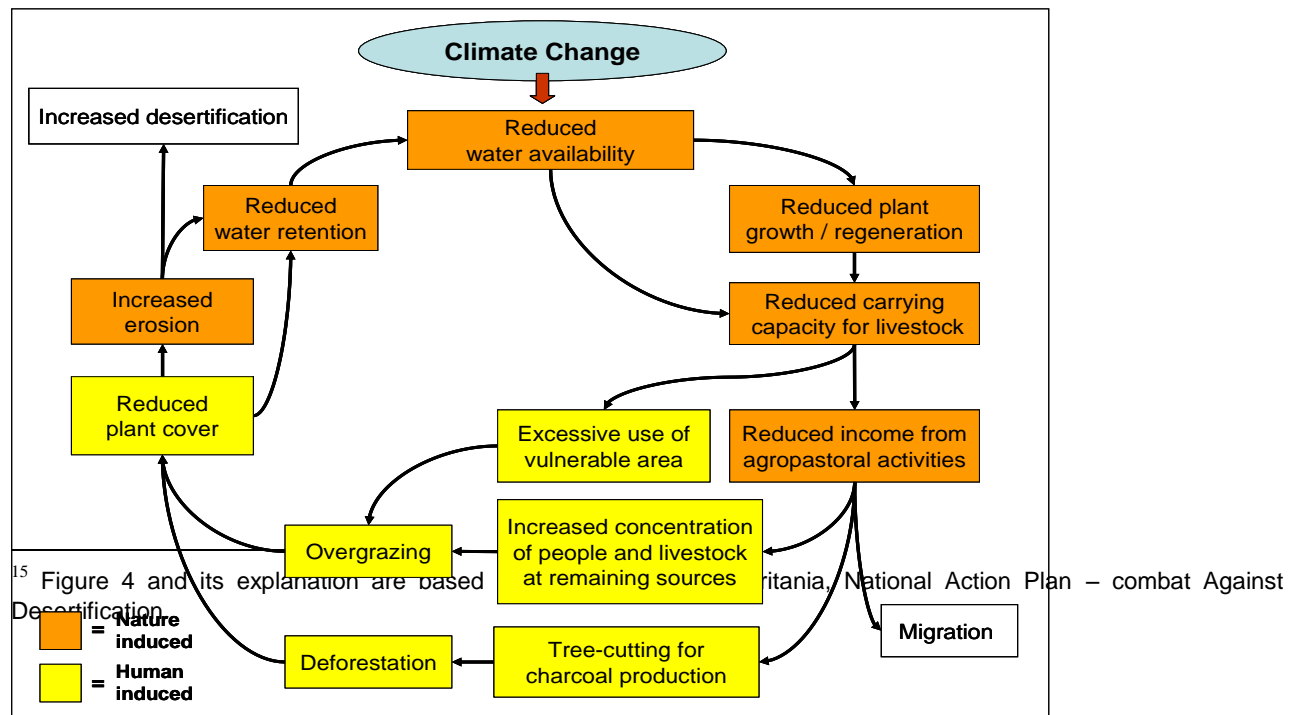
<sup>14</sup> UNICEF, Standardized monitoring and assessment of relief and transitions (SMART), 2010

interventions which fail to explicitly build the resilience of local populations to climate change and to overcome the barriers to adaptation are not likely to be sustainable.

The proposed project is being proposed by the Ministry of Environment and Ministry of Rural Development 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 proposed 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.

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.<sup>15</sup> Figure 4 illustrates the mutually reinforcing connection of climate and human factors which the project intends to address.



#### Figure 4: Climate and human-induced desertification

The project area extends throughout the agro-pastoralist zone in the south-east of the country (Figures 5 and Table 1) and targets 84,000 households which are the most food insecure and most vulnerable to climate change.<sup>16</sup> This group has the following characteristics:<sup>17</sup>

- 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.<sup>18</sup>
- They possess only a few head of livestock, mainly goats, sometimes 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 that assessed the prevalence of productive assets in the area.<sup>19</sup>
- They depend strongly on small irregular activities, daily or seasonal employment provided by more affluent households (often for payment in kind such as milk from herded livestock), or seasonal or permanent migration of household members.
- In direct correlation with their poverty, they have an unacceptable level of food intake.<sup>20</sup>
- They do not produce sufficient food for their own consumption and spend between 75-78 percent of their income on food.<sup>21</sup> They are thus highly vulnerable to food price volatility.

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<sup>16</sup> 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<sup>16</sup> estimated that 21 percent of the population was food-insecure (9 percent severely food insecure and 12 percent moderately food insecure).<sup>16</sup> 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).

<sup>17</sup> FEWSNET. Mauritania Livelihoods Profile. USAID. March 2005.

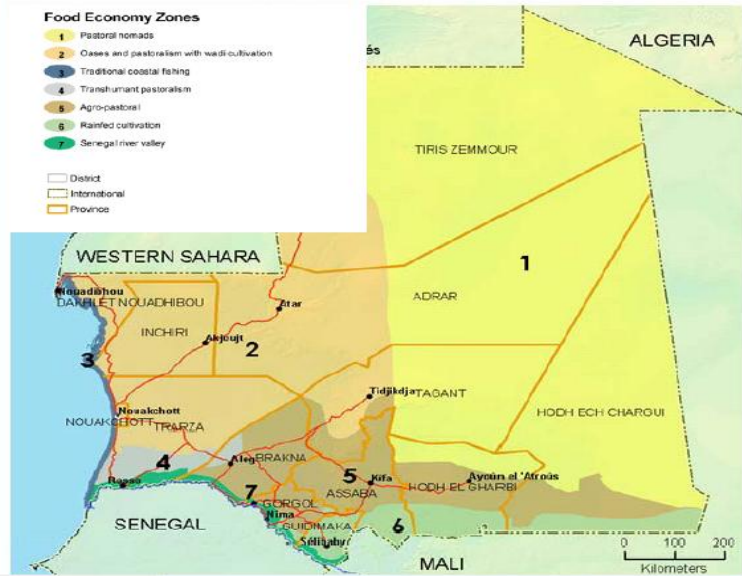
<sup>18</sup> CSAO-CILSS. Food security profile Mauritania, April 2008; WFP, Comprehensive Food Security and Vulnerability assessment (CFSVA), 2006

<sup>19</sup> WFP, Study of secondary data on food security in Mauritania, April 2011

<sup>20</sup> See for example Food Security and Nutrition Assessment 2009, WFP / Food Security Monitoring System

<sup>21</sup> WFP, Study of secondary data on food security in Mauritania, April 2011

**Figure 2. Livelihood zone map of Mauritania**



**Figure 5: Farming systems in Mauritania (PANA 2004)**

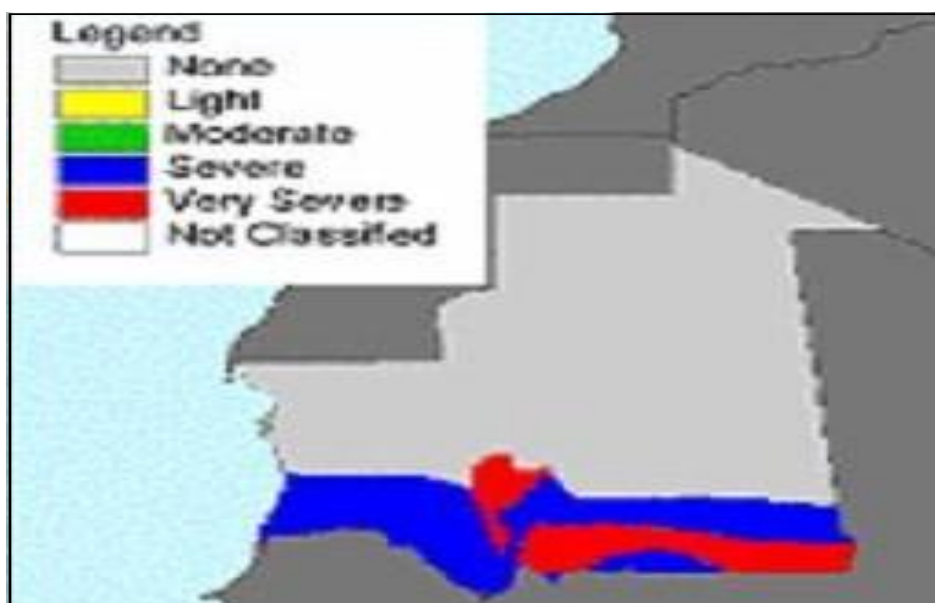
Zone agro-écologique	Régions	Caractéristiques et situation de la sécurité alimentaire
Zone 1- Pastoral Nomads	<ul style="list-style-type: none"> <li>- Majorité de l'Adrar, Hodh El Chargui, Tagant et Tiris-Zemmour</li> <li>- Environ la moitié de Hodh El Gharbi</li> </ul>	<ul style="list-style-type: none"> <li>• Zone la plus faiblement peuplée du pays.</li> <li>• Pluviométrie insuffisante pour permettre les cultures. Pastoralistes exclusivement.</li> <li>• Toutes les céréales et autres biens essentiels consommés doivent être achetés, par la vente du bétail et des produits animaux et les gains du travail journalier (e.g. gardien du bétail des familles plus riches).</li> <li>• Production laitière : aout-septembre (chameaux, bovins, ovins), décembre-janvier (caprins), février-mars (chameaux).</li> <li>• Période de soudure : juin-juillet.</li> </ul>
Zone 2- Agro-pastoralisme avec culture dans les 'wadi' et oasis	<ul style="list-style-type: none"> <li>- Inchiri, Trarza</li> <li>- Petite partie de Tagant et Tiris-Zemmour (Villes de Nouakchott et Nouadhibou)</li> </ul>	<ul style="list-style-type: none"> <li>• Zone semi-aride à aride.</li> <li>• Production de dattes profitables seulement à peu de ménages mais source d'emploi régulier. Vente de la récolte : aout-novembre.</li> <li>• Elevage prédominant mais oasis et cours d'eau temporaires ('wadi') et proximité de 2 grandes villes côtières offrent un marché pour les produits locaux et une source d'emplois saisonniers et de transferts par les migrants.</li> <li>• Récolte et vente des légumes, et récolte des céréales : janvier-février.</li> <li>• Production laitière : aout-septembre (chameaux, bovins), décembre-février (ovins).</li> </ul>
Zone 3- Traditional coasting fishing	Etroite bande côtière à l'ouest	<ul style="list-style-type: none"> <li>• Zone faiblement peuplée.</li> <li>• Profitabilité et stabilité des prises de poisson permettent aux pêcheurs de subsister.</li> <li>• Période de faibles prises : aout-octobre.</li> <li>• Principales contraintes : distance des villes, des marchés et autres services.</li> </ul>
Zone 4- Transhumant pastoralism	Petite partie de Trarza	<ul style="list-style-type: none"> <li>• Ressources en eau insuffisantes pour les cultures mais pâturages relativement bons.</li> <li>• Proximité de l'axe routier entre Nouakchott et la ville frontalière de Rosso permet à plusieurs éleveurs d'avoir un réseau commercial de lait frais.</li> <li>• Production laitière : aout-novembre (bovins) et juillet-septembre (ovins, caprins).</li> <li>• Environ 1/5<sup>ème</sup> des ménages ont perdu leur bétail et subsistent par le travail journalier autour des villes.</li> </ul>
Zone 5- Agro-pastoral	<ul style="list-style-type: none"> <li>- Majorité de Assaba, Brakna et Gorgol</li> <li>- Environ la moitié de Hodh El Gharbi</li> <li>- Petite partie de Hodh El Chargui</li> </ul>	<ul style="list-style-type: none"> <li>• Large zone, considérée la plus pauvre du pays et la plus sujette à l'insécurité alimentaire.</li> <li>• La plupart des ménages combinent cultures et élevage. Ceux dépendant davantage de l'élevage tendent à vivre mieux.</li> <li>• De nombreux individus ont migré dans les villes suite aux désastres naturels (en particulier sécheresse).</li> <li>• Récoltes : octobre-décembre (cultures pluviales) et janvier-mars (cultures de bas-fonds).</li> </ul>

Zone agro-écologique	Régions	Caractéristiques et situation de la sécurité alimentaire
		<ul style="list-style-type: none"> <li>• Production laitière : aout-octobre.</li> <li>• Migration pour travail saisonnier : février-juin.</li> <li>• Période de soudure : aout-septembre.</li> </ul>
Zone 6- Rainfed Cultivation	<ul style="list-style-type: none"> <li>- Majorité de Guidamakha</li> <li>- Petite partie de Hodh El Gharbi et de Gorgol</li> </ul>	<ul style="list-style-type: none"> <li>• Zone la plus peuplée du pays.</li> <li>• Principale zone de production des cultures pluviales sorgho et mil.</li> <li>• Récoltes : octobre-décembre (cultures pluviales) et janvier-février (cultures de bas-fonds).</li> <li>• Elevage favorisé par la proximité de paturages saisonniers au Mali et Sénégal.</li> <li>• Production laitière : juillet-octobre et février-mars.</li> <li>• Proportion importante de ménages avec des migrants saisonniers (vers les villes) et externes (nord Mali), principalement entre mars-juin.</li> <li>• Insécurité alimentaire seulement dans les très mauvaises années.</li> <li>• Période de soudure : aout-septembre.</li> </ul>
Zone 7 – Senegal River Valley	Etroite bande incluant une petite partie de Brakna, Guidimakha, Gorgol et Trarza	<ul style="list-style-type: none"> <li>• Zone la plus densément peuplée.</li> <li>• Riz irrigué constitue la niche principale, mais compétitivité avec riz sénégalais non assurée et intrants coûteux.</li> <li>• Récoltes : juin-juillet (riz contre-saison), octobre-novembre (riz pluvial), et février-mars (céréales en zone de retrait d'inondations du fleuve).</li> <li>• Production laitière (limitée) : aout-janvier (bovins, ovins) et novembre-janvier (caprins).</li> <li>• Compétition pour le travail saisonnier avec migrants provenant d'autres zones. Migration principalement entre mars-juillet.</li> <li>• Dépendance des transferts de migrants urbains ou au Mali.</li> <li>• Pauvreté répandue.</li> </ul>

**Table 1: Food security characteristics in the farming zones**

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

The project will focus on the regions of Adrar, Brakna and Guidimakha where more than 40 percent of households reported frequent difficulties (“often” or “always”) satisfying their nutritional needs The project area is also where soil degradation in the country is determined to be “severe” or “very severe” in the entire project area (see Figure 6).



**Figure 6: Degree of soil degradation (PANA 2004)**

Adaptation in these challenging areas must go beyond business as usual, beginning with rooting the ownership of interventions in the communities - and particularly to women, 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. Instilling 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. Finally, local people must feel that the authorities are supportive and treating them equitably. The current project demonstrates that the Government is confident of meeting these objectives.

## ■ **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 the Ministry of Environment and Sustainable Development (MEDD).

The project will support Government technical services and local NGOs to access, analyze and use climate-related information in combination with food security, livelihoods and vulnerability data, and to adequately support communities. Communities will be assisted in devising their own adaptation plans, and to implement them in a way that ensures the sustainability of the assets created.

*The overall goal of the project is to increase the resilience and food security of communities to the impacts of climate change by providing them the information, organization, skills and means to improve the foundations on which their livelihoods are based.*

### **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**

**Objective:** Strengthen the capacity of technical services to access, analyze and communicate information on climate risk to the environment, livelihoods and food security, and build community awareness and ownership for the sustainability of interventions.

### **Component 2: Design and implement concrete adaptation measures to combat desertification and improve food security identified through community adaptation planning**

**Objective:** Improve the long-term sustainability of the productive ecosystems required for climate resilient food secure livelihoods.

**Component 3: Diversify and strengthen the livelihoods of the most vulnerable population by measures identified through community adaptation planning.**

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

**PROJECT / PROGRAMME COMPONENTS AND FINANCING:**

**TABLE 2: EXPECTED RESULTS (OUTPUT BASED BUDGET IS IN ANNEX 1)**

Project components	Outputs	Outcomes	Funding request (US\$) <sup>22</sup>	Other finance (US\$)
<b>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</b>	<p><b>1.1.</b> Technical services strengthened to access and analyze climate change information in combination with food security, livelihoods and vulnerability information, and to monitor local development, and mobilize and support communities.</p> <p><b>1.2</b> 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.</p> <p><b>1.3.</b> Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food insecurity.</p> <p><b>1.4.</b> 100 village adaptation plans developed and integrated into local development planning.</p> <p><b>1.5.</b> Identification of adaptation technology requirements such as integrated livestock water and cropping systems.</p> <p><b>1.6.</b> Community participation, in particular participation of women, in guiding decision making processes for project execution</p> <p><b>1.7.</b> 20 inter-village associations established and supported.</p> <p><b>1.8.</b> Monitoring system in place to track climate events in targeted areas.</p> <p><b>1.9.</b> Communities share success stories and lessons learned, including through the establishment of 4 community radio</p>	Strengthened awareness, ownership and planning of adaptation and climate risk reduction processes at decentralized government and community levels	<b>2,213,820</b>	245,980

<sup>22</sup> An explanation of budget items is provided below following the description of the three project components.



	stations focused specifically on sharing information on early warning and adaptation management.			
<b>2. Design and implement concrete adaptation measures identified through community adaptation planning to combat desertification and improve food security</b>	<p><b>2.1</b> 1,500-2,000 ha of dunes fixated.</p> <p><b>2.2</b> 1,000-1,500 ha of vulnerable zones protected.</p> <p><b>2.3</b> 1,000-1,500 ha of community fuel wood forests planted.</p> <p><b>2.4</b> Water retention structures built covering approx 500ha.</p>	Increased ecosystem resilience in response to climate change and variability-induced stress	<b>3,395,880</b>	377,320
<b>3. Diversify and strengthen the livelihoods of the most vulnerable population by measures identified through community adaptation planning</b>	<p><b>3.1</b> Approx 300,000 trees for revenue generation and food planted in protected areas.</p> <p><b>3.2</b> 4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilization.</p> <p><b>3.3.</b> 5,000 technical staff and community leaders trained and equipped for plant/seed multiplication.</p> <p><b>3.4</b> Approx 50 community cereal banks established.</p> <p><b>3.5</b> 6,000 technical staff and community leaders trained in poultry development.</p> <p><b>3.6</b> 1,000 technical staff and community leaders trained in apiculture.</p> <p><b>3.7</b> 30,000 fuel efficient stoves provided.</p> <p><b>3.8</b> 2,000 community members (mostly youth) trained to build and maintain fuel efficient stoves.</p>	Diversified and strengthened livelihoods and sources of income for vulnerable people in the targeted area	<b>2,921,128</b>	326,792
Totals:		9,480,920	<b>8,530,828</b>	950,092
Project execution costs	9.5 %		<b>810,429</b>	90,259
Management fee	7.0 %		<b>653,888</b>	
Government contribution				1,040,351
Amount of financing requested:				<b>9,995,145</b>

### Project Execution Costs

Project Manager	48,000
Project Office support staff	40,000
Vehicle and office equipment	80,000
Operational cost of Project Office	70,000
Travel	140,000
Regional teams	126,429
20 Motor bikes	40,000
Project Coordinator (WFP)	120,000

Project Monitoring and Evaluation	146,000
<b>Total Project Execution Costs (9.5 percent)</b>	<b>810,429</b>

## ■ PROJECTED CALENDAR:

Milestones	Expected Dates
Start of project	April 2012
Midterm review	May 2014
Project Closing	March 2016
Terminal Evaluation	September 2016

## ■ 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 and NGO technical services at different levels in order to enable them to adequately mobilize and support communities to undertake their own analysis of climate change impacts and prepare specific adaptation plans – including harmonized plans for livestock, land and water management.

**Response to CR 9:** Most of the relevant Government plans and strategies require for their implementation as well as their sustainability technical guidance and structures that have the capacity to retrieve, analyze and use relevant and up-to-date information down to the local level. Furthermore, these services need to be able to adequately communicate with communities and provide the necessary mobilization as well as technical guidance. This is for example true for the participative management of land , water and forest resources foreseen by the National Communication of 2008; the empowerment of the poor through their improved used of natural assets foreseen by the CSLP III; all five main themes of the National Strategy for Sustainable Development (SNDD); and the strengthening of the role and participation of national civil society and decentralized Government structures prioritized by the National Action Plan – Combat Against Desertification (PAN – LCD) (see section II.D of the project proposal).

A crucial element of the proposed project is the strengthening of technical services that are responsible to carry out climate change and vulnerability analysis as well as reaching out to communities in order to help them use information and analysis to take well-informed decisions and prioritize. Work with these services through technical assistance and through the regional teams aims directly at strengthening national capacities of national and local stakeholders to obtain up-to-date and accurate analysis and build relevant and adequate adaptation measures.

The component prepares the mobilization, local analysis and planning capacity and empowerment on which the identification of interventions made in Components 2 and 3, and the sustainability of those interventions, ultimately hinges.

*Women and girls, most of whom live permanently in the project area, will represent more than half of the target group in carrying out this component.*

**1.1. Technical services strengthened to access and analyze climate change information in combination with food security, livelihoods and vulnerability information, and to 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**

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

**1.4. 100 village adaptation plans developed and integrated into local development planning**

**1.5. Identification of adaptation technology requirements such as integrated livestock water and cropping systems**

**1.6. Community participation, in particular participation of women, in guiding decision making processes for project execution**

The technical services include the Commissariat Sécurité Alimentaire, the technical services of the Ministry of Environment, the Ministry of Rural Development, the Ministry of Social Affairs, and NGOs at the local level through whom Government and development partners often work. These technical services will be supported to access and analyze up-to-date information from national and international sources on climate change as well as adaptation trends and experience; to interpret this information in terms of local impacts and options, and to support communities in the preparation of village adaptation plans which will inform local development planning.

**Response to CR 3:** Crop and livestock farming are estimated to contribute only 20 percent to GDP, of which 5 percent is attributed to agriculture and 15 percent to livestock). Besides land degradation and difficult access to markets, one of the main underlying causes for low productivity in the rural sector is the limited supply of productive services, particularly agricultural services (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). In 2011, FAO carried out a study on the state of agricultural extension in Mauritania ("Proposition d'un Dispositif de Conseil Agricole en Mauritanie"). The study found that demand and supply of the present agricultural extension services do not correspond to the actual needs formulated by producers and are not adapted to recent developments in the sector. The various improvements proposed all hinge on a strengthening of research, training and extension capacities of the services involved, as well as the improved cooperation and harmonization between different technical services.

The work with technical services under component 1 will contribute to improving this situation by significantly strengthening the analytical and outreach capacity of agricultural services, as well as their cooperation with other technical services, e.g. environment, water, public works, etc.

A training module will be developed to help officials and communities assess local threats. Local staff will develop and implement an awareness campaign to inform local officials and communities of the threats of climate change and potential adaptation solutions. The project management team will work with local communities, through participatory workshops, to ensure that community plans support priorities at the village level. These activities will 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.

**Response to CR 1:** The project proposes to work with a total of 100 villages. This scale takes into account the level of expected available resources and the estimated costs of foreseen project activities per village. Furthermore, this scale is of sufficient weight and provides a critical mass that can trigger “spontaneous replication” and establish good practices throughout the project area.

The selection of villages where the project will intervene will be carried out by regional committees, which will comprise the Government’s technical services at all levels, the Food Security Commissioner, and various community leaders and NGOs. These committees will ensure that project interventions are harmonized with relevant regional, departmental and community development plans. Selection will be based on food security and other socio-economic factors, natural resource degradation and potential for improvement, and presence of community structures to share knowledge and build and sustain the assets created.

**Response to CR 1:** Village selection criteria will involve vulnerability, village interest, and, not least, significance for a region as a whole (with a view to establish good practice and spur replication). **To increase the regional significance as well as efficiency and to secure inter-village harmonization, villages will be selected in clusters.** Before villages start working on their individual adaptation plans, technical services will determine regional priorities and establish the planning directives as required for regional harmonization, based on national strategies and priorities as well as on regional vulnerability analysis. For this, technical assistance will be provided (under component 1.1, 1.2 and 1.7).

Participatory workshops will be carried out by the Ministry of Social Affairs with the support of the Ministry of Rural Development. The institutional framework for community based planning will be strengthened in line with the Government’s Poverty Reduction Strategic Framework. Workshops will be conducted, with a focusing on climate change risks, mitigation and adaptation solutions with consideration of both community livelihoods and ecosystem integrity and the services these ecosystems do or can provide. These workshops will result in increased participation of communities, in particular women, and the self selection of village leaders to take responsibility for the development of village adaptation plans. The articulation of these 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.

**Response to CR 5:** The training foreseen under component 1.3 aims at increasing the understanding at village level of climate change issues and potential adaptation measures. This will create the basis for local discussions and decisions on concrete adaptation plans. With regard to content, this training will be more analytical and less hands-on. The activities under this sub-component will to a significant degree also include training of trainers at technical service level to strengthen the capacity of these services in their outreach and communication with communities. By contrast, training under component 3 will be pursued using a learning-by-doing approach. It will be directly related to specific adaptation activities and will focus on the understanding and mastering by villages and households of approaches and techniques as well as maintenance (repairing, improving and replacement) required for physical assets.

The methodology for mobilizing communities will be based on the experience and best practice identified through a number of other projects (see section F below), which will be reviewed during the project inception workshop and continuing community level workshops. These will constitute an important element of the project knowledge management strategy. The responsible technical services will mobilize technical support to communities in a way which builds a long-term relationship with communities and ensures a continuous feedback loop.

At village level, the project will support the constitution of village committees which will organize local dialogue, oversee the development of local adaptation plans, and prioritize concrete interventions for each village

A detailed description of the actors and processes in participatory planning and prioritization will process will be developed during project appraisal. A preliminary outline of the various tasks at different levels is shown below.

**National/Institutional level:**

- Conceptualization of climate change, food sovereignty, food security linkages
- Situation and threat analysis
- Identifying of priorities at the department and local levels
- Methodologies developed

**Regional level:**

- Identifying of priorities at the department level
- Mobilization of technical expertise to guide community consultations
- Analysis and suggested prioritization of adaptation measures

**Community/Village level:**

- Community awareness raising and consultations
- Village adaptation plan prepared and agreed
- Agreement on implementation schedules
- Sharing of information through village committees and Rural Development Associations

**Response to CR 14:** The project will establish a powerful system to capture and feedback lessons from the start. Baselines will be established in all project areas; regular progress and monitoring reports will be prepared. These will be analyzed by the project coordination team and widely discussed at annual meetings assembling not only technical services and partners participating in the project in all regions, but also stakeholders from other, related projects (e.g. the IFAD/GEF .projects mentioned under point 7 above; the GiZ-funded ProGRN project; etc.). In this way, developments will be shared widely; successes and challenges will be discussed; and experiences with addressing these and recommendations for future approaches will be formulated in a highly participatory manner. This regular involvement of a wide array of stakeholders beyond the project will ensure that information and knowledge are well managed from the very beginning of the project, and that good communication is ensured at all stages. Regional teams (including the participating technical services) will be directly involved in the preparation, organization and follow-up to these annual meetings, which will further provide opportunities for learning by doing and strengthen the national capacity to communicate in an efficient and productive manner with multiple stakeholders.

**1.7.20 inter-village associations established and supported**

Workshops will also promote the strengthening of existing rural development associations and establishment of inter-village associations which will meet regularly, in particular to exchange information with regard to sharing land, livestock and water resources and resolving potential conflicts. These associations will also promote replication of successful interventions from one village to the next. Ecosystems and livelihoods in the project area are inseparable, and interventions, especially those relating to livestock management, must be managed in ways that cut across villages. In order to render local adaptation plans sustainable and resilient, Inter-village association will need to agree on the equitable use of resources.

**1.8. Monitoring system in place to track climate events in targeted areas**

**1.9. 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**

**In response to CR 2:** Government has throughout its long-standing cooperation with WFP requested and received technical assistance to adopt vulnerability analysis methodologies, adapted to the local (national) context. The result of this work is an existing national approach which under the proposed project will be further strengthened through the use of GIS technologies. This work will be a crucial element of strengthening government capacity at decentralized level for analysis and guidance of the sub-regional and village level with respect to climate change and environmental developments. Improved analysis is required to support decision making at local and national level. Tools will be developed to assist officials and communities to better understand climate threats. Community early warning systems will be designed, implemented and maintained. This tool 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. As part of the project monitoring plan, GIS tools will be used to track changes in the area and feed this information to different levels in order to inform the selection of appropriate investments.

Community learning and the sustainability of interventions that work need to be reinforced through good 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 distributors of information and insight. Community radios are not feasible in all settings however, and the project will during its inception phase carry out a study to analyze the legal and institutional framework, the technical feasibility, and the desire of communities set up radio stations.

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 the literacy of listeners. Programs can be heard by people while they are going 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, being 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 in the long run.

**Response to CR 8:** A number of activities under component 1 can be summarized under the modality heading of community mobilization. However, the thrust and purpose of the different sub-components are quite distinct. The total budget foreseen for this modality is just under \$1 million. The project plans to work with at least 100 villages, hence the approximate budget per village for community mobilization is about \$10,000. This estimated cost is based on the experience that true community mobilization needs time, and repeated visits. In particular, community mobilization through the regional teams (including regional technical services) will require thorough training of trainers and capacity strengthening for their outreach to communities (included in this sub-component and budget). Travel costs in Mauritania are also high.

Climate information management and monitoring is included under several components, plus the M&E plan. A specific budget line of \$150,000 is included under component 1.1 for this subject, but also other activities under this sub-component (strengthening of technical services) are relevant (e.g. infrastructure and equipment). Furthermore, the subject is included implicitly in component



1.9 ( but is difficult to quantify in monetary terms there). Finally, information management and monitoring is also addressed by the project's monitoring strategy described in section III.C

**Component 2: Design and implement concrete adaptation measures identified through community adaptation planning to combat desertification and improve food security**<sup>23</sup>

Component 2 will promote climate resilience by protecting threatened resources from the effects of climate change, natural and anthropogenic (unsustainable coping strategies). The activities under this component are characterized by their fundamentally defensive character. The identification of activities is tentative, and based on well-tested and proven appropriate approaches and technologies. The balance of these intervention, their size and location, will be discussed and agreed upon as part of the community adaption planning workshops, and it may be the case that additional or alternative interventions will be proposed.

**2.2.1,500-2,000 ha of dunes fixated.**

**2.3 1,000-1,500 ha of vulnerable zones protected.**

**2.4 1,000-1,500 ha of community fuel wood forests planted.**

**2.5 Water retention structures built covering approx 500ha.**

Where communities decide that sand dunes threaten their productive assets, these will be fixated; where frequent wildfires threaten natural resources, communities can establish corresponding fire breaks through manual labor. Where soil erosion through water flows is a problem, communities can invest in *diguettes* and water retention dams. These will not only slow down the flow of water, but also increase the availability of surface water, and as a result increase *decrue* vegetable production, as well as the infiltration of water into the soil where it can replenish underground reservoirs.

Desertification has led to a concentration of cattle in smaller areas, further threatening vegetative cover. Protected areas will be created where the grass and other vegetation cover can regenerate. Communities will learn that the planting of diverse species within such protected areas yields high benefits in terms of biodiversity and the possibilities for communities to maintain and strengthen their livelihoods. A challenge which will be addressed through the community planning exercise in Component 1 is linking the NRM elements of the project to pastoral migration and marketing, and in particular to exploring how pastoralists can get their livestock to market and up and down trekking routes.

Where identified as relevant and prioritized by communities, dedicated areas will be reforested with appropriate species to ensure a supply of fire wood. The sustainability of this supply will be supported by the national strategy to promote the use natural gas as source of energy in urban areas, which are presently the greatest user of wood from rural areas (in the form of charcoal). In addition, 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.

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<sup>23</sup> Components 2 and 3 will enable communities and poor households to themselves implement the activities they have prioritized in their adaptation plans. The bulk of their work will be carried out through food or cash for work and for training. Importantly, activities will be carried out 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 self-selected to participate in building physical works, compensation for labor is indispensable. 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

A number of photographs illustrating the results of dune fixation and the protection of vulnerable zones are included in Annex 3.

### **Component 3: Diversify and strengthen the livelihoods of the most vulnerable population by measures identified through community adaptation planning**

This component is an important pillar in ensuring that communities and vulnerable households become less vulnerable, more food secure, and better able to pursue livelihoods that are in harmony and supportive of sustainable management of natural resources. Again, the specific balance, size and distribution of these interventions will be subject to deliberation in the adaptation planning phase of the project. **Response to CR 4:** For all sub-components, 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 of outputs by villages and households. This will ensure future sustainability, including repair and replacement with local know-how and resources.

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

The *acacia sénégalaïse* is a plant on which the production of *gomme arabique* is based, and an important source of income. This resource has been depleted as a result of charcoal production. Similarly, *ziziphus 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.

**Response to CR 10:** All trees to be used will be well-adapted to climate conditions of the project zone.

From *acacia séneal* it is possible to produce gum Arabic, which 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). Gomme arabique is sold at 500 UM (\$1.76) per kg. This means that a village can generate about \$18,700 per year from a lot of 50 ha. The sub-component foresees planting 300,000 trees at a cost of \$700,000. 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 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.**

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

The training in more efficient agricultural techniques and water management (e.g. Irrigasc<sup>24</sup>), coupled with provision of adequate 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<sup>2</sup> tables which produce high yields, and provide income for women's groups with minimum water use.

**3.4 Approx 50 community cereal banks established.**

Village cereal banks already exist in some villages and have had success. They can provide a crucial food buffer for vulnerable communities and in particular can serve to stabilize food prices during the lean season. In selected villages, the need for, potential benefit, and functioning of village cereal banks will be analyzed. Where there is a good potential for cereal banks where they do not exist, or if existing banks do not function properly, the reasons for this will be analyzed with the aim of determining whether the project should establish a bank or improve its functioning.

**3.5 6,000 technical staff and community leaders trained in poultry development.**

Poultry has been identified as a high-potential activity for climate change adaptation in the target area. Chicken are inexpensive and thus 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. On the contrary, they can increase the fertility of the soil through the "chicken plough." Finally, with chickens, poor rural households can increase their consumption of meat and diversify their diet.

**3.6 1,000 technical staff and community leaders trained in apiculture (beekeeping).**

Apiculture can boost yields from plants depending on pollination, and can serve as a substitute for fertilizer, which is expensive and therefore not used. Where apiculture is feasible, a conscientious, 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 which can help diversify livelihoods.

**Response to CR 10:** Beekeeping is not widely practiced in Mauritania. Some small-scale traditional collection of honey is practiced by villages, mainly in the area bordering Mali. The harvested quantities are traded in the rest of the country by small traders. There is a 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 provided through imports is estimated at 500 tons. Only 5 per cent of this is covered by national production. A kilogram of honey presently costs 3,000 UM (\$12 ). Thus, there seems 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

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<sup>24</sup> See for example at <http://www.irigasc.net/>

and low-cost technologies as well as different products and their commercialization before wider production is promoted.

**3.7 30,000 fuel efficient stoves provided.**

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

**Response to CR 10:** The project proposes to promote the mass construction of fuel efficient stoves in all participating villages. To secure 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 that can be found in the project area free of charge, can save up to 50 percent on fuel wood. Work will be carried out by youth groups trained under the project. The household savings in monetary terms and labor from these stoves will ensure that they will be able to invest in paying young people to build and maintain 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 young people will have a steady source of employment.

The provision of fuel efficient stoves will thus directly contribute to the more efficient use of natural resources and save household resources and labor (see Component 2). Building and repair of mud stoves and other local material can also constitute an important means of income, especially for young people. The provision of such stoves, initially promoted through food for work, will be combined with on-the-job training for youth and others.

Component 3 is a critical pillar for the sustainability of the project. Without alternative, sustainable coping strategies, the protection of areas against overgrazing and deforestation cannot be sustained. For example, any gains from increased water retention would soon be off-set by an influx of additional livestock owned by more affluent people (in urban centers and in irrigated zones). And while some poor agro-pastoralists would gain employment in caring for these animals, their incomes would be meager and temporary as the process of erosion would not be abated. Indeed, it is this pattern that is now taking place in the project area and which the proposed project seeks to ameliorate.

**Response to CR 6:** The project aims at supporting communities in the creation of sustainable assets. This means that all physical assets created under the project will be designed in a way that they are sufficiently simple and cheap to be repairable and replaceable by communities with their own knowledge, skills and resources. The financing of 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 enabled to raise required resources for the protection and maintenance of these assets from 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 that can contribute to the maintenance of created assets.

By contrast, the scaling-up of project investments is not foreseen to 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 and with additional funding.

At the same time, to some extent, spontaneous scaling-up can be expected where other (non-project) villages directly witness the benefits derived from e.g. protective assets and manage to generate their own resources (in particular labor) to replicate such assets (potentially with the support and technical guidance from decentralized government services); 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.

**Response to CR 11:** Cash and food for work or for training programs are foreseen under both component 2 and 3. They will enable communities to make the investments required in creating assets (physical, skills, etc.) that will reduce their vulnerability and help them adapt to climate change. These programs will last between one and three months during the lean season, when the lack of other employment opportunities and of available food would otherwise force parts of the productive population to migrate. Work and training programs will be phased so as not to interfere with any other agricultural, livestock or forestry related activities required by the population during that time.

Vulnerability analysis will help determine the precise zones where these programs will be rolled out (identification of village clusters, see clarification to CR 1); the exact period of time when programs will be carried out; and the criteria for the selection of participating households (asset poor, no alternative income, etc.). Specific selection criteria will be determined through a participatory process with the communities themselves, who will also be directly involved in the selection process and organization of work.

**Response to CR 12:** The budget of the proposed project was elaborated with the help of standard costs for technical assistance to technical services (\$5,000 per work month, including travel costs); community mobilization (which includes training of trainers to technical services of \$5,000 per month, budgeted at ½ a month per village); establishment of village associations (budgeted at one month for each of 50 villages); guidance of physical works and provision of training through the regional teams (\$3,000 per month, including travel costs); provision of non-food items (equipment, infrastructure, etc.) of technical services (\$15,000 for each of 10 regions) and for villages (\$5,000 for each of 100 villages), etc. These standard costs are oriented at the average cost of the activities foreseen, consistent with WFP's long-standing work in the country and its cooperation with civil society implementation partners.

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.

Component 3.1 (tree planting): in each of the 100 project villages, 35 participants will work for 3 months, receiving food costing at \$28.8 per month, totaling \$302,000. Cost of animation (½ month per village) is estimated at \$3,000 per month, including travel in 100 villages, totaling \$150,000. The cost of non-food items (including purchase of trees) is estimated at \$2,500 per village, totaling \$250,000.

Component 3.2 (training of technical staff and community leaders in water management and agricultural techniques): 40 participants per village in 100 villages to be trained for one month each, receiving food-for-training costing \$14.4 per month (totaling \$56,700); cost of training one

month per village at \$3,000, including travel costs, totaling \$300,000; an estimated \$1,250 per village for hardware, totaling \$125,000.

Component 3.3 (training in agro-pastoral IGA, including TOT): 50 community members per village trained for one month each, receiving food valued at \$72,000. Cost for training and hardware is the same estimate as for 3.2 (\$300,000 plus \$125,000).

Component 3.4 (Community cereal banks): 50 CCB-bank in 50 participating villages receive a food subsidy worth about \$78 per household, totaling \$195,000; community sensitization (half a month per village) at \$3,000, including travel costs, totaling \$75,000; and infrastructure / equipment costs estimated at \$5,000 per bank, totaling \$250,000.

As the budget is based on a number of estimates and assumptions, some items may appear to be high. For example, for the establishment of inter-village associations one work month may be required not for each of the participating villages (50), but rather for each of the expected associations (20). The precise numbers in this regard will be provided during project appraisal. At the same time, it is expected that savings under one budget item would partly be off-set by a corresponding under-budgeting of other items (e.g. food prices might increase significantly). Furthermore, it is foreseen that any budgetary surplus would be used to scale up the project by including additional villages, further strengthening of technical services and increasing outputs.

The complete budget to be included in the full project proposal will be based on real time prices at the time of project appraisal.

*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.

**Table 3: Expected economic, social and environmental benefits**

	<b>Economic benefits</b>	<b>Social benefits</b>	<b>Environmental benefits</b>
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<b>Vulnerable households</b>	<ul style="list-style-type: none"> <li>➤ Secured agricultural revenues through protection of land and retention of water</li> <li>➤ Stabilized food prices through community cereal banks</li> <li>➤ Employment opportunities, short-term through food or cash for work, medium- and long term through more diverse and less vulnerable sources livelihood bases</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduced impact of climate hazards on food security and livelihoods.</li> <li>➤ Improved nutrition, resulting in improved health of family members</li> <li>➤ Increased solidarity and mutual help through various groups</li> <li>➤ Reduced “push”-factor forcing young household members to migrant and depriving the household of needed labour force</li> </ul>	<ul style="list-style-type: none"> <li>➤ Increased biodiversity will provide access to additional flora and fauna both for food, income and medicinal purposes</li> </ul>
<b>Communities</b>	<ul style="list-style-type: none"> <li>➤ Reduced immediate threat from sand dunes and erosion</li> <li>➤ Increased agricultural productivity and output</li> <li>➤ Increased market access</li> <li>➤ Increased food security through cereal banks</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduced risk of conflict through natural resource management and inter-village associations</li> <li>➤ Increased social cohesion and empowerment through management committees and community radio</li> </ul>	<ul style="list-style-type: none"> <li>➤ More efficient and sustainable use of land and water resources, reducing their depletion and the risk of conflict</li> <li>➤ Increased protection against desertification and degradation</li> </ul>
<b>Region</b>	<ul style="list-style-type: none"> <li>➤ Greater food production and security</li> <li>➤ Stabilisation of local production and maintenance of local contingency stocks</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduced migration from the area, in particular of youth who will have renewed prospects of healthy livelihoods.</li> <li>➤ Reduced risk of conflict</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduced desertification</li> <li>➤ Greater biodiversity, resulting in greater resilience and decreased vulnerability</li> <li>➤ Sustainable management of natural resources</li> </ul>
<b>Government and partners</b>	<ul style="list-style-type: none"> <li>➤ Reduced dependence on food inputs from abroad</li> <li>➤ Reduced dependence on imports and international prices</li> </ul>	<ul style="list-style-type: none"> <li>➤ Greater capacity of technical services</li> <li>➤ A knowledge base is created from which positive experience can be identified and replicated</li> <li>➤ Reduced pressure on urban areas</li> </ul>	<ul style="list-style-type: none"> <li>➤ Greater in-depth understanding of the interplay between climatic, environmental and human factors influencing the sustainable use of natural resources</li> </ul>

The number of beneficiaries by output is provided in Table 4 below.

**TABLE 4: PROJECT BENEFICIARIES BY OUTPUT**

Component	Output	participants / households		Direct beneficiaries	
		per output	per component	per output	per component
1	Technical services strengthened to access and analyze climate change information, to monitor local development and to mobilize and support communities	230	10.610	230	5.410
	Strengthening of Government's threat, risk and vulnerability analysis	100		0	
	Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food in security	3.000		0	
	100 local adaptation plans prepared by communities	2.000		0	
	Identification of adaptation technology requirements	0		0	
	Community participation, in particular participation of women, in guiding decision making processes for project execution	2.000		2.000	
	20 inter-village associations established and supported	1.000		1.000	
	Monitoring system in place to track climate events in targeted areas	2.100		2.000	
	Government and communities share info and lessons, including through the establishment of 4 community radios	180		180	
	2	1,500 - 2,000 ha of sand dunes fixated		4.500	
1,000 - 1,500 ha of vulnerable zones protected		6.000	30.000		
1,000 - 1,500 ha of community forests established		4.500	22.500		
Water retention structures built covering approximately 500 ha		4.500	22.500		
3	300,000 trees for revenue generation and food planted in protected areas	5.250	54.350	26.250	271.750
	4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilization	4.000		20.000	
	5,000 technical staff and community leaders trained and equipped agro-pastoral IGA, including plant multiplication	5.000		25.000	
	50 community cereal banks	2.500		12.500	
	6,000 technical staff and community leaders trained in poultry development	4.000		20.000	
	1,000 technical staff and community leaders trained in apiculture	1.600		8.000	
	30,000 fuel efficient stoves built	30.000		150.000	
	2,000 community members (mainly youth) trained to build and maintain fuel efficient stoves	2.000		10.000	
<b>Total:</b>		<b>84.460</b>		<b>374.660</b>	

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) are five times the quantity of participants (households). 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 populations covered by strengthened technical services which will work with additional villages (more detail on targeting will be provided in the full project document).

Discussions with villagers revealed that a huge benefit of the proposed interventions will be social cohesion, which is hard to quantify yet indispensable 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.

**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 of 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 in the wake of the global economic crisis) and are often dependent on illegality, including life-threatening human trafficking.

Furthermore, Mauritania's coastal cities of Nouakchott and Nouadhibou have offered no certain refuge from the perils of climate change. Originally planned as a modest administrative centre, Nouakchott has mushroomed into a capital of uncertain population. In the absence of 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 has been assessed to be at serious 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 temperature is known to 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.

The project also represents a cost-effective option because it tackles the natural and anthropogenic barriers to addressing unsustainable resource use. Technical services, which have always been in limited supply, will be strengthened; investments, which have often been directed from the top down, will be prioritized and managed by communities themselves; the resolution of conflicts over land and water resources will be rooted in improved community organization and cohesion between villages; working capital, which as always been in short supply, will be provided through the project, including through food and cash for work; and a highly degraded natural resource base will be rejuvenated and sustained to support economic and food security.

The sustainability of project activities will be promoted through their initial identification and ownership by communities and the support to broader and more diverse (and thus less vulnerable) livelihood bases for the most vulnerable population, enabling them to refrain from unsustainable coping strategies which would lead to further resource degradation and food insecurity. **Response to CR 10: The good rate of return on investments, which will secure future financial sustainability of assets created, was described in section II.A above.**

All processes leading to decisions at village level will be highly participatory: no assets will be created that are not prioritized and would not be sustained by the beneficiaries. Such an approach will build on WFP's experience as well as that of its partners. Applying lessons learned and combining best practice identified from relevant projects will avoid repeating past mistakes.



Where functioning markets exist, the project will use cash-based support modalities to further increase cost efficiency. 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.

**Response to CR 7:** Concerning the implementation area, neither a village nor a landscape approach would be optimal in their pure form. The merit of a village approach lies in the full participation and ownership of the village itself, as well as in the scale of projects that can be fully mastered by villagers. By contrast, a landscape approach allows a more holistic view, greater harmonization and efficiency. The proposed project will pursue a combination of both approaches by clustering villages in larger zones within the participating regions. In this way, a certain economy of scale as well as inter-village harmonization will be achieved.

The activities under the three components will be co-located. This 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.

Individual interventions will be carefully costed with community involvement- including the costs of depreciation and eventual replacement - before decisions are taken on implementation. In this way low-cost, appropriate technologies and methodologies will be prioritized. These 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.

*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 proposed 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**<sup>25</sup> 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.

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<sup>25</sup> Cadre Stratégique de Lutte contre la Pauvreté 2011-2015



The CSLP III will be implemented through four main axis of action:

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 will be addressed in Component 2 and 3 of the proposed 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 proposed project.

Mauritania's **National Action Plan for Adaptation (PANA, 2004)** consists mostly of a series of prioritized concrete projects. These were established by calculation, 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 present project are related to those prioritized by the PANA, including water retention, increased aviculture, 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 will be undertaken in 2011/2012 and will be informed through the appraisal and consultation process of the proposed project.

The **National Strategy for Sustainable Development (SNDD)** of 2006 places people at the centre 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 the decentralized, rational and sustainable management of natural resources.

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 - which the proposed project will build on.

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

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

Project appraisal will consider quality programming standards based on the Government's norms and standards for different sectors. The necessary safeguards will be followed and incorporated into the project design. The proposed interventions will adhere to all national technical standards that are in force, particularly those relating to land use, livestock management and water management. 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 best practice derived from earlier projects and agreed upon with Government.

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

There is no duplication with other sources of funding. Three projects that are related to parts of the proposed project are now in their last phases: the German-funded "Management of Natural Resources Programme", the World Bank-funded "Community Rural Development Project", and the Spanish-funded MDG-Fund project carried out jointly by WFP and FAO. Other projects that are on-going or entering a second phase will provide valuable support and lessons.

*The present proposal builds on the lessons learned from these projects and will apply best practices extracted from them. However, it goes beyond these projects in focusing on the primacy of community based initiatives for natural resource management and livelihood development in the context of climate change.*

**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) Advice 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, 5) Strengthening the 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 two components of the project will feed directly into the appraisal and implementation of the proposed Adaptation Fund project.*

**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 the 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 have produced good results, and the experience is one reason for the approach proposed in the current Adaptation Fund proposal. *The proposed project will (a) apply the models of community outreach tested by 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.*

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 and community engagement. *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 preparation and 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. *Coordination of the proposed project with other SLM initiatives will be ensured, beginning with integrating key related actors in the proposed project's appraisal exercise.*

**Response to CR 13: The IFAD/GEF adaptation project** "Support to the Adaptation of Agricultural Production Systems that are Vulnerable to Climate Change" pursues the objectives of adding a required 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 the 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 an 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. This means that geographic overlap with the proposed project will only be possible in a small part of the proposed project area.

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

The potential geographic overlap with the proposed project is thus even smaller than with the GEF adaptation project.

When intervention clusters are identified, the elements of the any relevant projects being carried out in the project area will be carefully considered and their stakeholders be involved: where good opportunities for synergies are identified and mutually agreed upon, co-location will be sought; where risks of duplication prevail, the present project will focus on different project areas. Mutual sharing of experience and learning of lessons will be promoted by including project stakeholders to the annual reviews where progress is discussed and lessons are identified (see the revised description of sub-component 1.1).

~~Support to the adaptation of agricultural production systems that are vulnerable to climate change. This new, GEF-supported, IFAD-implemented project will be an important source of learning and sharing of information. The project was too new at the time of the preparation of this concept proposal to understand where there may be areas for complementarity and synergy. This will be explored during project appraisal.~~

**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. .

~~WFP Mauritania has included knowledge management and evidenced based programming as part of its country strategy. Thus WFP will take the lead in all activities related to monitoring, evaluation and knowledge management, in line with its corporate procedures.~~

During the design process an evaluation strategy will be developed and aligned to the expected outcomes of the project. Evaluation in addition to monitoring will provide the basis for the evidence- based approach proposed in this project. Also during appraisal, the need for special studies based on the overall objectives of the project will be assessed.

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

- In each village, 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. This will be incorporated in annual work plans.

- WFP will work with MEDD to include all relevant reports and other information on the website 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.

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

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

The project approach has been discussed with several communities during field visits undertaken during concept preparation. The concept 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 suggested. The present draft has been reviewed and endorsed by MEDD.

Consultations and joint site visits were carried out with FAO which will be a technical partner with the Government on the project.

The Lutheran World Federation has also been involved in identifying the project area and set of proposed interventions. It has vast experience in the field of community mobilization and involvement in the fight against desertification.

Consultations were also undertaken with UNDP, IUCN and GiZ (German Cooperation, one of the Ministry of Environment's key partners).

Further consultations, especially at regional and local levels, will be undertaken during project appraisal to fine tune the proposed approach and determine targeted areas.

*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 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 the national institutional level and concrete actions have been ad hoc. Where there has been planning and action at the local level, most activities have been short of technical expertise, have not explicitly taken an adaptation focus utilizing information on climate trends and threats, and 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 on food security which is a 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.

Without concrete adaptation actions and livelihood support, the baseline scenario would see 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 are not developed by the concerned communities. Most anti-desertification projects are focused on tree-planting and stop short of addressing the underlying human-induced factors of deforestation which is driven by food insecurity. With the exception of the re-establishment of *acacia sénégalaïse* in limited areas, few current activities aim at strengthening the livelihood and long-term food security of vulnerable agro-pastoralists. Unless concrete adaptation measures, planned and implemented locally, vulnerability to 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 migrating to urban areas. Natural assets would fail to rebound. Economic opportunity would be lost. More people would 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 desertification. The Government's explicit aim in the proposed project is to build on past interventions, their success and failures, and bring solutions to scale which both address the underlying barriers to sustainable natural resource management and ensure longer-term sustainability.

Adaptation Fund resources would support the transition from a focus on planning and strategy at the central to level to the implementation of concrete actions at the local level. The proposed project would help make this transition by bringing together the three principal ministries which deal with these two areas – Environment, Rural Development and Social Affairs. In the past, there has been little communication or operational coordination between these ministries. The project will further step up coordination between local, departmental, and national government officials, and between representatives of village communities, with the aim of integrating climate change threats into local planning and the implementation of sector activities.

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. 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 important elements in developing a more robust national adaptation strategy for the country.

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

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.

Finally, community driven *concrete adaptation actions* will be implemented based on their identification by beneficiaries and supported with improved technical capacity on the part of the Government and NGOs. These actions will include reforestation, water storage, rangeland protection and regeneration, and improved livestock and agriculture practices. The actions will be sustainable because of their provenance in the communities and because the pressure on land and water resources can be expected to be considerably reduced as a result of the proposed interventions to strengthen food security and livelihoods.

## PART III: IMPLEMENTATION ARRANGEMENTS

### *A. Describe the arrangements for project implementation.*

This section, agreed by Government, is generic and will be completed during project appraisal.

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

Village committees and Rural Development Associations will play a key role in early warning, adaptation planning, and conflict resolution.

Execution of physical works will be undertaken by communities themselves, with community leaders involved in selection, planning and monitoring.

WFP will provide support to MEDD and the management team, and assign a Project Manager to work with the management and regional teams team (see below). WFP will coordinate the processes of monitoring, evaluation and knowledge management with regional teams designated by MEDD 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 aver all responsibility to ensure that the project achieves and measures expected results, and fulfills all reporting functions

A **Steering Committee**, comprised of MEDD, the Ministry of Rural Development, the Ministry of Social Affairs, and WFP will:

- 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 relevant and knowledgeable partners participating in a **Technical Advisory Group** comprised of relevant ministries, including the Ministry of Agriculture, Livestock and Fisheries, UN organisations, including FAO 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;
- participate in annual workshops where annual progress reports and draft work plans will be presented and discussed; and
- contribute with relevant experience and expertise in all matters pertaining to successful project implementation and achievement of sustainable results.



A **Project Coordinator** will be based in the Ministry of Environment and Sustainable Development. 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;
- 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.

**Regional Teams** will be established and comprised of partners recruited for the implementation of project activities in the various regions, including, in particular, staff of the relevant regional technical services. They will:

- work directly with communities, 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;
- 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.

The regional technical services which will be a target in Component 1 will provide the foundation for the regional teams.

## B. Financial and project risk management

The risk management measures in the table below will be assessed and adjusted on an on-going basis:

Risk	Probability	Response Measure
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 meagre 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 forests)	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, 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	Low	The project falls fully within Government strategies and related donor strategies. The project advisory

projects and inputs		group will involve all relevant partners and stakeholders.
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### 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, to be carried out within three months of 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 six 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.

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 summarise 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 is provided below.

Type of M&E activity	Responsible Parties	Budget US\$ (excl. staff time)	Time frame
Inception workshop	Project coordinator	5,000	Within 3 months of project start
Baseline study	Project coordinator, with the assistance of regional teams	15,000	Within 6 months of project start
Annual follow-up reports	Project coordinator, with the assistance of regional teams	40,000	Within the first 3 months of each project year
Quarterly progress reports	Project coordinator, based on information from regional teams and own observations	None	Quarterly
Annual reports	Project coordinator WFP coordinator	4,000	Annually
Annual workshops	Project coordinator	20,000	At the end of each project year
Technical reports	Project coordinator External consultants	None	As required
Mid-term review	WFP coordinator External consultants	25,000	18 months after project start
Final report	MEDD focal point WFP coordinator	2,000	Within 2 months after project end

Final evaluation	WFP coordinator External consultants	35,000	Within 6 months after project end
<b>TOTAL INDICATIVE COST</b>		<b>\$ 146,000</b>	

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 audit 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. Results Framework, Milestones and Indicators**

A complete results framework, including milestones, targets and indicators, will be prepared on the basis of further consultation and presented in the full project document.

**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:*

<p>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</p>	<p>Date :</p> <p>Signature :</p>
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**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. Guy Gauvreau  
 Country Director  
 World Food Programme  
 Mauritania*

Date:                      Tel :

*Project contact person:*

Mr. Olivier Flament, Head of Programme, World food Programme Mauritania

Tel:

E-mail: [Olivier.flament@wfp.org](mailto:Olivier.flament@wfp.org)

**Annex 1: Output based budget**



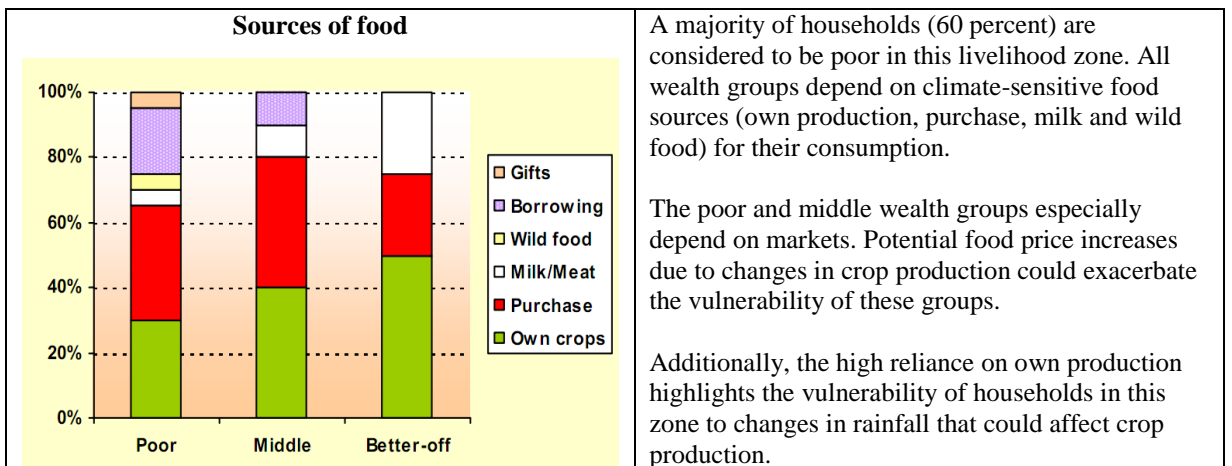
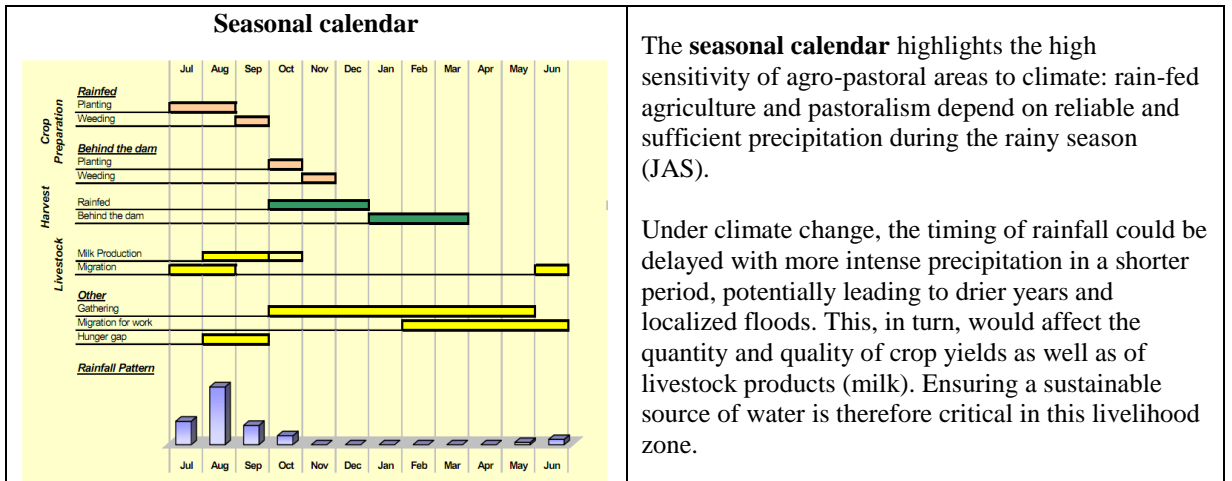
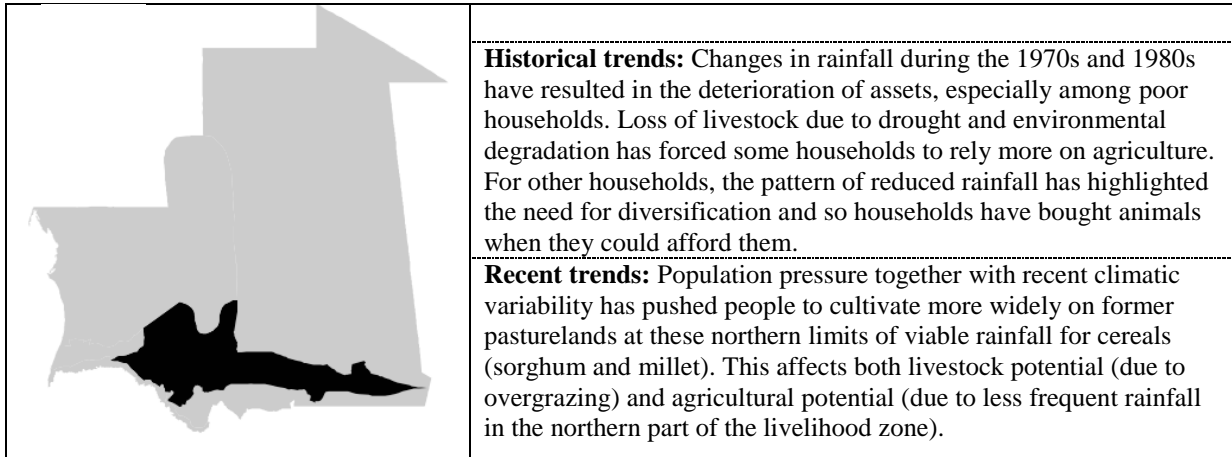
Component		Budget per component	Output	Budget per output
1	Support technical services and communities to understand climate risks and devise relevant and realistic adaptation measures	2.459.800	Technical services strengthened to access and analyze climate change information, to monitor local development and to mobilize and support communities	450.000
			Strengthening of Government's threat, risk and vulnerability analysis	225.000
			Communities trained in climate change threats and adaptation measures which reduce vulnerability, in particular related to food in security	178.800
			100 local adaptation plans prepared by communities	250.000
			Identification of adaptation technology requirements	100.000
			Community participation, in particular participation of women, in guiding decision making processes for project execution	250.000
			20 inter-village associations established and supported	250.000
			Monitoring system in place to track climate events in targeted areas	270.000
			Communities share success stories and lessons learned, including the establishment and support of 4 community radios	486.000
2	Combat against desertification and erosion of productive zones	3.773.200	1,500 - 2,000 ha of sand dunes fixated	659.200
			1,000 - 1,500 ha of vulnerable zones protected	995.600
			1,000 - 1,500 ha of community forests established	1.059.200
			Water retention structures built covering approximately 500 ha	1.059.200
				0
3	Diversify and strengthen livelihoods of the most vulnerable population	3.267.920	300,000 trees for revenue generation and food planted in protected areas	702.400
			4,000 technical staff and community leaders trained in livestock management, agricultural techniques and water utilization	482.600
			5,000 technical staff and community leaders trained and equipped agro-pastoral IGA, including plant multiplication	497.000
			50 community cereal banks	500.000
			6,000 technical staff and community leaders trained in poultry development	207.600
			1,000 technical staff and community leaders trained in apiculture	249.120
			30,000 fuel efficient stoves built	372.800
			2,000 community members (mainly youth) trained to build and maintain fuel efficient stoves	236.400

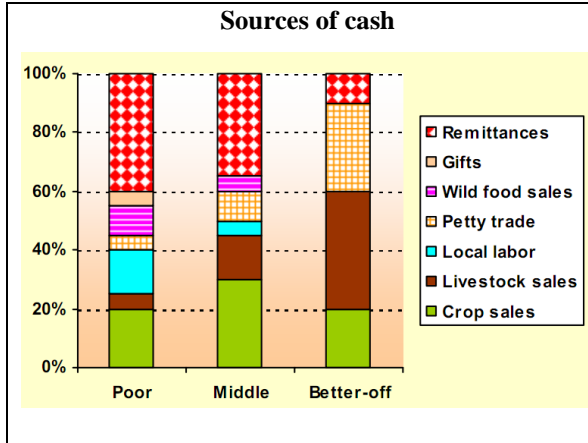
**Total project costs**

**49**

**9.480.920**

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





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: Photographs