



ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

Mauritania Oasis Project

Enhancing the resilience of communities of agropastoral and oasis ecosystems of Ziyara and Dhaya to the adverse effects of climate change in the Adrar region in Mauritania

Title of Project	Enhancing the resilience of communities of agropastoral and oases ecosystems of Ziyara and Dhaya to the adverse effects of climate change in the Adrar region in Mauritania
Country:	Mauritania
Thematic Focal Area:	Multisector project
Type of Implementing Entity:	Regional Implementing entity
Implementing Entity:	Sahara and Sahel Observatory (OSS)
Executing Entities:	SOS Oases Mauritania & Ministère de l'Environnement et du Développement Durable
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PART I PROJECT INFORMATION

1. Project Background and Context

1.1 Background

1. Mauritania is located in West Africa and has a coastline of over 750 km¹ on the Atlantic Ocean. According to the National Statistics Office (NSO) estimates, its population is expected to exceed 4.17 million by 2020² with an annual population growth rate of 2.8 percent. As the large areas of the country are part of the Saharan region, the majority of the population is concentrated in the larger coastal cities of Nouakchott and Nouadhibou, as well as in the Senegal River valley, which has a more moderate Sahelian climate.
2. With an actual GDP per capita of US\$1,723.00 in 2021³ and an annual GDP growth rate of 2.30 percent, Mauritania ranks as a Low to Middle-Income Country (LMIC). Its economy is dominated by the services sector, which contributes 45.8% (2019) of the country's GDP, followed by the industrial sector (25.3%) and the agricultural sector (18.7%). Mineral products (e.g., iron and copper ores), shellfish, and frozen fish are Mauritania's main export products.
3. More than 50.4 percent of Mauritania's population is employed in the agricultural sector, on which they are heavily dependent for food security and livelihoods. Concerns about climate change effects are therefore high, particularly with regard to rising temperatures, water availability, flooding risk and other extreme weather events. Agricultural production in Mauritania is essentially for food and is rainfed. The dominant staple crops are cereals, especially sorghum, as well as rice, maize, cowpeas, and millet. However, smallholders are particularly affected by climate variability impacts, especially in arid areas, which reduces their food sources and increases famine and poverty risks.
4. Mauritania is located in an area of the African Sahel most affected by recurrent droughts since 1968. The resulting desertification is all the more pronounced due to the combined effect of climate change and human action, which has direct consequences on an already very precarious environment. The vulnerability of the country to climate change affects all the vital sectors of the national economy.

1.2 Temperature

5. Mauritania has an arid climate, due to its location in the Saharan desert and the Sahel region. Average annual temperatures range from 21°C to 30°C, with the lowest measured values on the northern coast and the highest in the southeast. Annual rainfall totals range from as little as 20 mm on the northern coast to 400 mm in the south-center which has a Sahelian climate. There is only one rainy season (unimodal rainfall regime) in Mauritania from June to October in the south, with a shortening of the rainy season and rainfall towards the north⁵.
6. In response to the rising Greenhouse Gas (GHG) concentrations, air temperature in Mauritania is projected to increase by 2.0°C to 4.5°C (very probable range) by 2080 relative to the year 1876, according to different GHG emission scenarios (Figure 1). Relative to pre-industrial levels, the median temperature increase from climate models in Mauritania reaches about 2.1°C in 2030, 2.3°C in 2050, and 2.5°C in 2080, under the RCP2.6 emissions reduction scenario. For the medium-to-high emissions scenario (RCP6.0), the median temperature increase of climate models is 2.1°C in 2030, 2.7°C in 2050 and 3.8°C in 2080.

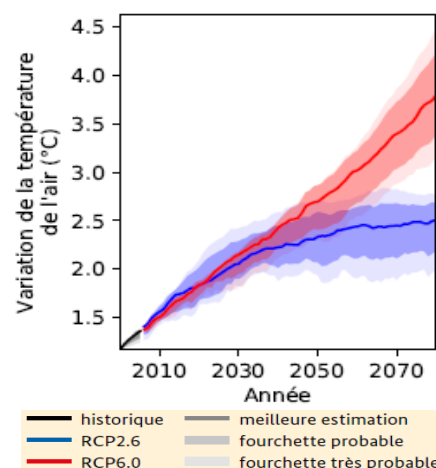


Figure 1: Air temperature projections in Mauritania for different GHG emission scenarios

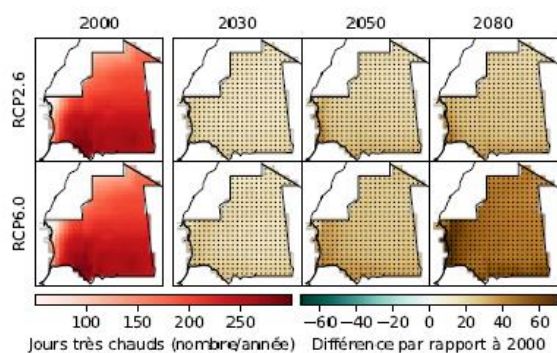


Figure 2: Projections of the annual number of very hot days (maximum daily temperature above 35°C) in Mauritania for different GHG emission scenarios

7. Along with the increase in annual mean temperatures, the number of very hot days per year (days with maximum temperature above 35°C) is projected to strongly increase, with particular high certainty in the western part of Mauritania (Figure 2). Under the medium to high emissions scenario RCP6.0, the median of the multi-model set (averaged over the whole country) predicts 18 more hot days per year in 2030 than in 2000, 27 in 2050 and 49 in 2080. In some parts of the country, particularly in southwest Mauritania, this equates to about 300 very hot days per year by 2080.

¹ CIA World Factbook, "Mauritania," 2020. Disponible en ligne : <https://www.cia.gov/library/publications/the-world-factbook/geos/mr.html>

² World Bank, "World Bank Open Data," 2019. Disponible en ligne : <https://data.worldbank.org>

³ World Bank, "World Bank Open Data," 2021. Disponible en ligne : <https://data.worldbank.org>

⁴ World Bank, "World Bank Open Data," 2019. Disponible en ligne : <https://data.worldbank.org>

⁵ "Profil de risque climatique : Mauritanie", GIZ, 2021

1.3 Precipitation

8. Rainfall projections are less certain than temperature projections due to high natural variability from year to year. Of the four climate models used in this analysis, two models project no change in the mean annual precipitation in Mauritania, and two models project a decrease. The median of model projections for RCP2.6 shows a slight increase in precipitation of 6 mm per year by 2080, while the median of model projections for RCP6.0 shows a decrease in precipitation of 11 mm by 2080 compared to the year 2000.

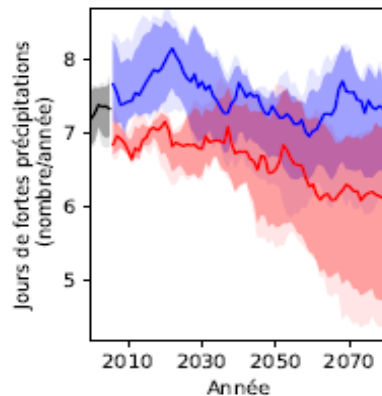


Figure 3: Projections of number of days with heavy rainfall in Mauritania for different GHG emissions scenarios, compared to the year 2000.

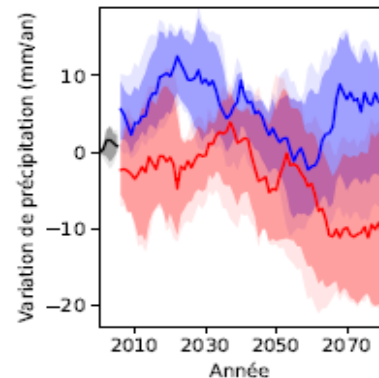


Figure 4: Average annual rainfall projections in Mauritania for different GHG emission scenarios, relative to the year 2000

9. In response to global warming, heavy precipitation events are expected to increase in intensity in many parts of the world as the atmosphere becomes warmer and its capacity to hold water vapor increases. The number of days with heavy precipitation is also expected to increase. However, this trend is not reflected in the climate projections for Mauritania, with climate models predicting a decrease in the number of days with heavy rainfall from 7 days per year in 2000 to 6 days per year in 2080 under RCP6.0. Under RCP2.6, no change is projected.

1.4 Water resources

10. Mauritania is subject to strong seasonal and annual variations in rainfall as well as recurrent droughts, which are major problems for agricultural production⁶. The country was hit by repeatedly with droughts in the 1970s and 1980s as rainfall declined. This decline in precipitation led to a massive reduction in water resources and vegetation cover, land degradation and desertification⁷, which in turn led to the loss of arable land and the reduction of agricultural production, as well as loss of pasture and depletion of livestock⁸.

11. Regarding Surface water in Mauritania, there are about 400 hydraulic works (dams, dykes, dikes,) with a potential volume of 850 million m³ to irrigate 25,209 ha. However, 36% of these structures are not currently functional, resulting in a potential water loss of about 300 million m³⁹.

12. In addition, the effects of the drought have led to conflicts between farmers and herders in the Senegal River Valley, which led to the Senegal-Mauritania conflict (1989), resulting in the high population deaths and the high displacement rate within the region¹⁰. Even though annual rainfall totals have increased again in the 1990s, it remains below the national average for the past century with the subsequent droughts of 2005, 2008, 2010, and 2012. Overall, Mauritania's freshwater resources are unevenly; concentrated, distributed, along the southern border, leaving the country's growing population in shortage of water and in a situation of competition for this limited resource.

1.5 Agriculture

13. Smallholder farmers in Mauritania are increasingly challenged by the uncertainty and variability of weather caused by climate change. Since crops are predominantly rainfed, yields highly depend on water availability from precipitation and are prone to drought. However, the length and intensity of the rainy season is becoming increasingly unpredictable and the use of irrigation facilities remains limited. In 2004, less than 10% of the estimated irrigation potential of 250,000 ha (0.6 % of total national crop land) were irrigated. The main irrigated crop is rice, in addition to maize, sorghum and vegetables¹¹. To note, central and northern Mauritania are especially characterised with sandy soils which are poor in nutrients, thus complicating irrigation and crop production resulting into decline of agro-biodiversity and loss of local crop varieties.

⁶ K. Sissoko, H. van Keulen, J. Verhagen, V. Tekken, and A. Battaglini, "Agriculture, Livelihoods and Climate Change in the West African Sahel," Reg. Environ. Chang., vol. 11, no. 1, pp. 119–125, 2011.

⁷ P. Ozer, Y. C. Hountondji, J. Gassani, B. Djaby, and D. L. F., "Évolution récente des extrêmes pluviométriques en Mauritanie (1933–2010)," XXVIIème Colloq. l'Association Int. Climatol., pp. 394–400, 2014.

⁸ Islamic Republic of Mauritania, "National Adaptation Programme of Action to Climate Change," Nouakchott, Mauritania, 2004.

⁹ Fourth national communication of mauritania, july 2019

¹⁰ A. Nicolaj, "The Senegal Mauritanian Conflict," Africa Riv. Trimest. di Stud. e Doc. dell'Istituto Ital. per l'Africa e l'Oriente, vol. 45, no. 3, pp. 464–480, 1990

¹¹ Y. M. Bachir and A. Ould Hamadi Sherif, "Mauritania Livelihood Zoning Plus," Washington, D.C. and Madrid, Spain, 2013.

1.6 Ecosystems

14. Climate change is expected to have a significant influence on the ecology and distribution of tropical ecosystems, though the magnitude, rate and direction of these changes are uncertain¹². With rising temperatures and increased frequency and intensity of droughts, wetlands and riverine systems are increasingly at risk of being converted to other ecosystems, with plant populations being succeeded and animals losing habitats. Increased temperatures and droughts can also impact succession in forest systems while concurrently increasing the risk of invasive species, all of which affect ecosystems. In addition to these climate drivers, low agricultural productivity and population growth/pressure might motivate further agricultural expansion resulting in increased deforestation, land degradation and forest fires, all of which will impact animal and plant biodiversity. The country has lost 86,000 ha of forest cover in the period from 2001 to 2016, which is equivalent to a 28 % decrease.

1.7 Country Vulnerability to Climate change

15. Mauritania is at risk to hydrometeorological hazards and natural disasters. The southern parts of the country are classified at high risk for river flooding due to heavy rainfall interspersed with increased aridity. Flash flooding is also considered likely as high risk as Mauritania is ranked as high risk for coastal flooding due sea level rise and increased vulnerability as the majority of its population residing along coastal areas.

16. The country is at risk to water scarcity due to the projected increased variability of runoff and river flows, increased temperatures resulting in increased evaporation of surface waters and reduced runoff, increased competition over reduced water resources as well as limited infrastructure. Extreme heat is an existing challenge for the country and one that is projected to get increasingly worse. The entire country is ranked at high-risk for extreme heat, with Climate change expected to increase risks and severity of natural disasters in Mauritania. Vulnerability is exacerbated due to the country's high level of poverty and high dependence on 'climate change sensitive' sectors, such as agriculture, fisheries, mining and livestock. Human-induced environmental pressures include land degradation and desertification as a result of poor agricultural practices, overgrazing and deforestation. Extreme weather events, including heavy precipitation and severe droughts, are expected to exacerbate climate change impacts.

1.8 Economic and social situation

17. Socially, Mauritania experienced a period of sustained growth between 2008 and 2014, which was accompanied by significant increase in household livelihood. However, some segments of the Mauritanian population have not benefited from this progress, while the country lags behind on many social indicators¹³

18. Poverty has not declined, probably due to migration to urban areas, with the capital attracting the poorest people. Labour force participation and employment rates have also not increased, and those excluded from social progress, including youth, women, and the working poor, are increasingly marginalized. School enrollment for children aged 6 to 11 is only 55%, where one-third of households live in poor housing, and only 38% of the population has access to electricity. This situation has been further been impacted by the climatic situation and the periods of flooding and drought that Mauritania has experienced, which inherently affected access to resources, soil quality, various agricultural activities and vulnerable ecosystems, including oases.

1.9 Adrar: Geographic and geological context

1.9.1 Location

19. The wilaya of Adrar is located in the north of Mauritania and covers an area of 233,478 km², which is 22.65% of the total area of Mauritania (1,030,700 km²). It is bordered to the north by the wilaya of Tiris Zemmour, to the west by the wilayas of Dakhlet Nouadhibou and Inchiri, to the east by the wilaya of Hodh El Chergui and Mali, to the south by the wilayas of Trarza and Tagant.

20. Administratively, the Wilaya is divided into four Moughataa (province) (Atar: the regional capital, Aoujeft, Chinguitty and Ouadane), and has eleven Communes and two Districts (Choum and N'Terguent). In the Wilaya of Adrar there are chains of tabular plateaus with peaks reaching up to 815m in altitude (Plateaux de l'Adrar) and majestic sand dunes characteristic of the region (El Mejabât El Koubra, Erg Ouarâne), offering magnificent panoramas between the sand and the stones. Between these plateaus, you can admire beautiful sites including canyons (canyon of the Amogjâr pass).

21. In 2018, the population of the wilaya of Adrar had 61,122 inhabitants according to ONS statistics, a density of about 0.3 inhabitants per Km², ranking Adrar as the second least populated Wilaya behind Tiris Zemmour and before Inchiri. The wilaya is divided into

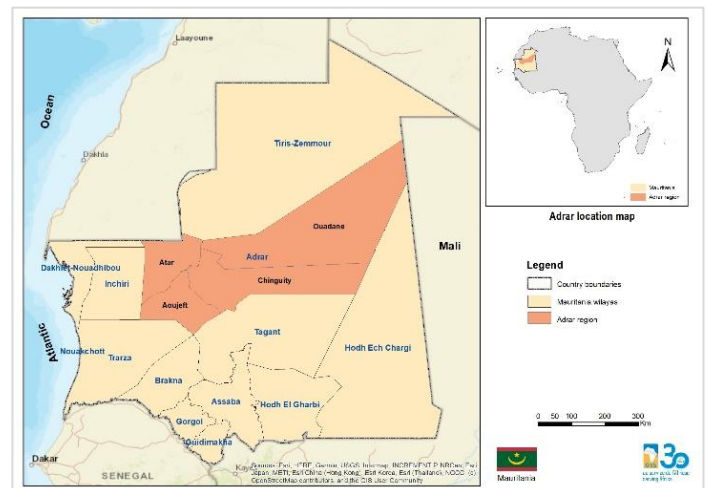


Figure 5: Map showing location of Adrar

¹²T. M. Shanahan, K. A. Huguen, N. P. McKay, J. T. Overpeck, C. A. Scholz, W. D. Gosling, C. S. Miller, J. A. Peck, J. W. King, and C. W. Heil, "CO2 and Fire Influence Tropical Ecosystem Stability in Response to Climate Change," Nat. Publ. Gr., no. July, pp. 1–8, 2016.
¹³ Fourth national communication of mauritania, july 2019

four (04) Moughataa (Atar, Aoujeft, Chinguitty and Ouadane), eleven (11) communes and 306 localities, as shown in the table 1 below.

Table 1: Distribution of communes, number of localities and areas of Adrar Moughataas

Moughataa	Commune	Number of localities	Area in Km ²
Atar	4	91	24.728
	Atar	5	
	Aïn Ehel Taya	33	
	Tawaz	32	
Aoujeft	4	154	26.159
	Aoujeft	31	
	Maeden	48	
	N'Terguent	38	
Chinguitty	2	45	61.813
	Chinguitty	31	
	Aïn Savra	14	
Ouadane	1	16	120.778
	Ouadane	16	
Total	11	306	223.478

1.9.2 Topography

22.The Adrar region is dominated by the Mejabat El Khoubra, an almost impermeable desert that covers 52% of the Wilaya's area with altitudes that can reach between 200 and 350 m in high. Lemreye and Ouarane dune fields, make up the eastern and southern parts of Mejabat El Khoubra. Amsaga, a flat Saharan peneplain of 100 to 200 m high, extends to the west and southwest of the region.

23.The Adrar regroups the most important landform of the country, where there are tabular mountain chains with peaks reaching up to 800 m high¹⁴ (figure 6), that make up the Adrar plateau. It is located in the western half and is dominated by a multitude of cliffs of which the Dhar of Chinguitty is the most important one; as well as several peaks including the Guelb Richatt (north of Ouadane) and hills in the northwest.

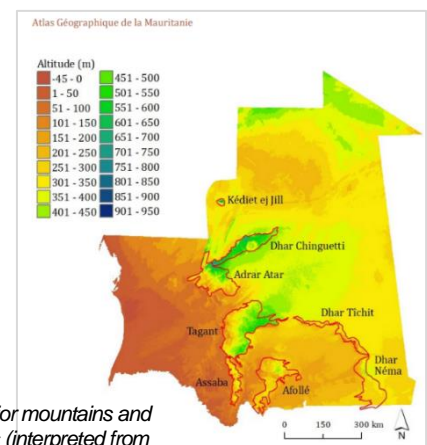


Figure 6: Major mountains and escarpments (interpreted from Jarvis et al., 2008).

1.9.3 Hydrography

24.Adrar is mainly characterized by aquifer resources and a number of temporary pools. In addition to these, there's also water from scarce rains, particularly the torrential ones that are sometimes recorded in the wilaya and that flood the ponds and shallows. During the so-called "rainy" years, the ponds fill up and the shallows and the basins are flooded. Aquifer recharging and irrigation is thus made easier. It has several rivers that are endorheic. The most important are the Séguellil wadi and the El Abiod wadi which converge in the Aïn Ehel Taya area and flow into the great Yagref flood plain whose bottom elevation is at an altitude of 110 m on the topographic map of Atar.

25.In terms of groundwater resources, the wilaya of Adrar is located on the edge of the vast Taoudeni sedimentary basin, which is an enormous syncline that integrates the eastern edge of Guidimagha and the two Hodhs, and extends into Mali. It is located: (i) In Amsaga, in the West, on ancient basement formations of granitic and gneissic type; (ii) In the East, on ancient sedimentary formations of the Primary Period, consisting of sandstone, limestone, pelitic and schistose rocks; (iii) In Amsaga, the ancient granitic and schistose basement is likely to contain only discontinuous aquifers in the zone of alteration or fracturing, of low extension, possibly soft but often not perennial, of poor quality and delivering small flows; (iv) In the center (Atar, Aoujeft), the sedimentary formations that form the high landforms of the Dhar, are mostly made up by a typically silicified and relatively impermeable sandstones; on the other hand the structural position at the edge of the basin does not favour the existence of continuous captive aquifers; and (v) To the south-east, there is also a set of schistose and greenstone metamorphic formations belonging to the Mauritanian Arc, in which studies have located freshwater resources but probably in modest volumes.

26.In terms of surface water resources, the region is marked by the presence of wadis (temporary watercourses) that operate according to rainfall. The brutality and irregularity as well as the low rate of rainfalls give rise to little important runoff. In the Adrar massifs, a long network of anacinal drainage collects this water and forms depressions called "baten": (i) In the south, the Adrar baten is drained by the Wadi Seguellil in the Amsaga peneplain; (ii) To the north, a system of independent basins aligned from Ghallaouia to the Chemchame sebkha.

¹⁴ Source: Naia, M., Brito, J. C. (2021). Atlas Géographique de la Mauritanie. CIBIO/InBIO. Biodéserts Rapport FR-02. 101 pg.

27. These are also mostly threatened by the formation of sand dunes. Floods become rare but devastating during the rainy season at times. The surface hydraulic infrastructures (dams, dykes, dykes) existent in the area have been summarized in the table below.

Table 2: Situation of dams, dykes and other water reservoirs built up to 2014. Source: MAPNDA, 2016

Inventory of water reservoirs (year 2008)				Dams constructed from 2009 to 2014 (DAR+ PDDO)		TOTAL ACHIEVEMENTS UNTIL 2014	
Total number			Area (ha) (*)	Number	Area(Ha)	Number	Area(Ha)
Total	Deductions without area identified (*)	Deductions with area identified					
45	5	40	3,749	4	490	44	4,239

28. From a hydrogeological point of view, the wilaya of Adrar can be subdivided into 2 sets from west to east:

- The Mauritanides chain and the Reguibat ridge to the West and North-West;
- The Taoudenni basin in the center and to the east.

29. The Reguibat ridge consists of heavily eroded basement rocks, mainly granitic and gneissic. The superficial weathering layer is poorly developed. Aquifers are therefore mainly linked to fracture zones that are more or less connected to each other. The extension of aquifers is necessarily very limited and the groundwater resource is very low. The slice of alteration is too small to be of hydrogeological interest.

30. This domain consists essentially of metamorphic or magmatic rocks whose hydrogeological character is characterized by the discontinuity of the aquifers. These aquifers sometimes take on a certain importance at the level of the wadis. The infiltration of flood waters allows them to be recharged. The static levels are between 13 and 80 m, the flow rates from 3 to 10 m³/h. Further north, all the boreholes carried out in the area have found water at depths between 6 and 40m. The waters are mostly brackish.

31. The Taoudéni basin. The water resources of the Mauritanian part of this basin are contained, compared to the sections of the project, in the aquifers of the Adrar which has been the subject of several hydrogeological reconnaissance campaigns. The results obtained on boreholes from 20 to 220 m deep were relatively positive in the Agueni sandstones, the Atar limestones and those of Toueiderguilt.

32. The sources of water supply in the Wilaya are: 11.7% in the AEP networks; 3.12% in public fountains; 24.63% or a total of 39.45% and the rest 60.55% unidentified.

Table 3: Sources of water in Adrar

Water source	Adrar	National
	Rate (%)	Rate (%)
AEP network	11.7	15.0
Public Fountain	3.12	25.7
Well	24.63	37.3
River-source	0	13.0
Others	...	9.0
Total	100.0	100.0

1.9.4 Bioclimatic Zones

33. The region of Adrar is located in the center of the arid zone, 73% of which is subject to Saharan climate and 27% to desert climate. The strong North and North-East winds, from continental origin, blow from January to September with a lull from October to December. Annual temperatures range from 42.0°C (July) to 12.7°C (December). The rainy season is under the influence of the monsoon. It extends from July to September-October. Rainfall is very irregular in time and space. Annual rainfall totals in the area vary from 40 to 100 mm from north to south.

1.9.5 Vegetation

34. The region has experienced decades of severe droughts. The ergs and Saharan ergs are bare while the desert ergs and stabilized sand dunes have sparse vegetation consisting mainly of *Acacia flava* and *Aristida pungens*. On rocky soils covered with sand or superficial, in desert climates, one can find rich paths of *Panicum turgidan*, *Acacia flava* and *Zizyphus lotus*. In areas of water build up, such as El Beyid, Guelb Er Richat and Yaghref, the vegetation is lush: forests of *Acacia tortilis*, *Capparis decidua*, *Tamarix senegalensis*, *Acacia seyal* and *Acacia albida* (Ouada).

35. All along the wet valleys, there are beautiful date palm oases. The latest census in 2012 shows that Adrar has 75 oases, spread over more than 8800 farms and covering an area of 5673 ha, representing 21% of the total number of oases in Mauritania. The total number of date palms is 1,192,218, representing 45% of the total number at the national level. In Adrar, 65% of date palms are located in the Moughataa of Aoujeft with a concentration in the communes of Elmaaden and El Meddah. The average size of an oases in this Wilaya is 75 ha in terms of area and 15,896 tree/ha.

1.10 Socio-demographic characteristics

1.10.1 *Socio-economic context*

1.1.10.1.1 Population

36. The Wilaya, which is home to 62,658 inhabitants in 2013, has significant potential that can be exploited to make a good contribution to the policies of fight against poverty, unemployment and the promotion of employment of young people. Moreover, the weight of the population of the wilaya of Adrar compared to the total population of the country is around 1.77%. The density of approximately 0.3 inhabitants per km²; that of the country is 3.43 inhabitants per km².

37. The table below gives the distribution of the populations listed in the Wilaya in its four (4) Moughataas in 1988, 2000 and 2013.

Table 4: Distribution of populations identified in the Wilaya

Moughataa	1988	2000	2013
Aoujeft	16217	20181	12997
Atar	35317	38962	38877
Chinguitti	6327	6704	6810
Ouadane	3186	39395	3974
Total	61047	69542	62658

38. The monograph of the Wilaya of Adrar drawn up by the National Office of Statistics (ONS) in 2017 showed an evolution in the number of populations for the whole of the wilaya of Adrar, with a remarkable variation at the level of the Moughataas. The results show that the population of the Wilaya is still young, because approximately 45.45% of the population are under 15 years old, against 59.46% for the active age group (15-64 years old). This population is dominated by the female sex, because approximately 53% of the total population of the Wilaya are women against 47% for the male sex. The distribution of households according to the source of drinking water supply shows that 32.2% of households most often get their drinking water from a truck or cistern, while 21.8% of households use uncovered wells.

39. The data collected in the 2013 Census at the Wilaya level reveal that more than 19.7% of the population aged 6 and over have not received any education and that approximately one person in four of the population of the wilaya aged 10 and more is literate (25%) with a difference in favor of men (22%) against (27%) for women.

1.1.10.1.2 Agriculture

40. The oases cultures which concern mainly 5 wilayas of the country, in particular Adrar (Aoujeft pole), Tagant (Rachid pole), Assaba and the two Hodhs (Tamchekett and Néma poles).

41. In Adrar and Tagant, the oases are generally located along the wadis in the rocky plateaus which are sometimes difficult to access. In the two Hodhs, they are located in the interdune depressions. Several palm groves are uninhabited and are only visited at specific times of the year; at the time of pollination (February/March) and during the harvest (Guetna) during which entire populations settle in the oases from the start of the ripening of the first dates until the final harvest.

42. The Adrar and the north of Tagant are areas with an ancient oases tradition where farmers had proven date palm expertise. On the other hand, the south of Tagant, Assaba and the Hodhs have a recent date palm tradition with little know-how. Farm management is based on palm cultivation and associated irrigated crops: market garden crops, cereals, but also henna (*Lawsonia alba*) and alfalfa. There are flood-recession crops (sorghum, cowpea, etc.) sometimes next to the oases, behind dams, on sandy loam soils.

43. The wilaya of Adrar (Pôle Aoujeft) is considered as the first date-producing region of the country. It currently represents around 45% of national production, i.e., around 12,727 T net. This quantity is distributed as follows (PDDO, 2020):

- 7,700T consumed fresh locally during the Guetna period
- 3,500T marketed at the major markets (50% Nouakchott, 20% Atar, 30% other markets (Nouadhibou, Zouérate, etc.) and the remaining quantities are stored in the oases.

44. The average annual production of dates fluctuates from year to year due to climatic conditions, varieties and the quality of cultivation techniques. Date palms in Adrar are generally not very productive compared to countries in the sub-region, with average yields per palm of 15 to 20 kg per foot without irrigation, although irrigated palm groves have yields of 30 to 50 kg per plant. foot (PNDA, 2016, STM, 2019 and PDDO, 2020).

Table 5: Evolution of areas used for date palm cultivation. Source (Oases project and PDDO)

Wilaya	Year	Number of palm trees	Area (ha)	Number of farms
Adrar	1984	386,017	2,187	2,876
	1993	883,060	1,876	6,590
	2020	1,212,876	5,759	10,211

45. All of the palm groves are subject to significant damage caused by the white cochineal (*Parlatoria blanchardi*), palm mites (*Olygonycus afrasiaticus*) as well as many other parasites and various diseases. The irregularity of the treatments against these parasites have a negative effect on the yields, the quality of the dates and their market value.

Table 6: Main constraints of oases crops

Domain	Constraints
Production	<ul style="list-style-type: none"> • Insufficient water control in the oases: ineffective management, overexploitation of groundwater, and poor dissemination of water saving techniques and low-cost pumping systems. • Insufficient promotion and adoption of improved farming techniques. • Weak protective action against the silting up of the oases. • Low yield of palm trees and aging of the plantation. • Depletion of the gene pool of the palm grove and disappearance of certain cultivars. • Low level of supervision and advisory support.
Harvest, packaging, storage, drying, transformation, transportation	<ul style="list-style-type: none"> • Low knowledge of improved harvesting techniques; • Poor knowledge of improved post-harvest techniques: packaging, storage, processing, transport; • Insufficient packaging and storage infrastructure adapted;
Marketing	<ul style="list-style-type: none"> • Strong competition (quality and price) of dates from Morocco, from Algeria, Tunisia and Saudi Arabia.
Actors of the sector	<ul style="list-style-type: none"> • Insufficient organization and cooperation between the players in the sector (producers, suppliers of goods and services, transporters, merchants, advisory support structures, consumers)

46. The city of Atar, capital of Adrar (80 km from Aoujeft) has had a date and vegetable packaging plant since 2019 with a storage capacity of 500 tons. It includes 4 cold rooms, two freezing rooms and workshops for sorting and processing dates. This factory is managed by the Firm Toumour Mauritania (STM), the first national establishment specializing in the conservation and marketing of dates and vegetables in Mauritania. It aims to improve the economic activity of the populations in the oases and to exploit the local product to make the most of it and partly cover the country's needs for quality dates, thus competing with imported dates, particularly from Tunisia and Algeria. This company has mixed capital (State and Caisse des Dépôts et de Développement). In Adrar, market gardening is an occupation and an income-generating activity, especially for women and young people. Annual production varies from year to year. It strongly depends on the climatic conditions, the availability of water, the plant material and the technical itineraries adopted. Producers' access to quality vegetable seeds and other inputs (fertilizers and phytosanitary products) is quite limited.

47. Transport is done in poor conditions, not taking into account the perishability of market garden products. Depending on the distance from the production area to the market as well as the operator, transport is done using non-specialized vehicles, especially small trucks, and transport costs are high. In addition, poor transport conditions lead to poor sales caused by loss of product and value (lower selling prices).

48. The main indicators characterizing the Adrar region Socio-demographics are listed as follows below:

- From a demographic point of view, the region has experienced a significant increase in population despite the phenomenon of rural exodus recorded;
- Economically, the region is dominated by a specialization in agriculture and tourism;
- Regarding agriculture, the regional profile indicates a relative specialization in phoeniculture, vegetables and fodder;
- In terms of human development, the region lags behind with regard to poverty;
- In terms of investment, the region has been characterized by a low attraction of private and public investors; and
- In terms of unemployment, the region has many unemployed youths.

49. The data on the zones are heterogeneous and insufficient, so they do not provide a clear picture of the agropastoral dynamics of the zone, marked by, among other things, the exodus, the abandonment of production areas (Ghraras, palm groves), the loss of plants and livestock, etc.

50. There are three types of agriculture in Adrar which are, in order of importance: phoeniculture, market gardening, lowland/barrage crops and rainfed crops. Cereal production, which is largely dependent on irregular rainfall, covers, during good years, only 30% of estimated needs. The types of grown grains are mainly sorghum and, to a lesser degree, wheat and barley. Agricultural production in Adrar is generally in deficit despite (i) the efforts made by the public authorities and the various technical and financial development partners; (ii) the existence of relatively significant potential for its development. Indeed, a series of constraints hinder the success of sustainable agricultural development initiatives in the Wilaya, the main ones being (i) the impact of climatic hazards (significant rainfall deficit and lowering of groundwater levels in particular); (ii) the inadequacy and degradation of water control infrastructure (dams and dykes); (iii) the isolation of some production areas; (iv) the high cost of transporting agricultural products; (v) environmental degradation related to increasing desertification; (vi) the inadequacy of the workforce in the oases ; (vii) low resources allocated to producer empowerment; (viii) low capacity of socio-professional organizations; (ix) lack of an appropriate agricultural credit system; (x) lack of agricultural input and equipment supply systems; (xi) low operational capacity of the regional agricultural service and civil society; (xii) insufficient protection of crops against animal rambling; (xiii) lack of modernization and disaffection of rural areas

51. The livestock breeding sub-sector in Adrar is essentially extensive due to the existence of rich pasture potential, but which remains dependent on structurally deficient rainfall. The main species are camels and goats with few sheep and almost no cattle.

52. As in the rest of the country, this sub-sector faces constraints in both the production and the processing and conservation segments, in addition to the lack of operational capacity of the main actors (the DR of livestock and livestock associations), without which it would be impossible to take charge of the activities.

53. Other constraints on the sector include: (i) the absence of annual vaccination of camel and goat/sheep livestock against the main diseases; (ii) the absence of an operational legal framework organizing the veterinary profession and the management of medicines and veterinary products; (iii) the low level of training and the lack of follow-up for the upgrading of veterinary auxiliaries; (iv) the absence of fodder crops and straw conditioning; (v) the lack of water points in potential grazing areas; (vi) the lack of human resources to implement activities; (vii) the lack of logistic means for monitoring and ownership of support by the populations; (viii) the low level of budgetary resources allocated to the operation of the livestock service; (ix) the low operational capacity of civil society actors.
54. Adrar has a multitude of natural depressions (lowlands and other places where runoff water is concentrated) and oases that, because of their morphology, have hydrological characteristics that make them areas of high agricultural potential and great biological diversity. However, desertification and silting threaten a large part of the territory of the Wilaya.
55. For reasons of cost and habits, charcoal is still a source of energy used in Adrar. Reforestation areas would represent a feasible option in forestry areas and oases areas to ensure their protection against erosion and other forms of land degradation.
56. The main constraints identified at this level are related to the following aspects: (i) strong anthropic pressure on scarce natural resources for domestic needs and agro-pastoral production; (ii) great modification of settlements, biotopes and ecosystems; (iii) wind erosion of sandy soils due to winds; (iv) silting that affects arable land and infrastructure; (v) degradation of land and soils; (vi) weakness of operational capacity (financial, human and equipment) of the regional environmental service; (vii) pollution risks in connection with mining and oil exploration and their potential exploitation; (viii) weakness of the capacities of civil society actors; (ix) lack of information and of reliable data collection and lack of knowledge of environmental resources.

1.11 Climate trends in the Adrar region (impacts on agriculture, livestock, water resources and ecosystems)

57. The observed climate changes have exacerbated the negative effects of ecosystem degradation in Adrar. Since 1960, Mauritania's climate with a lense in the Adrar Region has become progressively drier and the desert region has expanded by 150,000 km². Other climate changes that have been observed over the past five decades include: i) an increase in the frequency of intense rainfall events leading to flash floods; ii) a decrease in low intensity and long duration rainfall events leading to prolonged dry periods; iii) longer and more frequent droughts; and iv) an increase of 0.9°C in the mean annual temperature. These climate changes have had negative impacts on communities in Mauritania, particularly those living in the drier northern regions. For example, the drier conditions experienced in the 1970s and 1980s caused rural nomadic pastoralist communities to settle near oases or migrate to urban areas. As a result, meat production declined significantly throughout the country and pastoralists suffered considerable income losses.
58. In the Adrar region, as part of other West African countries specificities, the main activity sectors in the area are: agriculture and livestock breeding where agropastoral production systems (agriculture and livestock) are among the most vulnerable in the world due to their dependence on rainfall, intra- and inter-seasonal climate variability, droughts and floods that repeatedly affect crops and livestock, as well as poverty level in rural areas, which limits the adaptive capacity of agricultural and rural communities.
59. Agriculture in this area will face major challenges, namely major crops yields decline. Changes in cropping seasons will also affect production systems and crop potential in some areas (Cook and Vizey, 2012). "Integrated crop-livestock" systems may also evolve toward the pre-eminence of extensive livestock production due to shorter rainy seasons and the occurrence and succession of low-fruited agricultural seasons (Jones and Thornton, 2009; Thornton et al., 2010). In several agro-ecological transition zones, livestock could replace crops by 2050 (Jones and Thornton, 2009).
60. Temperature increases above 2°C could also negatively affect the performance of modern grains' varieties as opposed to traditional hardy varieties (Sultan et al., 2013). In the short term, a better understanding and management of climate change associated impacts and variability could significantly contribute to enhancing agriculture adaptive capacity (Funk et al., 2008). The observed climate changes have exacerbated the negative effects of ecosystem degradation in Adrar. Since 1960, Mauritania's climate with a lense in the Adrar Region has become progressively drier and the desert region has expanded by 150,000 km². Other climate changes that have been observed over the past five decades include: i) an increase in the frequency of intense rainfall events leading to flash floods; ii) a decrease in low intensity and long duration rainfall events leading to prolonged dry periods; iii) longer and more frequent droughts; and iv) an increase of 0.9°C in the mean annual temperature. These climate changes have had negative impacts on communities in Mauritania, particularly those living in the drier northern regions. For example, the drier conditions experienced in the 1970s and 1980s caused rural nomadic pastoralist communities to settle near oases or migrate to urban areas. As a result, meat production declined significantly throughout the country and pastoralists suffered considerable income losses.
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1.12 Identification and description of the project area and target population

64. The project intervention areas are the 2 poles of Dhaya and Ziyara respectively in the Moughataa of Atar and Chinguitty -Wilaya of Adrar as seen in figure 3 below.

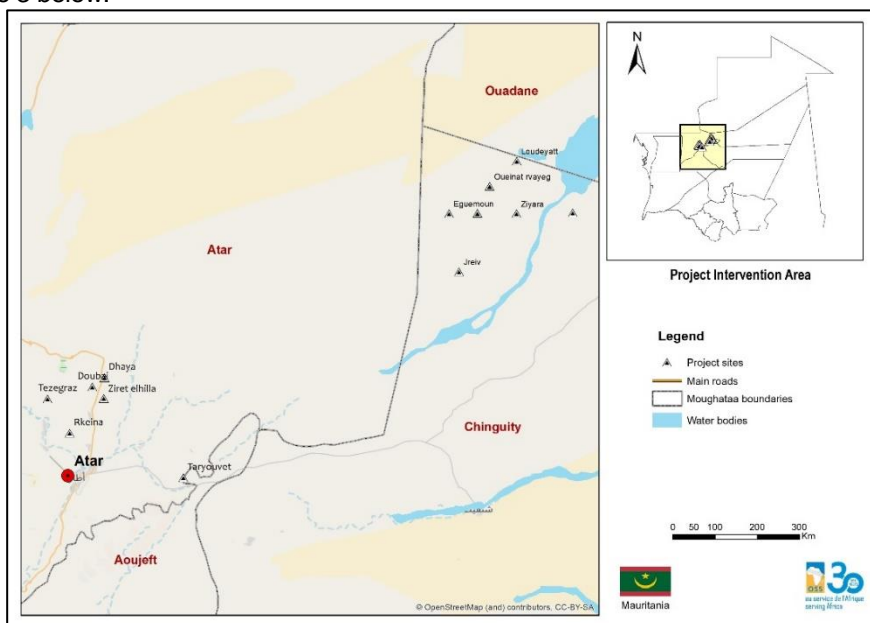


Figure 7: Project Intervention Areas

65. In the project of intervention areas of (Dhaya and Ziyara), the population of direct beneficiaries is estimated at 5,035 people, including 2,375 men and 2,660 women, distributed in the villages/localities as indicated in table 3 below.

Table 7: Direct beneficiaries of the Project

Moughataa	Locality	Estimated population		
		Men	Women	Total
Atar	Ziret Elhilla	320	350	670
	Dhaya	140	155	295
	Doubai	170	130	300
	Tezegraz	200	250	450
	Rkeina	180	210	390
	Taryouvet	100	175	275
Sub Total		1110	1270	2380
Chinguitty	Ziyara	300	350	650
	Nguermellil	160	190	350
	Oueinet rvayeg	140	150	290
	Mintevaa	150	200	350
	Eguemoun	100	90	190
	Loudeyatt	165	140	305
	Jreiv	250	270	520
Sub Total		1265	1390	2655
Total		2375	2660	5035

66. In terms of livelihoods in the project area, agriculture (food crops and phoeniculture) and livestock are the main economic activities. The main crops grown are: sorghum, beans, watermelon, barley, wheat and palm. Yields are very low due to severe water stress. Livestock breeding is practiced in all project areas, but is more important in the Ziyara area, notably transhumant pastoralism.

67. The main characteristics of the farming systems in the project areas are low crop yields, prevalence of poverty and food insecurity, particularly in rural areas, and lack of pasture and watering points for livestock. More than 10,000 people living in rural areas in the project's implementation zone will benefit indirectly in terms of improved food and nutritional security and income levels.

68. Thus, by the end of the project, more than 15,000 people will have benefited from the strengthening of their technical and operational capacities. These are:

- More than 5,000 farmers and breeders (more than 50% are women);
- More than 24 producers' and breeders' organizations;
- More than 40 technicians and supervisory staff from the ministries in charge of agriculture, livestock, environment and hydraulics;
- More than 4 research institutions specialized in issues related to the adaptation of agriculture and livestock to climate change.

2. Project Objectives:

2.1 General Objectives

69. The project is part of the Mauritanian government's environmental policy, a policy supported by development partners and to which SOS-OASIS has been contributing for over 20 years through targeted interventions using inclusive and contextually adapted methods. The strategy for this project will be based on a participatory approach involving all stakeholders, especially women and youth in the targeted localities. Thus, the expected support will be aligned with the overall strategy defined by the Government and its partners in the promotion of restoration techniques and sustainable management of natural resources in order to contribute to the fight against climate change and its effect on the loss of scarce biodiversity resources in drylands.

70. The overall objective of the project is to strengthen the resilience of communities (women and youth) of Ziyara and Dhaya oases ecosystems, to climate change impacts through sustainable soil and water and management techniques as well as natural resources and related agrosystems.

2.2 Specific Objective

71. The specific objectives of the project are as follows:

- Ensure rational management of water resources in oases,
- Implement concrete adaptation actions to strengthen the resilience of oases and agro-pastoral ecosystems
- Implement concrete adaptation measures to diversify income sources and improve the living conditions of vulnerable women in the project area,
- Strengthen the institutional and technical capacities of the different actors, share knowledge and raise awareness among stakeholders at different levels.

72. To fulfil the above objectives, the project will have four components as follows:

73. Component 1: Improved water resources access and management for local communities: This first component aims to improve water management techniques as well as water pumping systems. In response, an oases resources management process this will be implemented to set up and rehabilitate small hydraulic infrastructures, to valorise innovative techniques of water irrigation and to promote good water resource management practices. The activities herein will be implemented in cooperation with national structures such as the Ministries of Hydraulics, Agriculture and Environment, etc.

74. Component 2: Improved resilience of ecosystems and livelihoods to climate change and variability: This component focuses on building the resilience of the oasian and agropastoral eco-systems to CC impacts and improving community adaptive capacities. This will be achieved through appropriate and concrete solutions in agriculture, pastoralism, and land Management fields, critical sectors to food security and livelihoods in the target regions.

75. Component 3: Diversifying sources of income through IGAs to improve livelihoods of communities with a focus on women and youth: This component aims to strengthen the livelihoods of communities in order to improve their resilience and adaptive capacities. The priority actions planned are related to the implementation of Income-Generating Activities (IGAs) and environmental benefits related to agricultural production, livestock, and agro-pastoral product processing units for the benefit of vulnerable communities, particularly women, youth and people living with disabilities.

76. Component 4: Strengthened capacities for knowledge sharing and raising awareness of stakeholders and all beneficiaries at different levels: This component aims at addressing the gaps in capacities regarding CC adaptation at various levels in the project target zone as well as providing means to ensure dissemination of lessons learned through capacity building, communication and training. It will also contribute to the creation of a solid information framework and network integrating CC adaptation planning into decision making structures.

3. Project Components and Financing

Project Components	Expected Outcomes	Expected Outputs	Amount (USD)	%
Component 1: Improved water resources access and management for local communities	Outcome 1.1: Water mobilization infrastructure improved	Output 1.1.1: Water mobilization and storage capacities are increased	1,700,000.00	20%
	Outcome 1.2: Promotion of good water resource management practices	Output 1.2.1: Availability of water resources (quantity and quality) is improved and its use is rationalized	1,500,000.00	18%
Component 2: Improved resilience of ecosystems and livelihoods to climate change and variability	Outcome 2.1: Implementation of concrete adaptation measures for the preservation of oases ecosystems	Output 2.1.1: Oases ecosystems are rehabilitated and preserved	1,650,000.00	20%
	Outcome 2.2: Implementation of concrete adaptation measures for the preservation of agro-pastoral ecosystems	Output 2.2.1: Agro-pastoral ecosystems are rehabilitated and preserved	1,500,000.00	18%
Component 3: Diversifying sources of income through IGAs to improve livelihoods of	Outcome 3.1: implementation of concrete adaptation measures for women and youth	Output 3.1.1: Resilience and adaptive capacities of women and youth to CC are improved	1,500,000.00	18%

communities with a focus on women and youth				
Component 4: Strengthened capacities for knowledge sharing and raising awareness of stakeholders and all beneficiaries at different levels	Outcome 4.1: Stakeholders are mobilized and capacity built to CC impacts activities	Output 4.1.1: Practitioners, technicians, decision-makers and communities are sensitized and trained on CC issues and the integration of Climate Change Adaptation into planning	300,000.00	4%
	Outcome 4.2: Knowledge sharing and raising awareness is strengthened	Output 4.2.1: Project results and lessons learned are disseminated and shared	300,000.00	4%
Activities budget (A)			8,450,000.00 USD	
Project Execution cost (B)			794,000.00 USD	
Total Project Cost (C)=A+B			9,244,000.00 USD	
Project Cycle Management Fee charged by the Implementing Entity			756,000.00 USD	
Amount of Financing Requested			10,000,000.00 USD	

4. Projected Calendar:

Milestones	Expected Dates
Start of Project Implementation	January 2024
Mid-term Review	February 2026
Project/Programme Closing	December 2027
Terminal Evaluation	May 2028

PART II PROJECT JUSTIFICATION

A. Description the project components

77. The project aims to strengthen the resilience of ecosystems and communities living in the Ziyara and Dhaya oases region, to climate change through the improvement of water mobilization and management techniques as well as the implementation of concrete adaptation measures. For a result-based interventions, the project will be implemented following a participatory and inclusive community and inter-institutional approach which will integrate the knowledge management and set forth the appropriate channels to enable an active participation of all key stakeholders, including the project's beneficiaries during the entire cycle of implementation. The project will also strengthen the capacities and raise awareness of all the relevant stakeholders at different levels, for a more effective adaptation to CC.
78. The project proposes to use Integrated Water Resources Management approach to promote the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital oasis ecosystem. This approach is based on the understanding that water resources are an integral component of the ecosystem, a natural resource, and a social and economic good. Its basis is that the many different uses of finite water resources are interdependent. High irrigation demands and polluted drainage flows from agriculture, for example, mean less freshwater for household use and wastewater could be reused carefully to avoid polluting rivers and threatening the ecosystems. The IWRM approaches which will be adopted and mainstreamed will include, mainly:
- Integrating domestic, agricultural, and environmental needs into water catchment management and integrating water infrastructure, demand and quality among the users.
 - Encouraging participatory processes that include all groups of water users.
 - Emphasizing the role of women in water management.
 - Balancing economic efficiency, ecosystem sustainability, and social equity.
79. The project will also generate knowledge, document lessons learnt and best practices on climate resilience and enhancing sustainable land and water management of vulnerable communities as well as improving livelihoods in the face of climate threats. This will be further shared and adversely used to inform policy and serve as baselines for future similar /related interventions in the Adrar Region and holistically replicated to other regions.
80. The project is thus structured around four components. The planned activities as well as the expected outcomes and outputs for each of the components to achieve the project objectives are in line with the Adaptation Fund's strategic outcomes as presented in Part III. The section below outlines the project's components, outcomes, outputs and activities.

Component 1: Improved water resources access and management for local communities

81. Water, the most important natural resource in the oases. It is expected there will be an increase in the demand for water in the oases for both household and agricultural needs.
82. This first component aims to improve water management techniques as well as water pumping systems. In response, an oases resources management process this will be implemented to set up and rehabilitate small hydraulic infrastructures, to valorise innovative techniques of water irrigation and to promote good water resource management practices. The activities herein will be implemented in cooperation with national structures such as the Ministries of Hydraulics, Agriculture and Environment, etc.
83. Therefore, to enhance the resilience of the local communities, it is imperative to improve the water management and improve the water quality and availability/access and management which will be improved, through promoting and enhancing the irrigation infrastructure systems. The rehabilitation of small hydraulic infrastructures and promotion of solar powered will be promoted as well as establishment of community water management committees and provision of storage structures for potable water.

Outcome 1.1: Water mobilization infrastructure improved

84. The mobilization of water resources is essential for the retention of the economic and life balance. The project intends to improve the water mobilization infrastructure by developing water supply systems and storage capacities. Within this framework, an Integrated Water Resources Management (IWRM) approach where the process of collecting information on existing water structures and methods of water mobilization and storage will be carried out. The results of this study will be validated in cooperation with all relevant stakeholders and proposed solutions will be implemented by the executing entity.

Output 1.1.1 Water mobilization and storage capacities are increased

85. This output aims to increase water mobilization and storage capacities by rehabilitating small hydraulic infrastructures, promoting solar pumping techniques as well as constructing and equipping new water sources and storage infrastructures for potable water.
- *Activity 1.1.1.1: Establish Community Water Associations to manage the water resources*
 - *Activity 1.1.1.2: Rehabilitate and equip small hydraulic infrastructures and valorisation of innovative techniques of irrigation water saving*
 - *Activity 1.1.1.3: Promote/ establish micro-scale solar powered irrigation techniques.*
 - *Activity 1.1.1.4: Construct and equip new water sources protection and installation of storage infrastructures -potable water (tanks...)*

Outcome 1.2 Promotion of good integrated water resource management practices

86. This outcome aims to promote good water resource management practices in using an integrated approach where practices such as the rational use of water and provision of good water quality as well as the improvement of its availability is undertaken.

87. The constantly shifting hydrological cycles and the unpredictable precipitation linked to mainly rain influencing the increasing frequency and intensity of drought which are part of the climate change impacts that have impacted the increasing water scarcity among the communities in the target area. In order to cope these complex and interlinked water challenges, there is need to enhance the community's capacity to promote good water resources management and its associated services. This will also include stewardship of water use and the ability to manage them concurrently.

Output 1.2.1 Improved and rational use of available water resources (quantity and quality)

88. To improve water availability, eco-friendly water use practices will be promoted to manage excess water consumption, whether for domestic or agricultural purposes taking into account IWRM. In that purpose the project will establish community water management committees in the project sites and strengthen their water management and governance capacities. This output thus seeks to ensure there is increased access to water for use, reuse and recycling purposes where necessary in order to sustain agricultural production and ensure the food security in the oases.

89. Conservation and management of water resources in the oases will thus be based on an integrated management system for water resources and reduction of excessive water consumption and wastage. The improvement of water management will be undertaken on the three levels namely: the source, the channels and the preservation stage. To achieve this output the various activities will be carried out in the different sector areas of the Oases.

90. The project will also assess and share the most viable water solutions and develop model collection systems for rainwater in water tanks at public sites, such as schools and Center of Excellence in Environmental Management (CEEMA). These models will serve the communities as well as serve to showcase the solutions provided. Attention will be paid to sensitization around water demand and water use.

- *Activity 1.2.1.1: Asses the ground water occurrence and propose appropriate eco-friendly water management techniques:*
- *Activity 1.2.1.2: Establish gender responsive community water management committees in the project sites (40% women)*
- *Activity 1.2.1.3: Strengthen the capacities of community water management committees in water resources management and governance.*

Component 2: Improved resilience of ecosystems and livelihoods to climate change and variability.

91. The project area experiences prolonged drought, land degradation, desertification and loss of agricultural biodiversity lowering the resilience of Adrar ecosystem making it more vulnerable to shocks of climate change. This situation represents a challenge to achieving food security in this marginal region. In addition to the natural constraints of high temperatures, wind erosion, silting and sand dune movement, these areas are subject to inappropriate and costly agricultural and water management practices, which lead to soil deterioration, reduced crop productivity and income livelihood. In addition, there is a lack of knowledge, technologies and experiences that correspond to the current situation.

92. In that purpose and to ensure its existence and capacity to sustain the increasing needs of the communities, component 2 focuses on building the resilience of the oasian and agropastoral eco-systems to CC impacts and improving community adaptive capacities. This will be achieved through appropriate and concrete solutions in agriculture, pastoralism, and land Management fields, critical sectors to food security and livelihoods in the target regions.

Outcome 2.1: SLM Practices promoted for the preservation of oases ecosystems

93. Outcome 2.1 aims to propose and innovate new approaches to adapt to CC effects through the rehabilitation of the oases ecosystem in project area by promoting local agricultural practices adapted to the climate region and by preserving oases agro-system biodiversity. This will be through Sustainable land management (SLM) which opens up major opportunities for both the environment and the people who depend on it. SLM enables the communities to intensify existing land more sustainably, enhancing productivity without degrading land resources. It also ensures improved management of agro-ecosystem services across production systems, reduces pressure on natural resources and helps improve and sustain economic productivity and environmental sustainability.

Output 2.1.1 Adaptive Agricultural practices adopted for rehabilitation and preservation of ecosystems.

94. The project will promote improved cropping practices and techniques for better soil management, leading to more fertile soils and better water retention capacity, contributing to increased resilience towards the effects of CC on agriculture. Trainings will be provided and demonstrated on the field schools established. The practices will include crop rotation, improved planning of planting seasons, multiplication of local threatened species and cultivated varieties and the introduction of intercropping techniques.

95. This output aims to propose and innovate new approaches in order to enhance the adaptive capacity of the local communities to these effects through the establishment of Centers of Excellence in Environmental Management (CEEMA) and the promotion of agrosilvopastoral practices.

- *Activity 2.1.1.1: Develop Climate Adaptive Action Plans related to Adrar communities*
- *Activity 2.1.1.2: Establish Center of Excellence in Environmental Management (CEEMA)*
- *Activity 2.1.1.3: Procure inputs and equipment for the CEEMA and farmers accessing the facilities*
- *Activity 2.1.1.4: Creation of nurseries for the development of fodder, food and fruit crops*

Outcome 2.2 Agro-pastoral ecosystems are enhanced, adapted and preserved

96. Sustainable land management (SLM) opens up major opportunities for both the environment and the people who depend on it. SLM enables farmers to intensify existing land more sustainably, enhancing productivity without degrading land resources. It also ensures improved management of agro-ecosystem services across production systems, reduces pressure on natural resources and helps improve and sustain economic productivity and environmental sustainability. This will include promotion and dissemination of best agro-pastoral practices by the extension services and relevant personnel to enhance the ecosystem preservation and adaptability. It will also comprise activities related to effective afforestation of indigenous woody tree species, enhanced animal genetics inter alia. The practices will further be introduced and further cascaded through the CEEMA.

Output 2.2.1 Agro-pastoral ecosystem practices enhanced and adopted

97. This output will work on strengthening agro-pastoral ecosystems capacities through promoting the adoption of climate-smart practices. It aims to support the concerned stakeholders in establishing green belts for the stabilization of the sand dune movements (mechanical and biological) and the establishment of improved grazing areas as well as reduce siltation. The project will also support the restoration of degraded areas in the project zone through reforestation and soil and water conservation techniques. This phase will be initiated by conducting a baseline and capacity needs assessment of all actors to enhance and support participation in planning and decision-making.

98. Livestock production is an important source of livelihood for the communities in the Oases. It is a source of food, its products as well as a source of income. However, livestock productivity in the oases is challenging due to increasing temperatures, poor genetics, inadequate nutrition, poor reproductive management and animal diseases. This output seeks to address this situation by executing practical applications for improving livestock production.

- *Activity 2.2.1.1: Conduct baseline study and needs assessment*
- *Activity 2.2.1.2: Protect oases and agricultural lands through establishment/ strengthening of greenbelts*
- *Activity 2.2.1.3: Promote Afforestation and reforestation practices of degraded areas*
- *Activity 2.2.1.4: Value/ promote local SLM practices and techniques*
- *Activity 2.2.1.5: Promote animal husbandry and access to veterinary services*
- *Activity 2.2.1.6: Promote pasture management practices (gazing reserves...)*

Component 3: Diversifying sources of income through IGAs to improve livelihoods of communities with a focus on women and youth

99. The majority of the communities living in the project area still lives below the poverty line and is therefore very vulnerable, especially women and youth to CC impacts. This component aims to strengthen the livelihoods of communities in order to improve their resilience and adaptive capacities. The priority actions planned are related to the implementation of Income-Generating Activities (IGAs) and environmental benefits related to agricultural production, livestock, and agro-pastoral product processing units for the benefit of vulnerable communities, particularly women, youth and people living with disabilities.

100. The most important aspect of diversification, will also include the development of non-agricultural sources of income such as handicrafts and other productions. Trainings in identified topics will be provided by specialists, extension workers and project staff on demand and where possible, preference will be given to youth and women interested to develop small enterprises.

Outcome 3.1 Enhanced adaptive capacities and sources of income for communities' resilience through adoption of IGA

101. In outcome 3.1 it is proposed to strengthen the resilience of local communities through diversification of Income Generating Activities. The priority will be given to the most vulnerable women and youth individuals and groups in the target area.

102. It is thus critical that adaptation strategies targeting diversification of climate-resilient livelihoods be strengthened and diversified to increase resilience. Developing non-agricultural economic activities will assist to increase the resilience of the Oases' communities.

Output 3.1.1 Resilience and adaptive capacities of women and youth to CC are improved

103. The most important aspect of diversification will stem from Income-Generating Activities (IGAs) targeting activities such as market gardening, fishing, livestock, non-timber forest product processing, ecotourism, beekeeping products for the benefit of women and young people, inter alia.

104. To enhance the capacities of beneficiaries to sustainably engage holistically in the IGAs, they will be supported in the Selection, Planning, and Management (SPM) of Income Generating Activities. The Potential IGAs will be from activities where the beneficiaries (women and youth) can use and enhance skills they already possess with the emphasis of orientating them from the social welfare approach and towards the provision of business services. Further the SPM, the communities will be supported with inputs, simple tools for the identified and IGAs including (value addition of oases products, art crafts, beekeeping...).

- *Activity 3.1.1.1: Support Business planning and identification of alternative Income Generating Activities (IGAs)*
- *Activity 3.1.1.2: Introduce storage facilities, equipment and simple tools related to suitable IGAs*
- *Activity 3.1.1.3: Establish and support savings and credit co-operative society (SACCO)/co-operatives for the handicrafts & valorisation of agro-pastoral by-products*
- *Activity 3.1.1.4: Develop/upscale value chain market linkages for communities with key stakeholders and private sector*

- *Activity 3.1.1.4: Conservation and transformation of agro-pastoral products using clean processes (solar energy)*
- *Activity 3.1.1.5: Promote market gardening, aquaponics and fish farming specific to the oases*

Component 4: Strengthened capacities for knowledge sharing and raising awareness of stakeholders and all beneficiaries at different levels

105. Component 4 aims at addressing the gaps in capacities regarding CC adaptation at various levels in the project target zone. Moreover, it will provide means to ensure dissemination of lessons learned through capacity building, communication and training. This will further contribute to the creation of a solid information framework and network that integrates adaptation to climate change. Capacity building will enable the development and transfer of skills and abilities that will enable the communities to take decisions and actions for themselves, while the lessons learned and best practices that will come from the implementation of this project will be an essential aspect and deserve to be documented and disseminated combine policy-making and public engagement. This fourth component is structure under two outcomes, where the first one is addressing the capacity building needs and the second one will focus on disseminating the lessons learnt and sharing the best practices.

Outcome 4.1 Stakeholders are mobilized and sensitized through communication and capacity building activities

106. There is an urgent need in the target areas to better understand local CC impacts, and establish solid adaptation solutions. Stakeholder participation is a critical means of ensuring ownership and quality of decision-making for climate change adaptation. Methodological tools for integrating climate change issues into development, planning, programming, budgeting and monitoring-evaluation actions will be transferred to stakeholders to enhance the long-term sustainability and ownership of the CC adaptation interventions introduced.

Output 4.1.1 Practitioners, technicians, decision-makers and communities are sensitized and trained on CC issues and the integration of Climate Change Adaptation into planning

107. In response a sensitization strategy aiming to improve capacities, facilitate information sharing between stakeholders, and disseminate project results will be adopted. Knowledge materials will be developed, disseminated and made available, responding to demand and need of different stakeholder groups.

108. Thematic trainings, workshops and sensitization meetings will be conducted in the benefit of the concerned stakeholders (technicians, decision makers, etc.) to integrate CC challenges into planning. In this sense a capacity-building plan will be developed. It will include plans and modules for all trainings and capacity building sessions related to all activities of the project, including crop farming, small livestock rearing, water management, etc.

- *Activity 4.1.1.1: Conduct Knowledge Attitude and Practices (KAP) Surveys*
- *Activity 4.1.1.2: Develop capacity-building materials on CC adaptation planning for practitioners, technicians, decision-makers and communities*
- *Activity 4.1.1.3: Develop training modules on CC adaptation planning for practitioners, technicians, decision-makers and communities*
- *Activity 4.1.1.4: Design and develop communication and awareness strategy supported by the necessary materials (leaflets, posters, flyers) on CC issues and means of adaptation, taking into account indigenous knowledge*

Outcome 4.2: Knowledge sharing and raising awareness is strengthened

109. This outcome will help facilitate experience sharing and cross-learning of innovative adaptation interventions in the Project in oases. This will be achieved by generating knowledge on risk management and concrete adaptation actions. It will also consist in packaging it appropriately according to the target audiences/stakeholders and sharing it through electronic and print media and forums at regional, national, sub-national and local levels.

Output 4.2.1 Project results and lessons learned are disseminated and shared

110. The project will develop a strategy for dissemination and communication of the project activities and lessons learned to all relevant stakeholders. This output will further raise awareness as well as contribute to the creation of a solid information framework that integrates adaptation to climate change.

- *Activity 4.2.1.1: Design and develop communication and awareness strategy supported by the necessary materials (leaflets, posters, flyers) on CC issues and means of adaptation, taking into account indigenous knowledge*
- *Activity 4.2.1.2: Generate and package information dissemination materials on CC impacts related to the oases and adaptation actions in form as suitable for easy uptake (policy briefs, pamphlets...) adapted to the various stakeholder levels.*
- *Activity 4.2.1.3: Document and ensure effective dissemination of project achievements, lessons learned and best practices from project interventions*

B. Economic, Social and Environmental Benefits

111. **Economic co-benefits:** The project, under component 3 will directly contribute to enhance livelihoods of population in the targeted areas leading to the diversification of women's income through the development of income-generating activities and the promotion

of alternative productions (market gardening, poultry farming, handicrafts & valorisation of agro-pastoral by-products, etc.). Component 2 will contribute to setting up new innovative approaches to adapt to the effects of CC through sustainable land management (SLM) enabling communities to exploit existing land more sustainably and improve the productivity of crops without degrading land resources. It will also help to ensure better management of agro-ecosystem services in all production systems, reduce pressure on natural resources and contribute to improving and maintaining economic productivity and environmental sustainability. This will be facilitated by better access to water for irrigation and better management of water resources under component 1. The project, under component 4 will enhance awareness on CC, which will lead to better informed decision-making for production and for the protection of assets. Enhanced planning capacities, and the development of local adaptation plans will allow a better livelihood resilience. Additionally, the active participation of farmers and communities in vulnerability assessments and adaptation planning will strengthen the cohesion of communities and the coordination and integration between stakeholders.

112. **Social co-benefits:** The number of persons benefiting from the project in the region is estimated at 15,000. Capacity building activities will improve the skills, knowledge and operational capacities of about 5,000 farmers and breeders (50% women). Awareness-raising, training and education will help change the perceptions of local communities and other actors on how their actions can improve livelihoods, while also making oases activities economically attractive. A major benefit of this project will be the added social stability that it will bring to the region. The restoration of the oases' landscapes will be vital for supplementing governments' budgets and contributing to food security, hence reducing the burden on women as well.
113. **Gender-sensitive development impact:** Based on the initial gender analysis (Annex 3), beyond social inequalities, women in Mauritania play a very important role in the education of children and in socio-economic development. They also play a role in relaying information to households. As part of this project, capacity building and awareness-raising activities on climate risk adaptation practices will benefit both men and women as well as marginalized groups. The solutions proposed by this project addressing climate change impacts will consolidate and operationalize an enabling and transformative gender environment to reduce differentiated vulnerability, in particular for women, girls and children. The implementation of project activities will thus be based on gender mainstreaming to ensure gender equality. The project will contribute to (i) promote economic opportunities for women, including access to employment, assets and other productive resources; and (ii) Improving the voice, the autonomy and the representation of women. This will be undertaken through (i) initiatives to strengthen and develop women's leadership; (ii) advocacy campaigns on gender and rights of women and girls. Therefore, in line with the Adaptation Fund procedure, a detailed gender assessment analysis will be conducted at the full proposal stage and a Gender Action Plan (GAP) will be provided to ensure effective participation of women. and marginalized groups to planned activities.
114. **Environmental co-benefits:** (i) Sustainable management of water resources - This project will entail the implementation of adaptation measures such as; mobilization of the surface runoff and subsurface water, rehabilitation and proposal for improvements to traditional irrigation systems, highlighting relevant traditional practices in terms of water management and saving, (ii) Improvement or conservation of soil quality - Within the project activities, soil conservation and restoration are major actions to be undertaken for the enhancement of the oases ecosystem. Measures will be taken to reduce silting up and erosion as well as community-based dunes stabilization. In addition, actions aiming at regenerating the oases cover by means of the reintroduction of local, indigenous plants, and afforestation with local species, which are more resilient to climate change, are planned in the framework of component 2, (iii) Reduced Greenhouse gas emissions - The reduction and avoidance of GHG emissions that would otherwise be generated by traditional energy to meet the needs of communities for water extraction and infrastructures use in the intervention areas, will be ensured by the establishment of solar panels. Accordingly, it should also be noted that the project contributes to climate change mitigation efforts by meeting electricity needs with solar energy.

C. Cost-effectiveness of the proposed project

115. During the entire proposal phase, specific costs for each project activity, including cost effectiveness, will be supplied in detail (cost per person). Only once all project interventions have been completely identified is this possible.
116. A cost effectiveness analysis is a method used to compare the relative costs and benefits of different options or interventions. In the context of a food security project in Mauritania, a cost effectiveness analysis could be used to determine whether this project is a good investment and how it compares to other potential interventions.
117. There are a few steps that could be followed to conduct a cost effectiveness analysis of this food security project:
- Identify the objectives of the project: The first step is to clearly define the goals of the project and how they will be achieved. This could include increasing food production, improving access to food, or reducing malnutrition.
 - Define the interventions: Next, it will be important to identify the specific interventions that will be implemented as part of the project. This could include activities such as distributing seeds and tools to farmers, providing training on improved farming practices, or constructing infrastructure such as irrigation systems.
 - Estimate the costs: The third step is to estimate the costs associated with each intervention. This could include direct costs such as materials and labour, as well as indirect costs such as administration and overhead.
 - Estimate the benefits: The fourth step is to estimate the benefits of the interventions. This could include increased food production, improved access to food, or reduced malnutrition. It will be important to consider both the short-term and long-term benefits of the project.
 - Calculate the cost effectiveness ratio: Once the costs and benefits have been estimated, the cost effectiveness ratio can be calculated by dividing the total costs by the total benefits. This ratio can then be compared to the cost effectiveness ratios of other potential interventions to determine which option is the most cost effective.

118. By comparing the costs and benefits of different interventions, it is possible to determine which options are likely to be the most effective in achieving the project's objectives.
119. Without the project, strengthening resilience will continue in a fragmented and uncoordinated manner due to budget constraints and lack of adequate capacity to design and implement appropriate ecosystem protection measures. The priority needs of the communities and their degraded ecosystems will therefore not be met, resulting in the loss of productive capital, the impoverishment of women and young working populations, and environmental migration to urban centers.
120. With the project, the target areas and their most vulnerable communities will benefit from substantial support against the risks associated with climate change. Indeed, the project will produce direct and immediate benefits (such as avoiding loss of life, property and land) for the most vulnerable agropastoral and oases communities and areas by implementing climate change-sensitive physical interventions (e.g., natural infrastructure) in threatened hot spots. Because these interventions will be designed with projections for climate risk parameters in mind, they will produce local-level benefits for the target communities in both the near and long term. More than 10,000 people living in rural areas in the project's implementation zone will benefit indirectly in terms of improved food and nutritional security and income levels. 47% of Adrar population are women thus approximately 4700 women will be directly or indirectly involved and benefit from the project. Project activities will also encourage women's active contribution to social and economic activities through strengthened roles of women's groups and cooperatives (development of potential ability), extended access to markets and creation of women's networks. All these activities are considered to foster effective participation of women in the development of their communities.
121. As designed, the project lends itself to a paradigm shift, encouraging a systemic shift towards climate resilient development pathways and replication within other areas of the country and even the sub-region.
122. The project will therefore use a portion of Project funds to address this under Components 1 and 2, which together are allocated about US\$ 7 million:
- The first component tries to enhance water management strategies and pumping systems. In response, a procedure for managing oases resources will be established to construct and maintain modest hydraulic infrastructures, to value novel water irrigation methods, and to advance sound water resource management strategies. Activities for Component 1 will be carried out in collaboration with national organizations such the Ministries of Hydraulics, Agriculture, and the Environment, etc.
 - The outcomes 1.1 and 1.2 will assist in accomplishing the above goals. In accordance with the results and accompanying outputs, proposed tasks are also provided.
 - Long-term drought, land degradation, desertification, and a loss of agricultural biodiversity affect the project region. The scenario poses a significant obstacle to achieving food security and the eradication of poverty in this remote area. These locations are exposed to unsuitable and expensive agricultural and water management practices, which result in soil deterioration and decreased crop yield and revenue. These practices are in addition to the natural limits of high temperatures, wind erosion, and sand dune movement. Additionally, there are a paucity of skills, technology, and experiences that are appropriate for the current circumstance. The country has lost 86,000 ha of forest cover in the period from 2001 to 2016, which is equivalent to a 28 % decrease. One of the major reasons is cost and habits, as charcoal is still one of the main sources of energy used in Adrar. Reforestation areas would represent a feasible option in forestry areas and oasis areas to ensure their protection against erosion and other forms of land degradation. This phase will be initiated by conducting a baseline and capacity needs assessment of all actors to enhance and support participation in planning and decision-making.
 - Component 2 focuses on increasing community adaptation capacities and the resilience of oasian and agropastoral ecosystems to CC impacts. This will be accomplished through implementing relevant and practical solutions in the fields of agriculture, pastoralism, and land management, which are crucial to the target regions' livelihoods and food security. More than 5,000 farmers and breeders (more than 50% of them are women) will benefit from a direct support of this component under output 2.2 which is the approximate equivalent of 300\$ per farmers/breeders. This figure will be refined and finalized during the finalization of the full proposal.
 - The majority of people in the project area continue to live in poverty and are consequently extremely vulnerable, especially women and young people. The average annual income levels of the region are far below the poverty line. It is also revealed that the income of women-headed household is lower in Adrar region than that of men-headed household. The people in Adrar earn more money from vegetable (22%) and dates (20%). The production volume of date in the Adrar and Tagant (neighboring Wilaya of Adrar) represents close to 65% of the country's production volume. This element seeks to increase community livelihoods in order to increase community resilience and capacity for adaptation. For the benefit of vulnerable communities, especially women, youth, and people with disabilities, the priority actions planned relate to the implementation of income-generating activities in component 3 will promote economic benefits related to agricultural production, livestock, and agro-pastoral product processing units.
 - In the project target zone, component 4 seeks to resolve capacity shortages related to CC adaptation at various levels. Additionally, it will offer ways to guarantee the communication, training, and capacity building of lessons learnt.
123. Overall, a cost effectiveness analysis can be a useful tool for evaluating the relative costs and benefits of a food security project in Mauritania. By comparing the costs and benefits of different interventions, it is possible to determine which options are likely to be the most effective in achieving the project's objectives.

124. A full cost effectiveness of the project will be further developed at full proposal stage.

D. Consistency with development strategies

125. Mauritania ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 2017, the Kyoto Protocol in 2005 and the Paris Agreement on climate in 2017. The project also aligns with various pillars and objectives identified in Mauritania under a National Strategy and Action Plan for 2000-2004, along with subsequent reports on the country's progress. In addition, a new ministerial department responsible for the environment, the Direction de la Protection de la Nature has been established. The project is aligned with several strategic documents and policies such as the Mauritania's NDC (2021 – 2030), which aims to improve its adaptation to climate change through the protection and conservation of ecosystems, agriculture and food security. It is also directly linked to the country's climate change adaptation strategy to prevent and reduce the impacts of climate change affecting 'economic and social growth and development.

126. The table below lists the key development strategies/plans in Mauritania, their purpose and presents the project's consistency with the pillars of these documents.

Table 8: Consistency with national development strategies and plans

Strategy/Plan	Project's Consistency with the Pillars and Objectives of Mauritania's Framework Documents
Nationally Determined Contribution (NDC, 2015 revised in 2021)	The project is in line with the priorities of the revised NDC aiming at promoting climate-resilient development and creating sustainable green jobs. Specifically, the activities proposed under this NDC contribute directly to the following objectives stipulated by the project for the achievement of these priorities: i) adoption of Climate Resilient Agricultural practices (Output 2.1.1), ii). Development of sustainable green belts to limit sand dune movements and ensure the proper conduct of agricultural activities (Output 2.1.2), iii) Improvement of livestock production practices to increase the most vulnerable livelihoods' sources (Output 2.2.1)
President's Expanded Priority Program (PROPEP 2020-2023)	The Project addresses the program pillars focused on: The allocation of funds towards reforestation and sustainable forest management efforts as well as the creation of green jobs (Output 2.2.1). This program aims also to restore and ensure sustainable management of forest areas and degraded lands (Output 2.1.2) with a view to improving the livelihoods of local populations. In addition, it contributes to better pollution management and the promotion of waste recovery channels capable of creating sustainable jobs, especially for young people. These objectives are in perfect agreement with output Improvement of livestock production practices to increase the most vulnerable livelihoods' sources (Output 2.2.1)
Strategy for Accelerated Growth and Shared Prosperity - SAGSP (2016-2030)	The SAGSP promotes strong, inclusive and sustainable growth through fighting against environmental threats, climate change impacts, and the sustainable management of natural resources. These objectives are in perfect agreement with the project's component 1 that aims to adopt a better management and an eco-friendly water use, and component 2 which purpose is to improve the resilience of the oases' population through concrete adaptive agricultural activities and SLM practices.
National Food Security Strategy (NFSS) and its action plan (PNIA/SA)	The Project addresses the strategy pillars focused on ensuring a more balanced distribution of rural activities among the country's agro-ecological zones. The climate change dimension is included in its programme 1, which aims to combat the effects of climate change through the restoration/maintenance of soil fertility (Outcome 2.1) .
National Strategy for Sustainable Access to Water and Sanitation (SNADEA, 2016) for 2030	The Project addresses the strategy pillars focused on ensuring (i) knowledge, monitoring and protection of water resources; (ii) access to drinking water for as many people as possible (Output 1.2.2); (iii) improved access to water for agriculture and livestock (Output 1.2.1); (iv) improved access to liquid sanitation and hygiene and (v) improved governance of the sector (Output 3.1.1).
Rural Sector Development Strategy for 2025	The Project's component 2 address the pillars of the Rural Sector Development Strategy that focuses on promoting sustainable agriculture that contributes to the economic and social development of the rural sector; the protection and rehabilitation of agricultural land; local development with the involvement of the population, particularly young people and women.
National Strategy for Sustainable Development (NSSD)	The project is aligned with the NSSD pillars, as follow: The strategy builds on a common vision of a long-term sustainable development in the country through a strategic approach that integrates social, economic and environmental considerations. Its five priority pillars are: (i) strengthening institutional and political capabilities as well as effective management of environment and natural resources, (ii) provision of sustainable access to basic services as a strategic means to fight against poverty, (iii) support an integrated and participatory management for efficient use of natural resources, (iv) management of local and global environment in line with international conventions obligations (v) development and implementation of funding mechanism for its National Environmental and Sustainable Development Action Plan.
Fourth National Communication (2019)	The project is directly linked to the country's climate change adaptation strategy to prevent and reduce the impacts of climate change affecting 'economic and social growth and development. More specifically, the project responds to the objectives of the 4 th National Communication, which aims to (i) support populations to adapt to climate change impacts, in particular vulnerable groups, (ii) improve the resilience of actors to climate change risks and (iii) promote rational sustainable management of natural resources.

Nationally Determined Contribution – NDC (2021 - 2030)	The project is aligned with Mauritania's NDC (2021 – 2030), as follow: Through the NDC Mauritania aims to improve its adaptation to climate change through the protection and conservation of ecosystems, including wetlands, sustainable pasture management, biodiversity conservation, fisheries and aquaculture, housing and urban planning, agriculture and food security, including genetic improvement, health, water, coastal management, prevention of extreme weather events, and the development of a sustainable energy system (Component 1 and 2).
National Action Plan for Adaptation (NAPA, 2004)	The NAPA identifies, among other things, the establishment of, a sustainable and equitable management of natural resources and the improvement of cultural techniques as priority adaptation actions. In this context, the various interventions proposed by this project related to improving agricultural techniques for climate change resilient production directly contribute to several objectives of this pillar, namely the objectives of: i) increasing water mobilization and storage capacities to improve farmers' agricultural productivity (component 1), ii) adopting Climate Resilient Agricultural practices and Sustainable Land Management Practices to ensure a better quality and quantity of agricultural products (Component 2).
National Environmental Action Plan – NEAP (2004)	The Project addresses the NEAP (2004) pillars focused on the monitoring of environmental problems and challenges such as pollution and combating the effects of climate change.
National Agricultural Development Plan (NADP)	The Project addresses the NADP pillars focused on promoting modern, competitive and sustainable agriculture through the development of plant sectors with high growth potential (Component 2). The climate change dimension is included in programme 1, with the aim of intensifying and diversifying agricultural production; The programme 2 focuses on natural resources sustainable management.

E. Alignment with national technical standards

127. During the implementation of the project, the implementing entity (OSS) and the other executing entities must comply with the Adaptation Fund standards and policies such as the Environmental and Social Policy and the Gender Policy.
128. The project complies with the various laws relevant to the implementation of the project activities, such as environmental, agricultural and water resources laws. At this stage of the concept note, compliance with relevant technical standards is explained in detail. At the next stage, during the development of the full proposal, a more in-depth analysis of technical standards will be undertaken.
129. The table below lists the relevant national technical standards in Mauritania, their scope and their relevance to the AF principles as well as the project components.

Table 9: Alignment with national technical standards

Relevant national technical standards	Scope and relevance to the Project
Water Code (Law 2005-030) of 2005	<ul style="list-style-type: none"> Scope: Defines the legal regime of continental surface and underground waters excluding sea water, and in particular the rules related to the planning, use and preservation of water, and those related to the organization and operation of the public water service Relevant to Components 1 (Outputs 1.1.1, 1.2.1, 1.2.2), focused on monitoring of water resources. <p><i>Relevant to AF Principles 1 and 12.</i></p>
Law No. 2000-45 of July 2000, Framework Law on the Environment	<ul style="list-style-type: none"> Scope: Serves as a basis for harmonizing ecological imperatives with the requirements of sustainable economic and social development. In particular, it is a matter of guaranteeing 1) the conservation of biological diversity and the rational use of natural resources, 2) the fight against desertification, 3) the fight against pollution and nuisances, 4) the improvement and protection of the living environment, 5) the harmonization of development with the protection of the natural environment. Relevant to Components 2 focused on adopting concrete actions to improve adaptation to CC impacts and to ensure the protection and the sustainability of natural resources. <p><i>Relevant to AF Principles 1, 12, 11 and 15.</i></p>
Law 2007-055 of 18 September 2007, Forestry Code repealing and replacing Law No. 97-007 of January 20, 1997 on the Forest Code.	<ul style="list-style-type: none"> Scope: Composed of 84 articles divided into eleven (11) titles. It provides rules concerning the development of forests (Title II) forests clearing: organization and places of clearing (Title III). Relevant to Components 2 focused on SLM practices aiming to improve the quality and the fertility of soil as well as the protection of crops. <p><i>Relevant to AF Principles 1,6,11 and 12.</i></p>
Agropastoral Orientation Law (LOAP) of 2012	<ul style="list-style-type: none"> Scope: This law is an institutional framework conducive to agricultural sector development with a view to diversifying the national economy. Relevant to Components 2 focused on implementing agricultural practices adapted to CC risks as well as IGAs supporting populations to increase and diversify their income sources. <i>Relevant to AF Principles 1,5, 7 and 12.</i>

Law No. 97-006 of January 20, 1997 Repealing and Replacing Law No. 75-003 of January 1975 on the Code of Hunting and the Conservation of Nature.	<ul style="list-style-type: none"> • Scope: Defines natural resources conservation rules especially the fauna conservation and the management of protected areas. • Relevant to Component 2: i) output 1.2.1 focused on the reuse of salinity wastewater particularly to grow fodder for the livestock to improve the number of livestock and ensure the perpetuity of local breeds adapted to the climate of the region, ii) output 2.1.2. aiming to develop Sustainable Green belts that will protect agricultural areas. <p><i>Relevant to AF Principles 1,9,10 and 11.</i></p>
Law No. 2000-042 of July 26, 2000 on plant protection	<ul style="list-style-type: none"> • Scope: Defines the legal rules related to plants conservation in particular those concerning: i) phytosanitary protection of the national territory, ii) phytosanitary control of imports and exports, iii) control of the distribution and use of phytopharmaceutical products for the treatment of organisms harmful to plants and animals. • Relevant to Component 2 focused on using eco-friendly products (natural pesticides, re-use of oases waste, etc.) to ameliorate the agricultural sector products. <p><i>Relevant to AF Principles 1,10,11 and 15.</i></p>
Orientation Law No. 2010-001 of January 7, 2010 on land use planning	<ul style="list-style-type: none"> • Scope: Defines Land Use Planning Tools and Land Use Planning Structures. • Relevant to Component 2 focused on SLM practices to ensure the sustainability of a good quality soil resilient to CC effects such as dryness, water stress, etc. <p><i>Relevant to AF Principles 1, 5 and 15.</i></p>
Law No. 2000-044 of July 26, 2000 on the Pastoral Code	<ul style="list-style-type: none"> • Scope: Defines the concepts and principles of the pastoral space rational management and rules to govern all aspects of the pastoral activity in order to ensure the preservation and the promotion of pastoralism. • Relevant to output 2.2.1 focused on the improvement of livestock production and pastoralism practices. <p><i>Relevant to AF Principles 1, 2, 3,4, 5 and 15.</i></p>
Law No. 2004-024 of July 13, 2004 on the Livestock Code	<ul style="list-style-type: none"> • Scope: Defines rules for activities related to veterinary public health, animal health and production. • Relevant to output 2.2.1 focused on the improvement of breeding conditions and increasing access to veterinary services, especially for those where access is difficult. <p><i>Relevant to AF Principles 1, 2,3,4 and 5.</i></p>
Law No. 2010-042 of July 21, 2010 on the Hygiene Code	<ul style="list-style-type: none"> • Scope: Defines public hygiene rules: drinking water, environmental sanitation, waste management, special provisions relating to foodstuffs, hygiene of the premises, milk and dairy products, foods of plant origin, foods of animal origin, Relevant to all components and all outputs. • Relevant to all components and all outputs. <p><i>Relevant to AF Principles 1, 2,3,4 and 5.</i></p>

F. Project duplication with other funding sources

130. The project has an integrated scope with activities covering several sectors, namely water, environment, land, biodiversity, agriculture, etc. The project will therefore involve stakeholders from these different sectors in its implementation. Therefore, the project will clearly have impacts and complementarities but no duplication with ongoing projects/programs and initiatives in the region. Consequently, during its design at the full proposal stage, other initiatives already implemented, planned or underway in the region will be taken into account. In addition, a strong participatory approach and consultations with all stakeholders working on natural and water resources, agriculture and climate change issues in the area will help emphasize synergies and complementarities and avoid overlap and duplication of projects or funding sources.

131. The table 10 below lists potential projects (past and ongoing) in Mauritania, their purpose and possible synergies with this project.

Table 10: Synergies with national projects/programmes

Project/program	Objectives	Status	Funding source	Lessons learned/Possible synergies with the proposed project
<p>Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security Project.</p> <p>Implementing Agency: World Food Programme</p> <p>Budget: 7,800,000 Million USD</p> <p>Duration: 2014-2019</p>	<p>- The objective of the project is to enhance the resilience of vulnerable communities to the effects of climate change on food security</p>	Closed	Adaptation Fund	<p>Complementarity. The proposed project will build on good practices and lessons learned in terms of adaptation measures targeting combating land degradation, water and soil conservation, and improving the livelihoods of vulnerable communities through the implementation of income-generating activities.</p> <p>The AF project has developed a technical package of adaptation measures considered as a technical benchmark for the Ministry of Environment and Sustainable Development (MoESD) and other initiatives in the country, combining activities for ecosystems protection and the improvement of the livelihoods of poor and vulnerable populations. These measures include dune fixation techniques, reforestation, establishment and management of grazing areas, water and soil conservation, promotion of semi-intensive poultry farming, development of community market gardening, diversification of income-generating activities, mobilization and management of water resources, use of solar energy, introduction of family tree farming, etc.</p> <p>The proposed project can also build on the successful experience of the AF project by relying on local NGOs as executing partners to carry out the whole process related to the identification and implementation of IGAs as well as sensitisation and monitoring of project activities at local level.</p>
<p>Improving Climate Resilience of Water Sector Investments with Appropriate Climate Adaptive Activities for Pastoral and Forestry Resources in Southern Mauritania (REVUWI)</p> <p>Implementing Agency: African Development Bank</p> <p>Budget: 20,930,000 USD</p> <p>Duration: 2014-2021</p>	<p>- The objective of the project is to build climate resilience in vulnerable pastoral and forest areas by providing support for planning, financing and implementing both as appropriate (an ecosystem and sectoral approach) to climate change adaptation through effective knowledge and technology transfer mechanisms including capacity building, knowledge support and concrete, on-the-ground demonstration in arid/semi-arid ecosystems" in the southern Wilayas of Mauritania</p>	Closed	Least Developed Countries Fund	<p>Complementarity.</p> <p>The proposed project can build on the REVUWI project, particularly under Component 1, with regard to the achievements in terms of setting up water infrastructure and water mobilisation as well as water and soil conservation techniques.</p>

<p>Oases Sustainable Development Programme in Mauritania (PDDO). Budget: 38,660,000 USD Duration: 2003-2014</p>	<p>- The programme inherited a large body of knowledge and experience from the Oases Development Project phases I and II, on which it based its own actions for oases development and the empowerment of oases communities – particularly by improving livelihoods and production conditions. The key to achieving this result was the implementation of a participatory approach to encourage beneficiaries to build their own planning and management capacities.</p>	<p>Closed</p>	<p>IFAD</p>	<p>Complementarity. The proposed project will build on the integrated approach developed under the PDDO, combining improved water and energy solutions with capacity building for the promotion of date palm cultivation, which forms the basis of the oases’ economies. The PDDO has inherited an important base of knowledge and experience on which its interventions have been built, including i) the promotion of the effective participation of oases populations, especially women and youth, organised into Association for the participatory management of oases (APGOs), in the community and local development process; ii) the strengthening of the institutional framework at the oases level; iii) the promotion of the sustainable exploitation of the productive potential of the oases; and iv) the development of a network of privately managed local financial services. The proposed project will build on these achievements and rely on the APGO to implement the planned activities in the project area.</p> <p>It will also build on the PDDO initiative, which has led to the establishment of a microfinance facility tailored to the needs of the poor and the creation of a Community Investment Fund (CIF) that has provided concrete financial support to actions arising from the local participatory planning process.</p>
<p>Climate change adaptation and livelihoods in three arid regions of Mauritania Implementing Agency: UNEP Budget: 20,666,210 USD Duration: 2018 -</p>	<p>- The objective of the project is to strengthen the adaptive capacity and ultimately climate-resilience of communities and government in the arid Mauritanian Wilayas of Adrar, Inchiri and Trarza through the introduction of ecosystem-based adaptation (EbA) approaches. The project will focus on improving the management of water and other natural resources in the climate-vulnerable target communities. Climate impacts on these natural resource-dependent communities will be disrupted using a suite of innovative on-the-ground interventions implemented at the plot and community levels.</p>	<p>Under implementation</p>	<p>GEF</p>	<p>Complementarity. The two projects will be complementary.</p> <p>The GEF project will work with existing institutional structures within the Ministry of Environment and Sustainable Development (MoESD) at the central and regional levels to increase their capacity for climate change adaptation, particularly ecosystem-based adaptation (EbA) in arid zones, building on synergies with government agencies dealing with dryland issues.</p> <p>The proposed project will scale up the ecosystem-based adaptation approach and innovation techniques for the benefit of the communities in the project area and create the necessary synergies with the GEF project especially with regard to capacity building activities of the component 4, targeting government technical departments at different levels to better target funding and beneficiaries.</p>

<p>Mauritania and Niger - Second Regional Sahel Pastoral Support Project (PRAPS II): Additional Financing</p> <p>Implementing Agency: Ministry of Livestock and Animal Production, Islamic Republic of Mauritania</p> <p>Budget: 42M USD (Mauritania)</p> <p>Duration: 2021 - 2027</p>	<p>- This project aims to scale up emergency investments in food security and resilience interventions in response to food security crises facing pastoralists and agropastoralists in several regions of both countries Mauritania and Niger. Building on the achievements of the first phase of PRAPS (PRAPS-I, 2015–2021), PRAPS-II is one of the core regional operations addressing the drivers of fragility and conflict in the Sahel while bolstering the livelihoods of a vulnerable population.</p>	<p>Under implementation</p>	<p>The World Bank</p>	<p>Complementarity.</p> <p>In Mauritania, the project will focus on the intensification of immediate and medium-term activities within the framework of PRAPS-II objectives, giving priority to the southern areas of the four Wilayas bordering Mali: Guidimakha, Assaba, Hodh el Gharbi and Hodh el Chargui, which implies that there will be no duplication with the proposed project.</p> <p>However, given the long experience of the first phase of PRAPS and the results achieved in terms of sustainable management of landscapes, improvement of the economic and social inclusion of women and young people, sustainable management of hydraulic infrastructures, production fodder and the promotion of income-generating activities in pastoral areas, the proposed project could create the necessary synergies in order to scale up proven good practices in the project intervention area in Adrar.</p>
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G. Learning and knowledge management component to capture and disseminate lessons learned

132. In a more specific way and based on project planned activities the knowledge management in the framework of the Project is an important element to which a whole component has been dedicated (Component 4). This component will form part of a community-wide awareness raising campaign that will also highlight the benefits of sustainable NRM and water use to better adapt to the challenges posed by climate change. This will include the benefits of the sustainable agricultural practices, techniques and technologies being promoted by the project. Under this component the project will furthermore generate and disseminate project information, experiences and results on an ongoing basis.
133. The learning and knowledge activities planned in the fourth components are involving both policy and decision makers, private sector, local and international NGOs as well as local communities. The project will develop a robust Monitoring and Evaluation (M&E) system, which focuses on application of evidence-based lessons in improving or influencing implementation within the project and amongst actors engaged in similar work. It will further integrate the participatory, M&E system into an 'adaptive management / planning to ensure that lessons learnt, best practices, and/or new needs are met in an ongoing and evolving manner during implementation.
134. The aspect of knowledge management will thus be integrated into the logical framework and will have corresponding activities, outputs, and progress indicators within each component and at Project level. In support of knowledge management, learning, and sharing/exchanging experiences, the Project will dedicate an M&E resource person/unit routinely monitor/evaluate Project progress at component level and at overall Project level by comparing actual outputs and outcomes to the planned and expected targets
135. Further the above, annual progress reports of the project, as well as annual reports of the EE will be shared with the relevant stakeholders and authorities. A communications plan will be established in the inception phase of the project and managed in association with the knowledge management plan, will contribute to ensure active knowledge dissemination at all levels.
136. Aside from the awareness raising and capacity building activities, the project will support the generation and documentation of case studies, good practices, challenges and lessons learned. This documentation can facilitate and support the design of future projects, for scaling-up of project interventions, for adoption of new practices by communities and local authorities, and for the informing of policies and strategies at various levels, from local to regional. The generation and documentation of the above will enable the production of appropriate awareness materials.
137. The project will organize open events such as the project launch and closure meetings and will participate in national forums on CC to facilitate awareness raising and sharing of lessons learned to a wide spectrum of relevant stakeholders and audiences

H. Consultative process.

138. This project is an initiative of SOS OASIS Mauritania with the support of the Ministry of Environment and Sustainable Development (MEDD). The consultative process took place in two phases. A first phase was carried out in August 2019 as part of the monitoring of the mid-term implementation of the Strategy for Accelerated Growth and Shared Prosperity (SAGSP) through a thematic workshop organized by the Management of SAGSP in collaboration with the Wilaya of Adrar, which made it possible to assess the vulnerability of the main development sectors and community groups and to prioritize the most vulnerable areas that require urgent interventions in the form of resilience projects in order to improve living conditions populations and agro-ecosystems. This has retained the two poles of Dhaya and Ziyara as the most vulnerable areas of the Adrar region which are the subject of this project proposal.
139. The second phase of the consultative process took place in August 2022 at Atar level and in the two selected poles of Dhaya and Ziyara. The project concept note has been reviewed and discussed at different levels of government to ensure that the proposed activities are fully aligned with government priorities and can be realistically and cost-effectively undertaken within the timeframe and with the proposed resources.
140. The consultations consisted of:
- An institutional meeting at Atar level chaired by the Wali of Adrar and bringing together representatives of the region and the regional technical services concerned (Ministry of Agriculture, Ministry of Environment and Sustainable Development, Ministry of Livestock, Ministry of Hydraulics and Sanitation, other departments),
 - A meeting with the Deputy Mayor of Tawaz with the participation of councillors and technical services members of the Communal Consultation Committee (CCC) of Tawaz.
 - Field visits to hold consultation meetings and focus groups with the populations of the main villages of Ziyara and Dhaya.
141. These meetings highlighted a number of environmental, economic and social issues potentially linked to climate change and provided a rich indication of the villages' potential commitment, knowledge and capacity to learn and implement, as well as an idea of potential actions to be taken to address the impacts of climate change and food insecurity in the project intervention area.
142. During the development of the full funding proposal, broader engagement with stakeholders will continue. Non-governmental organizations and civil society groups, particularly those involved in water and agro-pastoral projects, will also be consulted. In addition, further consultations will be conducted at the village level, particularly with women (including those heads of households) and youth, to ensure that project activities meet their needs and contribute to empowerment of women and youth and reducing their

vulnerability to climate change. Soil and water resource management technologies and agricultural practices that are appropriate and climate resilient will also be identified in consultation with technical experts and local communities in the region.

143. The table below provides a summary on the 2 stages project' consultation process

Table 11: Consultation process summary

Location and Date	Consultation topics	List of attendees	Consultation Outcomes
Atar 10-12/08/2019	<p>SCAPP Consultation process workshop</p> <p>Objective: prioritizing the most vulnerable areas to climate change in the Adrar region.</p> <ul style="list-style-type: none"> Update the diagnosis of the most important sectors for the Wilaya; namely agriculture, livestock, environment, and water resources; Identify the most vulnerable areas to shocks in order to propose projects to improve the resilience of populations for better adaptation to climate change 	<ul style="list-style-type: none"> Representatives from central public services, regional/local public services, regional/local elected officials, civil society (CS) representatives from local communities, private sector representatives from the Wilaya 60 participants (49 men and 11 women). 	<ul style="list-style-type: none"> Identification of the Ziyara and Dhaya clusters as the most vulnerable areas of the Atar Moughataa in terms of food and nutrition insecurity, the state of the environment and their dependence on water and soil resources.
Atar, 8 August 2022	<p>Institutional meeting in Atar:</p> <ul style="list-style-type: none"> Provide stakeholders with information on the project development process. Present the economic, environmental, and social assessment process, including its contribution to building the resilience to climate change of the communities in the 2 poles; Identify the main concerns and expectations of the project's stakeholders in order to initiate ownership for sustainability. Identify the most appropriate means of communication to facilitate stakeholder involvement in later stages of the process. Identify and collect existing data of interest to the process 	<ul style="list-style-type: none"> Representatives from the Wilaya, the region, and technical services (MoAgri, MoESD, M. of Livestock, M. Of Hydraulics and Sanitation, other departments) 18 participants (14 men and 04 women) 	<ul style="list-style-type: none"> Stakeholders are informed about the project development process. The first results of the economic, environmental and social assessment of the intervention areas and communities are presented, Ownership of the project by the regional authorities is ensured Stakeholder engagement for full involvement in the later stages of the project development process Commitment to facilitate contacts for the collection of existing data relevant to the project development process.
Municipality of Tawaz, 9 August 2022	<p>Institutional meeting in the municipality of Tawaz</p> <ul style="list-style-type: none"> Presentation and discussion of the environmental, economic and social diagnosis potentially linked to climate change on which the intervention of this project is expected. Feedback from stakeholders on their concerns Identify solutions to (i) strengthen the adaptive capacities of populations; (ii) improve the resilience of oasis agro-ecosystems and sustainably address the challenges of structural and cyclical poverty in the project areas. 	<ul style="list-style-type: none"> Deputy Mayor of Tawaz, councillors and technical services members of the Tawaz Community Consultation Committee (CCC). 11 participants (07 men and 04 women) 	<ul style="list-style-type: none"> Identification of environmental, economic and social issues related to climate change Synthesis of the concerns of different stakeholders Proposal of a set of solutions to improve the resilience of oasis agro-ecosystems and vulnerable communities in the two poles of Ziyara and Dhaya.
Ziyara, August 10 th 2022	<p>Focus group consultation meeting</p> <ul style="list-style-type: none"> Presentation and discussion of the environmental, economic and social diagnosis potentially linked to climate change on which the intervention of this project is expected. Feedback from communities' members, particularly women, on their concerns Identify solutions to (i) strengthen the adaptive capacities of populations; (ii) improve the resilience of oasis agro-ecosystems and sustainably address the challenges of structural and cyclical poverty in the project areas. 	<ul style="list-style-type: none"> Traditional chief, President of the cluster, and representatives of the populations of Ziyara coming from the villages of Mintevaa, Jreiv, Eguemoun, Nguermellil, Loudeyatt and Oueinet rvayeg villages 23 participants (8 men and 15 women) 	<ul style="list-style-type: none"> The main problems and concerns of community representatives, especially women, are identified and prioritised Areas of project support are identified A list of solutions to the problems posed is drawn up and proposed for consideration in the project design A full commitment from the communities to participate in the next stages of project design and subsequent implementation

<p>Ziret Elhella, (Dhaya cluster) August 12th 2022</p>	<p>Focus group consultation meeting</p> <ul style="list-style-type: none"> • Presentation and discussion of the environmental, economic and social diagnosis potentially linked to climate change on which the intervention of this project is expected. • Feedback from communities' members, particularly women on their concerns • Identify solutions to (i) strengthen the adaptive capacities of populations; (ii) improve the resilience of oasis agro-ecosystems and sustainably address the challenges of structural and cyclical poverty in the project areas. 	<ul style="list-style-type: none"> • President of the Dhaya cluster and representatives of the populations of the villages of Dhaya, Tizegrez, Ziret Elhella, Taryouvet, Doubai, Rkeina • 21 participants (5 men and 16 women) 	<ul style="list-style-type: none"> • The main problems and concerns of community representatives, especially women, are identified and prioritised • Areas of project support are identified • A list of solutions to the problems posed is drawn up and proposed for consideration in the project design • A full commitment from the communities to participate in the next stages of project design and subsequent implementation
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144. The consultation process has been annexed (*annex 2*) with the list of attendees and an in-depth consultation shall be undertaken upon approval of the CN.

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

145. Mauritania is particularly vulnerable due to its geographical location as a Sahelo-Saharan country. The country is subject to high climate variability and increasingly frequent and intense climate extremes. The main contributors to GDP, namely agriculture and livestock, are affected by these climatic hazards. All these factors expose Mauritania to an even higher level of vulnerability as it belongs to the group of least developed countries (LDCs). Farmers and herders, who constitute the majority group, suffer considerable damage during droughts and floods. These multiple challenges are considerable and complex. The multiplicity of challenges means that the resources needed for Mauritania to cope with these climate hazards are largely insufficient. Indeed, Mauritania's financial needs, which are estimated in the INDC at several billion dollars, exceed the country's capacities.

146. Therefore, to achieve the objectives set out in the NDC, Mauritania expects a lot from its external partners. This is why the unconditional share of the NDC covered by own resources is so low, particularly the part reserved for the water sector in the area.

147. In this context, the resources of the AF are crucial to overcome the obstacles that hinder the Government of Mauritania's ability to increase resilience to the impacts of climate change in the Oases holistically.

148. The justification for funding requested can be broken down according to project components as follows:

Component 1: Improved water resources access and management for local communities

Baseline Scenario:

With longer dry seasons and increasingly erratic weather patterns in the region, there is a growing need to adopt water-efficient and climate-resilient practices. Access to technologies such as irrigation, water infrastructure, processing equipment and storage is highly limited, inhibiting food processing and storage capacity, which is a constraint that is amplified by CC impacts.

Additionality (with AF Funds):

With the support of AF funds, the project will enable the introduction of concrete and innovative adaptation interventions, such as: creation and improvement of water infrastructure, including rainwater harvesting, promotion of solar water pumps and small-scale irrigation systems, creation and/or strengthening of water management and storage facilities that will serve to better manage and conserve water and related infrastructure. In addition to these tangible benefits, the establishment of community structures will strengthen social cohesion and the effectiveness of extension services.

Component 2: Improved resilience of ecosystems and livelihoods to climate change and variability

Baseline Scenario:

Smallholder farmers and communities face reduced agricultural production as the frequency and magnitude of CC impacts increase. They have limited access to new climate-resilient practices, insufficient and inadequate access to new information, training or extension services that focus on climate resilient agriculture inputs and results. Extension services in target areas are understaffed and have limited capacity in Climate Change Adaptation (CCA) practices related to agricultural options and inputs.

Additionality (with AF Funds):

With the support of AF funds, the project intends to undertake an assessment of the impacts of climate change on agricultural sector. The main results will be used to improve the national and sub-national agricultural strategies and practices by integrating the climate change dimension and indicating possible climate adaptation solutions.

To this end, best practices will directly be scaled-up in farmers' fields, by providing direct technical assistance to farmers, by sharing high-quality knowledge on biological processes and practices with farmers, by encouraging participatory development of locally adapted practices with farmers and experience exchange among farmers, and by providing access to tools and equipment. Training modules will be provided through practical and theoretical lessons within multiple workshops that bring together stakeholders, technicians and farmers, these workshops will cover mainly the promotion of afforestation and reforestation practices of degraded

areas, the promotion of local SLM practices and techniques, the enhancement of adapted animal husbandry practices and access to veterinary services, etc.

Component 3: Diversifying sources of income through IGAs to improve livelihoods of communities with a focus on women and youth

Baseline Scenario:

Smallholders have no or limited access to credits or grants, nor have sufficient capacities to manage those. Communities and farmers are not organized to collectively tackle the challenges ahead. While challenges in the target area are similar, a large extent resources are shared and co-intervention on the different steps of the value chain can improve the productivity, the quality of products and the revenues of many farmers at the same time, there is very limited coordination and cooperation which could benefit the population groups. Although initiatives are taken, by the government to mainstream efficient conservation agricultural products, the reach remains limited.

Additionality (with AF Funds):

With the support of the AF funding, the project will establish cooperative associations which will strengthen their organizational and technical capacities of farmers and stallholders. These organizations will provide farmers with benefits such as collective gains from aggregated input purchases, organized processing and storage, and collective marketing of products. They will also benefit from the administrative and legal capacity to access credit, and an organizational structure that allows for effective extension services.

The project will increase opportunities for farmers to participate in different types of economic activities of the agricultural value-chain. For this, it will support the establishment of associations and cooperatives, so that, farmers will be able to improve cost/benefit aspects of their products (e.g. through equipment access). This approach to integrate project activities along the value-chain will create new synergies of collaboration and ownership, which will contribute not only to the sustainability of the project results but also improve the profitability of agricultural value chain.

Component 4: Strengthened capacities for knowledge sharing and raising awareness of stakeholders and all beneficiaries at different levels

Baseline Scenario:

Awareness on CC and its impacts is very low, and there is lacking correct understanding and interpretation of CC messages and data. National and sub-national level authorities have limited staff, capacity or financial means to mainstream CC information to its populations. In Mauritania, curriculums in schools don't include sufficient CC education. Local authorities have limited capacities and knowledge on CC impacts, assessing vulnerabilities and developing appropriate adaptation interventions. Population groups face the same challenges, have similar socio-economic situations, access the same natural resources and their declining services, and experience impacts of CC equally, especially affecting their agricultural production, and the interrelated food security. People in the target area, share cultures, habits, productions and income options, and they share markets, especially food-related markets. However, there is limited interchange of experiences between, nor coordination of interventions that can address issues that affect the different population groups. CC impacts have no borders, and certain phenomena require a coordinated response, such as increasing transhumance and increased frequency of drought periods. It can be expected to take years if not longer for communities within the target areas to be reached with sufficient knowledge and awareness for populations undertake the necessary actions to adapt to the changing conditions.

Additionality (with AF Funds):

With support of the AF, this project will improve the development, strengthening and institutionalization of CC awareness and adaptation capacities through the establishment CEEMA that will be strategically established in the target area, and which will be a permanent structure for coordinating awareness raising, capacity building, adaptation planning and learning and knowledge management. The project will support the capacity development of the center staff, local authorities and communities in CC awareness raising, vulnerability assessment and participatory planning of CCA interventions. The project is aiming to reach all communities through a combination of CC awareness process. This will be ensured through the development of training modules on CC adaptation planning for practitioners, technicians, decision-makers and communities as well as a communication and awareness strategy supported by the necessary materials (leaflets, posters, flyers) on CC issues and means of adaptation, taking into account indigenous knowledge.

Awareness will further be raised by community awareness campaigns, face-to-face and through mass media as well as effective dissemination of project objectives and achievements, lessons learned and best practices from project interventions. Moreover, initiatives will be focused not only on theoretical understanding, but on practical solutions, showcasing examples in a participatory manner and continuous CCA developments at the CEEMA.

149. In conclusion, it is essential to mention that the objectives of this project can be achieved solely using the funds allocated by the Adaptation Fund and there will be no need for additional funding from other donors. The project aims to respond to the following theory of change as part of the concrete adaptation actions related to project funding justification.

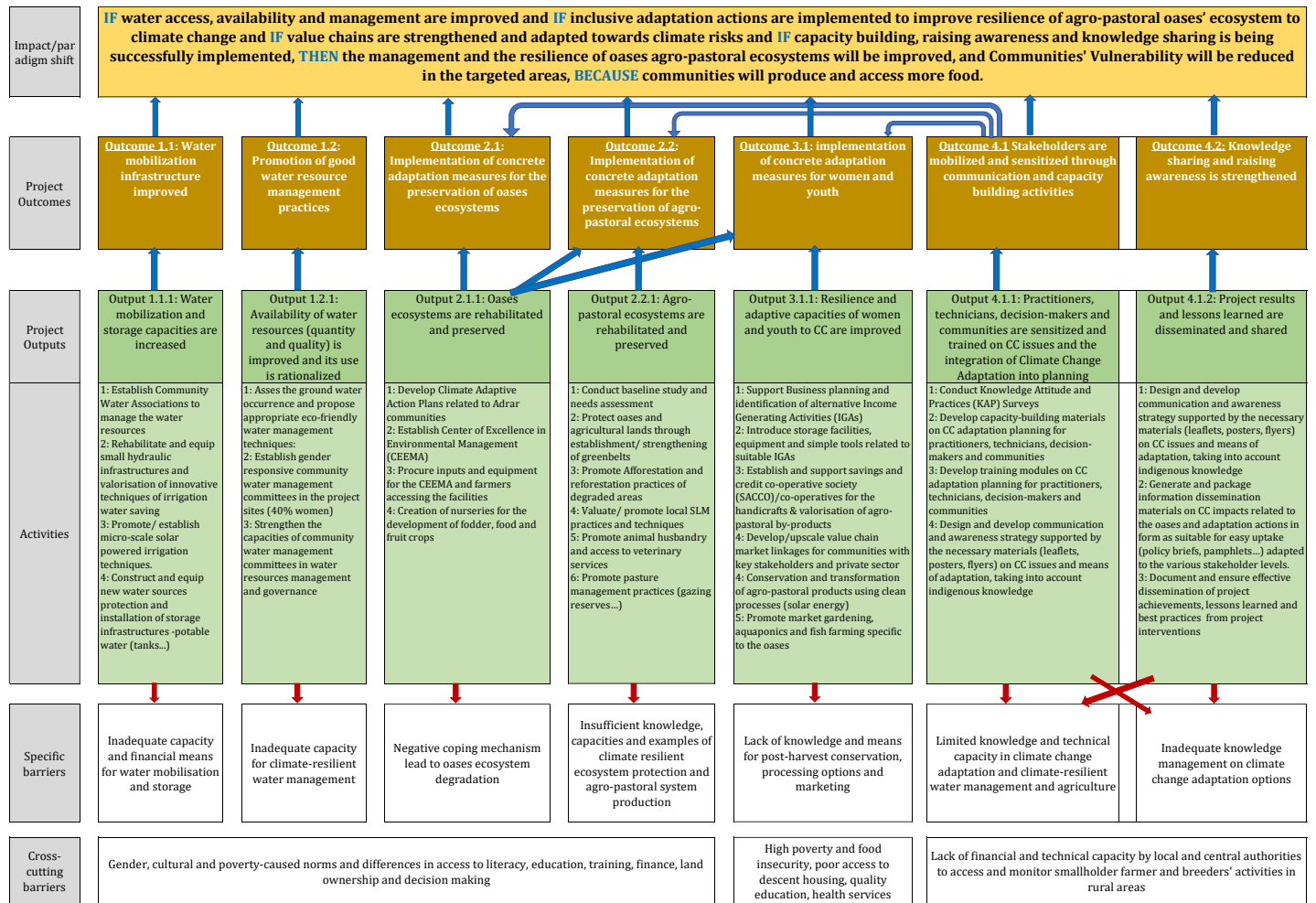


Figure 8: Project theory of change

J. Sustainability of the project outcomes

150. The sustainability of the project stems from the participatory approach promoted throughout all project activities, that allow local communities and authorities to build ownership of the project and help ensure lasting results. The proposed project was designed with the intention to build the foundations for scaling up the interventions and for replication in other areas of the country with similar agro-ecological and climate conditions and vulnerabilities, and similar socio-economic conditions and needs. The project innovation lies in the use of climate-resilient agricultural techniques, including for oases, soil and water conservation and the introduction of solar pumping. These climate friendly interventions will contribute ensure social stability for the vulnerable population of Adrar region by creating incentives for oases rehabilitation and soil conservation, as well as diversification of sources of income.
151. The project has strong governmental and civil society endorsement and support, in the sense that the proposed project is designed through consultations and involvement of NGOs to promote ownership of the project and the effectiveness of its results.
152. The project sustainability will be further strengthened through the training programmes that will be implemented for which a whole component is dedicated. This highlights a major strength of the proposed investments, namely that they will be community-driven and owned. This builds sustainability and social development related to climate-resilient agriculture, natural resource management, ecosystem resilience and water management.
153. Environmental Sustainability - The project will contribute to reduce the vulnerability of oases and secure resources and local livelihoods. It will entail the implementation of adaptation measures such as; mobilization of the surface and subsurface water and promotion of water efficient water saving technologies in oasian zones. Within the project activities soil conservation and restoration are major actions to be undertaken for the enhancement of the oases ecosystem. Measures will be taken to reduce silting up and erosion as well as dunes stabilization. In addition, actions aiming at regenerating the oases cover by means of the reintroduction of local, indigenous plants, and afforestation with local species, which are more resilient to climate change, are planned in the framework of component 2.
154. Institutional Sustainability - The Ministry of Environment and Sustainable Development, which will support the implementation of the project, has already benefited from capacity building in several areas related to climate change from a number of projects and initiatives benefiting the country. SOS Oasis, which will be directly responsible for the implementation of the project, with its experience of more than 20 years in the region together with other NGOs operating in the Adrar region will benefit from a capacity building programme through component 4 which will enable them to put in place adequate strategies to ensure the sustainability of the project results and the scaling up of good practices resulting from the project implementation. The government institutions and

NGO staff will ensure the sustainability of the project's results beyond its life cycle, as they are permanent. The project will facilitate and support leadership at the community level, which will be encouraged to organize itself into Associations according to the model set by the PDDO project, and to obtain political support from local authorities and traditional leaders so that community members see the value of the project's interventions, thus enabling them to take ownership and support the project.

155. *Social Sustainability* - Awareness-raising, training and education will help change the perceptions of local communities and other actors on how their actions can improve livelihoods, while also making oases activities economically attractive. A major benefit of this project will be the added social stability that it will bring to these regions. The restoration of the oases' landscapes will be vital for supplementing government health budgets and contributing to food security, hence reducing the burden on women as well.

156. *Economic and Financial Sustainability* - The project will be promoted through supporting existing and/or new community groups to ensure economic sustainability especially of the targeted communities, smallholder farmers and pastoralists. The project will support women and youth groups with income generating activities, support improved crop and livestock production with improved and drought-tolerant crop varieties and animal breeds.

K. Environmental and social impacts and risks identified as being relevant to the project.

157. This project was developed in compliance with the 15 environmental and social (E&S) principles of the Environmental and Social Policy of the Adaptation Fund. A preliminary E&S assessment was conducted indicating that the project is likely to be classified under Category B of risk. The results are presented in the table below.

158. A detailed E&S impact assessment, including mitigation measures and E&S management framework, will be conducted during the full proposal development phase.

Table 12: Preliminary E&S assessment

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		X Further consultations and detailed assessments will be done during the development of Environmental and social impact framework (ESMF) for the Project at full proposal stage. The final project design will be compliant with all relevant national laws after extensive consultations with national and local stakeholders as well as development of the detailed EMSF for the project at local level.
Access and Equity		X The project will take a number of transparent steps that will help ensure that the benefits of the project are being distributed fairly with no discrimination nor favouritism. Project targeting will comprise targeting criteria based on gender and age quotas. The project will advertise broadly through the mass media (radio, social media, town hall and village meetings, workshops etc.) for the implementation of activities.
Marginalized and Vulnerable Groups		X Marginalized and vulnerable groups including internally displaced people and refugees, women and youth will be consulted during the proposal development process to ensure that their identified threats, priorities and mitigation measures are reflected. The project will empower vulnerable groups to make decisions on concrete adaptation actions, valuing their traditional and local knowledge. This project will encourage women, and youth to choose adaptation activities in a transparent and participatory manner. Additionally, this project will respect land, property and customary rights.
Human Rights	X The project activities are not discriminatory by tribe, age and gender or, level of education. The project design relied on the consultative	

	<p>approach involving various stakeholders. No activities are identified whose execution is not in line with the established international human rights. Project objectives promote basic human rights for fair and equitable access to resources to enhance their resilience to climate change in the project area.</p>	
Gender Equity and Women's Empowerment		<p style="text-align: center;">X</p> <p>A preliminary gender assessment was conducted (Annex 3) and highlight the main potential risks under this principle.</p> <p>Further detailed gender analysis will be done at full proposal level to ensure that all gender aspects are fully incorporated into the proposal. The project targeting strategy will have gender quotas and will promote women leadership in public spaces and decision-making power for climate change adaptation. During project formulation women will be consulted at national and local level and a full Initial Gender Assessment will be conducted that will enable the appropriate risk screening of the ESP 5 on Gender Equality and Women's Empowerment.</p>
Core Labour Rights		<p style="text-align: center;">X</p> <p>Inequality in remuneration between men and women as well as child labour are risks that could occur and thus have impact the proper execution of the project. During the E&S assessment a special focus on National labour laws in force will be ensured and the respective country labour laws and regulations will be followed. In addition, the project will ensure that labour laws are considered during the project implementation. The country labour laws and regulations will be followed. Child labour and inequity in remuneration between men and women will be forbidden.</p>
Indigenous Peoples	<p style="text-align: center;">X</p> <p>The project promotes the respect of the rights and responsibilities set forth in the United Nations Declaration on the Rights of Indigenous People. Indeed, in project intervention areas, no indigenous people or tribes were noted and will be affected by the project activities</p>	
Involuntary Resettlement	<p style="text-align: center;">X</p> <p>The project will not engage in involuntary resettlement. All consultations will be based on the (FPIC) Principle. There will be no involuntary resettlement due to project activities during project implementation. All activities related to natural resource restoration and management will not lead to resettlement.</p>	
Protection of Natural Habitats		<p style="text-align: center;">X</p> <p>The proposed project will be undertaking activities related to sand dune fixation, afforestation, establishment of greenbelts, and further assessment to identify the project risks on natural habitat in the targeted areas is required, though an E&S assessment which will be conducted in the full proposal development stage</p>
Conservation of Biological Diversity		<p style="text-align: center;">X</p> <p>Further consultations and assessments will be required during the development of</p>

		Environmental and social impact framework (ESMF) for the proposed project. At full proposal design stage, deliberate efforts taken to ensure that interventions are compliant with all relevant national and international laws on conservation of biological diversity. It is important to highlight that no invasive plant species will be planted in the project area.
Climate Change	X No further assessment required Project activities proposed are aimed to enhance the resilience of oases and agro-ecosystems and populations to climate change effects in the area along with food security and water management efficiency enhancement.	
Pollution Prevention and Resource Efficiency	X The project will not pose any significant risks to resource efficiency or pollution for water, land or fertiliser use and no further assessments will be required. The project will bring environmental benefits in integrated water management and climate change adaptation and generally improved access to water and reduced inefficiencies in water management.	
Public Health	X Project interventions will also focus, among other, on the development of community awareness sessions on climate change and adaptation options, taking into account local know-how. This will include training and capacity building modules related to all project activities including water management. Communities will be sensitized on the need to reduce water consumption and water use, which will contribute to water availability during dry spells and droughts. These efforts lead to prevent water-borne diseases and other epidemics, thereby contributing to public health. Furthermore, the project will support animal production by strengthening quality health and food systems (inputs and veterinary pharmacies, fattening, cultivation of fodder plants, etc.) through stockbreeders' associations..	
Physical and Cultural Heritage	X Traditional and local knowledge will be understood and enhanced with scientific information for environmental management with stakeholders and communities.	
Lands and Soil Conservation		X The project will promote sustainable land management practices including sustainable water management and sustainable agricultural practices. Further soil and land assessment will be provided during the full proposal. Component 2 of the project, via its Output 2.2.1: Agro-pastoral ecosystem practices enhanced and adopted. This will be done by activities related to protection of oases and agricultural lands through establishment of greenbelts, promotion of afforestation and reforestation practices of degraded areas, valuation/promotion of local SLM practices and techniques, and promotion of pasture management practices (gazing reserves)

		Therefore, no damage to soil, vegetation and land resources is expected to occur.
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PART III IMPLEMENTATION ARRANGEMENTS

A. Alignment with the Results Framework of the Adaptation Fund

159. The project objectives and outcomes are aligned to the AF Strategic Results Framework and directly contribute to the Fund’s overall objective and outcomes. At this stage of the concept note, this alignment is fully detailed in the table 13 below. At the next stage, during the full proposal development, the details for the results framework implementation will be determined in the M&E manual, which will be developed at the beginning of the project. Consequently, a more in-depth disaggregation of many indicators will be possible, for example, beneficiaries will be grouped according gender and age group.

Table 13: Alignment with the AF results framework

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Objective: To strengthen the resilience of Communities (women and youth) of Ziyara and Dhaya oases ecosystems, to climate change impacts through soil and water and management techniques	Improved ecosystem services for the benefit of the communities	<u>Outcome 5:</u> Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	
	% of the population in targeted communities reporting benefits from an enhanced livelihood asset	<u>Outcome 6:</u> Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets	
	Number of climate-resilient practices / technologies adopted	<u>Outcome 8:</u> Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	
	Number of communities sensitized and aware of predicted adverse impacts of climate change	<u>Outcome 3:</u> Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Component 1: Improved water resources access and management for local communities				
Outcome 1.1: Water mobilization infrastructure improved	Number of waters’ harvesting infrastructure constructed	Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	<u>1,700,000</u>
Outcome 1.2: Promotion of good water resource management practices	Number of water management committees adopting sustainable water practices	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge	<u>1,500,000</u>
Component 2: Improved resilience of ecosystems and livelihoods to climate change and variability.				
Outcome 2.1:	Proportion (%) of oases restored	Output 5:	5.1. No. of natural resource assets created, maintained or improved to withstand	<u>1,650,000</u>

SLM Practices promoted for the preservation of oases ecosystems		Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	conditions resulting from climate variability and change (by type and scale)	
Outcome 2.2: Agro-pastoral ecosystems are enhanced, adapted and preserved	Percentage of farmers and pastoralists undertaking adaptation actions	Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of health or social infrastructure developed or modified to respond to new conditions resulting from climate variability and change (by type) 4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)	<u>1,500,000</u>
Component 3: Diversifying sources of income through IGAs to improve livelihoods of communities with a focus on women and youth				
Outcome 3.1: Enhanced adaptive capacities and sources of income for communities' resilience through adoption of IGA	Number of women and youth undertaking IGAs	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.2.1. Type of income sources for households generated under climate change scenario	<u>1,500,000</u>
Component 4: Strengthened capacities for knowledge sharing and raising awareness of stakeholders and all beneficiaries at different levels				
Outcome 4.1 Stakeholders are mobilized and sensitized through communication and capacity building activities	Number of targeted communities undertaking climate change adaptation actions.	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge	<u>300,000</u>
Outcome 4.2: Knowledge sharing and raising awareness is strengthened	Number of knowledge-products disseminated		3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	<u>300,000</u>

PART IV ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government

Sidi Mohamed Ould El Wavi , Charge de Mission (1er Conseiller du Ministre), Coordonnateur de la Cellule Nationale Changement Climatique	Date: December 16 th , 2022
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B. Implementing Entity certification

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 of the Government of Mauritania and subject to the approval by the Adaptation Fund Board, commit to implementing the project in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project.

Mr. Nabil BEN KHATRA – Executive Secretary of The Sahara and Sahel Observatory (OSS) as the Implementing Entity Coordinator

Date: February 7th, 2023

Tel: (+216) 71 206 633

Email: boc@oss.org.tn

Project Contact Person: Mrs. Khaoula JAOUI

Tel. and Email: (+216) 71 206 633; Khaoula.jaoui@oss.org.tn

Annex 1: Endorsement letter

الجمهورية الإسلامية الموريتانية
 شرف - إخاء - عدل

RÉPUBLIQUE ISLAMIQUE DE MAURITANIE
 Honneur - Fraternité - Justice

وزارة البيئة والتنمية المستدامة
**Ministère de l'Environnement
 et du Développement Durable**
 مديرية المناخ والاقتصاد الأخضر
 Direction climat et Economie Verte

16 DEC 2022
 Nouakchott, le : _____ في انواكشوط
 N° : _____ الرقم
 000/29

Le Directeur المدير

To: The Adaptation Fund Board
 c/o Adaptation Fund Board Secretariat
 Email: Secretariat@Adaptation-Fund.org
 Fax: 202 522 3240/5

Subject: Endorsement for the project "Improvement of integrated economic activity and the settlement of women and young people in the Poles of Ziyara and Dhaya in Adrar through the fight against soil degradation, clean water pumping and water-efficient irrigation".


In my capacity as designated authority for the Adaptation Fund in Mauritania, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Mauritania.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by NGO : SOS-Oasis (Mauritania).

Sincerely,

Sidi Mohamed El Wavi
 NDA AFB Mauritania

Copy : MEDD





ADAPTATION FUND

Project Formulation Grant (PFG)

Submission Date: January 9, 2023

Adaptation Fund Project ID:

Country:

Mauritania

Title of Project:

Improvement of integrated economic activity and the settlement of women and youth people in the Poles of Ziyara and Dhaya in Adrar through the fight against soil degradation, clean water pumping and water efficient irrigation

Type of IE :

RIE

Implementing Entity:

Sahara and Sahel Observatory (OSS)

Executing Entities:

SOS Oasis Mauritania

A. Project Preparation Timeframe

Start date of PFG	Upon Concept Note approval date
Completion date of PFG	One year after Concept Note approval date

B. Proposed Project Preparation Activities (\$)



Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Environment Impact Studies/Reviews	<ul style="list-style-type: none">Assessment of the project areas intervention and preliminary baseline establishment with additional stakeholder mapping.Environmental Impact assessment according to the AF 15 safeguards and OSS E&S policy.Review of project interventions identified to cause disharmony to the environment and socio-economic setup of the communities.Development of an ESMP detailing the mitigation actions and its M&E system.	7 000
Cost-effectiveness	<ul style="list-style-type: none">Assess the economic and financial contribution for the project zones' beneficiaries.Analyze the profitability of project activities considering the cost-effectiveness of the proposed, water management infrastructure, climate-resilient farming practices, IGAs as well as the project added-value at the environmental, social and economic levels.	5 000
Gender analysis	<ul style="list-style-type: none">Assess extent of gender mainstreaming into regional and national disaster risk management related policies	4 000

	with regards to governance, management, and emergency action plans. <ul style="list-style-type: none"> Analyze the existing gender strategies on addressing gender in water, agriculture and fishing related policies. Monitoring and Evaluation interventions to measure progress and/ or impact of gender mainstreaming Propose a gender specific action plan for the project 	
Consultation process	<ul style="list-style-type: none"> Concertation workshops with stakeholders and local communities' representatives 	18 000
Design of the full project proposal	<ul style="list-style-type: none"> A complete funding proposal document including all the technical outcome from the preparatory studies and consultation workshops will be developed and validated before submission to the AF 	5 000
Travel/participation	<ul style="list-style-type: none"> Travel costs and technical support 	10 000
Other costs	<ul style="list-style-type: none"> Management fees 	1 000
Total Project Formulation Grant		50 000

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)
Mr. Nabil Ben Khatra, OSS' Executive Secretary (RIE)	 	01/09/2023

Project Contact Person	Telephone	Email Address
Mrs. Khaoula Jaoui, Climate Department Coordinator	(+216) 71 206 633	boc@oss.org.tn

Annex 2: Consultation Report (2022 and 2019)

2022 Mauritania Consultations

As part of the preparation and economic, environmental and social assessment of the project "Enhancing the resilience of communities of agropastoral and oases ecosystems of Ziyara and Dhaya to the adverse effects of climate change in the Adrar region in Mauritania", a consultation and consultation mission with stakeholders was conducted by the technical team of SOS-OASES, from 6 to 14 August 2022, at the level of the two areas concerned. The consultations took place as follows:

- An institutional meeting at the level of Atar gathering around the Wali, the Representative of the Region and the concerned technical services (MA, MEDD, ME, MHA, other departments),
- A meeting with the Deputy Mayor of Tawaz surrounded by some advisors and technical services members of the Communal Committee of Concertation (CCC) of Tawaz.
- Pole of Ziyara: Site visits to hold focus group consultation meetings with the populations of the villages of Ziyara, Mintevaa, Jreiv, Eguemoun, Nguermellil, Loudeyatt and Oueinet rvayeg.
- Pole of Dhaya: Site visits to hold focus group consultation meetings with the populations of the villages of Dhaya, Tizegrez, Ziret Elhella, Taryouvet, Doubai, Rkeina.

At the village level, the participants in the meetings were mainly farmers and agro-pastoralists, whether or not they were organized in cooperatives, in addition to certain NGOs and associations.

These meetings highlighted a number of environmental, economic and social problems potentially associated with climate change on which the project's intervention is expected to: (i) strengthen the adaptation and resilience capacities of its valiant and hard-working populations; (ii) sustainably address the challenges of structural and cyclical poverty.

The results of these consultations are briefly described below, including the general approach followed, the structures and stakeholders met with, and the concerns and expectations that were raised. This report is complemented by lists of participants and illustrative photos, presented in the appendix.

The consultation meetings were facilitated by the Wali (for the institutional meetings) and by the Mayors or their representatives or community leaders (for the focus group meetings) with the support of the SOS-OASIS team.

General approach

Consultation objectives

- Provide stakeholders with information on the project development and economic, environmental, and social assessment process, including its contribution to building their resilience to climate change;
- Identify the main concerns and expectations of the project's stakeholders in order to initiate ownership for sustainability.
- Identify the most appropriate means of communication to facilitate stakeholder involvement in later stages of the process.
- Identify and collect existing data of interest to the process.

General structure of the meetings

In general, the consultation meetings were structured as follows:

- Introduction of participants;
- Presentation of the project objectives;
- Discussion of the environmental, economic and social issues associated with the project;
- Discussion on the concerns and expectations raised by the various stakeholders.

Summary of concerns raised by stakeholders (PP)

The concerns, expectations and recommendations made by the different stakeholders are

Current situation of the Project area

Socio-economic:

- A large part of the population, especially female-headed households, lives in poverty.
- Agriculture and livestock are the main sectors of activity.
- Remittances play an important role in the household economy.
- The adult male population is smaller than the adult female population.
- Many heads of households are unemployed.
- High illiteracy: primary schooling is dominant among the 20% of women who attend school.

Agriculture and livestock:

- Climate: Sometimes unfavourable climatic conditions (drought leading to the drying up of certain water tables);
- Pronounced differences in productivity between sites.
- Lack of water in the area, aggravated by the recurrent lack of rainfall
- Low productivity.
- Limited harvesting periods leading to a sell-off of products to avoid the loss of perishable products in the absence of conservation units.

Infrastructures:

- Undeveloped road network.
- Lack of transportation means.
- Difficulties in shipping products to market.
- Poor access to medical facilities.

Environment:

- Lowering of groundwater levels.
- Insufficient groundwater data
- Inefficient use of water resources.
- Damage caused by dune shifting and silting is widespread.

Solutions & Recommendations

The interviews and discussions allowed us to identify solutions and recommendations made by the interviewed stakeholders to consider in the project design:

- Provide diversified employment to women and youth
- Promote conservation and processing units for agro-pastoral products
- Ensure transport logistics and input supply
- Develop and ensure women's access to economic activities (IGAs, development of cultivable land)
- Set up integrated projects (agriculture-livestock-fishing) for the benefit of women
- Support programs to raise awareness and fight against gender-based violence (GBV)
- Promote training programs, education and employment for young girls
- To ensure the training of women in the field of vegetable processing, management and organization
- To fix the populations in their territories through the realization of integrated service packages.
- Pay particular attention to vulnerability, especially of women and people living with disabilities, who deserve a differentiated treatment in terms of specific support
- Involve stakeholders in the different phases of the project
- Develop an operational complaints management mechanism and disseminate it to stakeholders
- Establish a network of stakeholders in charge of collecting, managing and disseminating information
- Pay particular attention to integrating as many women as possible into the production circuit
- Provide training on the installation of tree nurseries in order to have human resource capacities capable of conducting reforestation activities
- Develop green spaces in public places (schools, health centers, etc.) in the area
- Provide training for the popularization of agricultural, livestock and fish farming techniques
- To support the activities of valorisation of the agropastoral by-products
- Develop cultivable areas for women, provide them with adequate equipment and ensure the maintenance of these production tools
- To ensure a solid and adapted protection of agricultural areas to fight against the divagation of animals
- Establish a sustainable marketing circuit to promote the sale of agricultural products
- To ensure the supervision by involving the concerned technical structures
- Develop water retention basins

Annexes: Lists of institutional and beneficiary stakeholders met with Photos.

Attendance list for the institutional meeting in the Wilaya of Adrar (Atar, 8 August 2022)

Name	Function	Contact
Abderrazak DIAK	Wali de l'Adrar	
Ahmed BOUYA	Conseiller Economique du Wali	46594601
Mohamed Ahmed CHEIKHNA	Hakem de la Moughataa d'Atar	44481083
Mohamed M'Barek HOUEBIB	Délégué régional de la Décentralisation	22085082
Sidi Mohamed ADIBA	Délégué régional du Ministère de l'Environnement & Développement durable	44481976
Sidi Haiba ABDERRAHMANE	Délégué régional du Ministère du Commerce, Industrie, Artisanat et Tourisme	46470809
Mama LEKBAR	Coordinatrice Régionale de l'Action Sociale, de l'Enfance et de la Famille	43439023
Cheikh ELKEBIR	Secrétaire général de la Région de l'Adrar	46294348
Hbib AHMED SALEM	Coordinateur Régional de la Cellule Ministère des Affaires Economiques	41881510
Sid'Ahmed KLEIB	Directeur régional, P.i – Ministère Education Nationale	22006524
Abdellahi BELLAL	Délégué régional du Ministère de l'Elevage	46496385
Sidi LEHAH	Délégué P.i Commissariat à la Sécurité alimentaire	47569394
Brahim MOCTAR	Délégué Régional du Ministère de la Santé	22258110
Sidi Mohamed MOHAMED	Coordinateur régional Projet PARIIS-Ministère Agriculture	47188678
Baba Ely Salem	Agence Mauritanienne d'Information	46553554
Fatma Mohamed	V-Présidente ONG	22085980
Benina Beghah	Unies contre la faim	22026202
Sid'Ahmed Lemine	Représentant Association des Producteurs de l'Adrar	22240392

Photos taken during the institutional meeting with the Wilaya, Region and technical services - Atar on 8 August 2022



Attendance list for the institutional meeting in Tawaz Municipality (Tawaz, 9 August 2022)

Name	Function	Contact
Mohamed Mahmoud GHADHI	Maire Adjoint TAWAZ	33700204
Mohamed Salem BREIKATT	Conseiller municipal	48215110
Salouma BLAL	Agriculteur, membre du CCC	
Mohamed ELHACEN	Agriculteur, membre du CCC	44054652
Mohamed Lemine NTAHAH	Conseiller municipal	
Zeinabou SALEK	Agricultrice, membre du CCC	
Fatma DIDI	Conseillère municipale	
Mariem CHEIKH MOHAMED VADEL	Présidente de coopérative, membre du CCC	
Mohamdi AMAR	Agent Municipal, Membre du CCC	
Sid'Ahmed Baha	AGPO de Tawaz	
Naha ABDELLAH	Secrétaire général de la commune	

Photos of the institutional meeting with the Deputy Mayor of the commune of Tawaz, with members of the Communal Consultation Committee (CCC) - Tawaz on 9 August 2022



Attendance list - Focus Group - Ziyara cluster - (Ziyara, 10 August 2022)

Name	Sex	Age	Activities practiced
1. CHEIKH SAAD BOUH Aghdhafna, Chef traditionnel et Président du Pôle	M	70	Elevage/Agriculture
2. MOHAMED ELMOUSTAPHA Mariem	F	50	Agriculture
3. SIDI Debya	F	45	Agriculture/Elevage
4. CHEIKH MOHAMED FADEL Mina	F	32	Agriculture
5. AGHDHAFNA Saad	M	36	Elevage
6. ABOUKAK Dehdah	M	32	Elevage
7. MOHAMED FADEL Aghdhafna	M	27	Agriculture /élevage
8. BOUKHARY Akhbarha	F	42	Elevage/agriculture
9. CHEIKH MOHAMED VADEL Mariem	F	50	Agriculture /élevage
10. BREIKATT Mohamed Salem	M	50	Elevage
11. HAMEDHA Mohamed Khouna	M	39	Agriculture
12. CHEIKH Mohamedou	M	31	Elevage
13. MAHMOUD Baba	M	60	Agriculture
14. SIDI Menatt	F	38	Agriculture
15. MBARECK Fatma	F	28	Agriculture
16. MOHAMED SALEM Mana	F	39	Elevage
17. AGHDHAFNA Hasniya	F	45	Agriculture
18. MEIMOUNE Louga	F	38	Agriculture
19. MBAREK Selemha	F	34	Agriculture
20. KHATRATY Fatimetou	F	33	Agriculture
21. JDID Aminetou	F	26	Elevage
22. CHEIKH SAAD BOUH Ellou	F	45	Agriculture
23. MOHAMED ELMOCTAR Nekhteyrha	F	40	Agriculture

Photos of the Focus Group meeting - Ziyara Cluster (10 August 2022)



Attendance list - Focus Group - Dhaya Cluster- (Ziret Elhella, 12 August 2022)

Nom	Sexe	Age	Activité principale
1. Mounina Sidi Mohamed, Présidente du Pôle	F	70	Agriculture/ Elevage
2. Messouda Yarbe	F	28	Agriculture
3. Yewghiha Khattry	F	32	Agriculture
4. SidiMohamed Boulemssak	H	47	Elevage / agriculture
5. Yehdhiha Messoud	F	36	Agriculture
6. Elghdva Messoud	F	45	Agriculture
7. Khaye Abdelsamed	F	34	Agriculture
8. Houle Dembe	F	41	Agriculture
9. M'Barka Abdel weddoud	F	50	Agriculture
10. Abdelbaghi N'Tahah	H	39	Agriculture
11. Khadijetou Elibowba	F	43	Agriculture
12. Zeynebou Souedi	F	29	Agriculture
13. Mariem Lekhweyme	F	37	Agriculture
14. Salka Mahfoud	F	40	Agriculture
15. Habaecka Billal	F	50	Agriculture
16. Toutou N'vaa	F	28	Agriculture
17. Mafoudha Mawloud	F	44	Agriculture
18. Aichevall Sid'Ahmed	F	32	Agriculture
19. Ethmane Saleck	H	42	Elevage
20. Ahmed Chadhly	H	48	Elevage
21. Alioune Mabrouk	H	39	Agriculture



Photos of the Focus Group meeting – Dhaya cluster- (12 August 2022)

2019 Mauritania Consultations

Context

As part of the monitoring of the mid-term implementation of the Strategy for Accelerated Growth and Shared Prosperity (SCAPP) action plan, thematic workshops have been planned and implemented at the regional level, by the SCAPP management in collaboration with the Wilayas, according to the major ecological zones of the country (Sahelian zone, river zone, coastal zone and arid zone). In this context, a workshop was held in Atar from 10 to 12 August 2019 aimed at prioritizing the most vulnerable areas to climate change in the Adrar region.

Objectives

The objectives of the Atar workshop are:

- Update the diagnosis of the most important sectors for the Wilaya; namely agriculture, livestock, environment, and water resources;
- Identify the most vulnerable areas to shocks in order to propose projects to improve the resilience of populations for better adaptation to climate change.

Expected results

The expected results are as follows:

- A participatory diagnosis is carried out;
- Stakeholders are better informed and have ownership of the process;
- Vulnerable areas are identified and measures are proposed.

Course of the workshop

The facilitation of the workshop was based on different pedagogical approaches combining top-down transmission of knowledge with theoretical presentations aimed at sharing in a synthetic way the information/assessments/analyses available on the most vulnerable sectors in the Adrar region. It was completed by a round table discussion in a form of questions/ answers/ suggestions/ recommendations aiming at involving all participants through exchanges of understanding, enrichment and appropriation.

Opening ceremony of the workshop

The opening ceremony of the joint workshop was chaired by the Wali Moussaid of Adrar, in the presence of the Representative of the Director of the Strategy for Accelerated Growth and Shared Prosperity (SCAPP), and members of the Regional Development Committee (administrative authorities, elected officials, officials of technical services - rural development, environment, water, decentralization, etc., representatives of a number of NGOs and communities. The list of participants is attached.



After an introduction by the representative of the SCAPP Director on the objectives of the meeting, its thematic nature and the follow-up process undertaken in other regions on other themes, the Wali Moussaid of Adrar welcomed the participants before declaring the workshop officially open. Subsequently, the SCAPP support consultant made a presentation on the assessment/diagnosis of the agriculture, livestock, water and environment sectors in Adrar.

Progress of the workshop

The workshop was conducted in four sessions:

- Session 1: Presentation of the objectives of the workshop;
- Session 2: Welcome and opening remarks by Wali Moussaid;
- Session 3: Communication on the process of monitoring the SCAPP with an overview of the sectors covered by the meeting;
- Session 4: A round table discussion during which participants gave their assessments of the diagnosis and proposed recommendations for improvement.



Summary of the workshop's outputs

An inventory of the Adrar region was drawn up to present the vulnerability of the most important sectors, as well as a classification of the zones and groups in the region as highlighted below.

The vulnerability of the main sectors

Agriculture: Three types of agriculture exist in Adrar, in order of importance: phoeniculture, market gardening, lowland/dam crops and rainfed crops. Cereal production, which is largely dependent on irregular rainfall, covers only 30% of estimated needs in good years. The types of cereals grown are primarily sorghum and, to a lesser extent, wheat and barley. It can be seen that agricultural production in Adrar is generally in deficit.

Livestock: The livestock sub-sector in Adrar is essentially extensive due to the existence of rich pasture potential. The main species are camels and goats with few sheep and almost no cattle. Like the rest of the country, this sub-sector is experiencing constraints both in the production segments and in processing and conservation, which are added to a low and irregular rainfall.

Environment: Adrar has a multitude of natural depressions (shallows and other places of runoff concentration) and oases that, because of their morphology, have hydrological characteristics that make them areas of high agricultural potential and great biological diversity. However, desertification and sand dune movement threaten a large part of the territory of the Wilaya and especially these oases areas.

Water resources: The water resources of Adrar are mainly constituted by aquifer resources as well as a certain number of temporary ponds. During the rainy years, the ponds fill up, the shallows and the basins are flooded. The water table is recharged and irrigation is made easier. The main constraints are the low rate of water supply for drinking and agricultural purposes and the lack of sustainable water tables.

Food security: In terms of food security, the Wilaya of Adrar, like the rest of the country, has been experiencing a structural deficit since the great drought of the 1970s. More than 80% of the Wilaya's territory is desert, with a cumulative rainfall of less than 100 mm per year. The primary sector -agriculture and livestock- is characterized by low productivity, which leads to recurrent food insecurity.

The main factors of vulnerability in Adrar

Adrar faces a number of constraints that make it one of the most vulnerable Wilayas in the country, as evidenced in particular by the prevalence rate of monetary poverty representing 39.9%, which rank it in fifth place after the Guidimakha, Tagant, Brakna and Assaba according to the EPCV. Indeed, climate change, overexploitation of natural resources, poor access to basic social services and social protection systems, the mountainous nature of the region and the isolation of certain areas are all factors that accentuate the vulnerability of populations of the Adrar.

Climate change in Adrar has resulted in insufficient and irregular rainfall leading to a rupture of the balance of the agricultural and pastoral systems and the aggravation of the phenomenon of desertification, rural exodus, food and nutritional crises throughout the Wilaya, where there has been a significant drop in the level of groundwater and a significant increase of sand dune progression. This resulted in the loss of several tens of thousands of date palms and a widening of the cereal deficit of the Wilaya, due to a very significant drop in the areas exploited in rainfed agriculture, which is, with date palm, the dominant type of agriculture. and whose productivity is low.

Livestock, which constitutes a source of income for a large part of the households of the Wilaya, has been heavily impacted in recent years by the effects of climate change combined with the regular occurrence of epizootics leading to significant livestock losses, in particular Rift Valley Fever.

Vulnerability is reflected in particular by recurrent food insecurity. Thus, the forecasts of the harmonized framework for monitoring the food situation for the June-August 2019 period indicated that 9,741 people, or 16% of the population of the Wilaya, will face a food crisis (level 3 to 5), i.e., half a point more than the national average. The EPCV shows that, according to the Food Insecurity Experience Scale (FIES), the prevalence of food insecurity is 63.9% in Adrar, i.e., 20

points higher than the national average. The rate of severe and moderate malnutrition in the Wilaya (especially among women and children) is respectively 7.2% and 56.7%, or 0.2 points and 19.8 points more than the national average.

The isolation of certain areas, also affects the purchasing power of households and reduces access to health facilities, particularly for women and children, and to other social services.

The strong preponderance of informal employment constitutes another factor of vulnerability of the populations of Adrar whose economic activities essentially revolve around the cultivation of date palms, market gardening, livestock breeding and tourism. Adrar faces a number of constraints that make it one of the most vulnerable Wilayas in the country.

Vulnerable groups and areas

In Adrar, as in the other Wilayas of the country, the vulnerable groups are extremely poor households, women, working children, and people living with a disability or chronic illness. According to data from the Permanent Survey on Living Conditions of Households (EPCV), slightly more than 1/10 of households in Adrar live in extreme poverty, with a prevalence rate of 10.3%, compared to 12.8% at the national level. These households are mainly composed of farmers, breeders and self-employed workers whose precarious situation has been aggravated by the very significant drop-in tourist activity. Extreme poverty, and therefore vulnerability, is much more prevalent among households living in rural areas (16.6%) than in urban areas (2.4%), and is more pronounced among households managed by women.

The persistence of climate-related diseases vulnerable groups are extremely poor households, women, working children, and people living with a disability or chronic illness.

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In this context, the participants in the meeting, in accordance with the objectives of the workshop and based on the diagnosis, identified the areas of Ziyara and Dhaya as the most vulnerable in the Wilaya with regard to the level of food and nutritional insecurity, the state of the environment and their dependence on water and soil resources, and stressed the urgency of mobilizing funding for projects that can ensure an adequate and appropriate response to the constraints of these areas allowing the implementation of rapid actions to improve the resilience of communities to adapt sustainably to the effects of climate change.

The main constraints identified in both areas are as follows:

- Successive droughts since the 1960s, increasingly frequent and devastating;
- The silting up of waterways with the long period of drought accompanied by strong winds exceeding 6m/s;
- Water deficits recorded in pastoral wells;
- The water table has dropped by 12 to 20 meters in the region;
- Heat waves observed in June and July causing severe water stress to humans, animals and plants;
- The progressive salinization of the water tables due to a: malaria, dengue, diarrhea, etc.;
- The progress of sand dunes on the oases and hydraulic infrastructures (spring water, garaas, dams, etc.);
- Severe climatic conditions (insufficient and irregular rainfall, high temperatures, etc.)
- Low level of productivity (palm groves, underlying crops, traditional crops, grazing areas).

The main concrete adaptation actions proposed are as follows:

- Diversify sources of income and improve the living conditions of vulnerable populations, particularly women, to climate change in the targeted areas, labour
- Improve the adaptive capacities of the water sector,
- Improve the resilience of the ecosystem in the face of climate change and variability through reforestation actions for protection against erosion and other forms of land degradation,
- Improve awareness of all stakeholders through knowledge management and sharing,
- Strengthen the capacities of actors in the design and implementation of adaptation measures.

Annex: list of participants (workshop SCAPP, Atar 10-12/08/2019)

#	Name	Function	Institution	Tel.
1	Diagana Abdoulaye	Wali Moussaid	Wilaya Adrar	
2	Mansour Ahmed Meilid	Regional Councilor	Adrar Regional Council	48 62 62 89
3	Aghlana Mint Soule	Regional Councilor	Adrar Regional Council	46 78 59 46
4	Mahfoudh O Thiam	Responsible	Direction of the SCAPP	46 45 89 51
5	mohameden seyid	Regional delegate	Ministry of Agriculture & Livestock	22 35 11 52

6	Mohamed Abdellahy Beyne	Regional director	Ministry of Education	46 41 27 56
7	Tinder SOW	Regional delegate	Ministry of Environment-MEDD	36 31 02 41
8	Married Mohamed Lemine	Regional Councilor	Adrar Regional Council	42 25 01 35
9	Mneye Mint Haimoud	Regional Councilor	Adrar Regional Council	42 26 33 26
10	Sidaty O Sidaty	Deputy director	SCAPP	43 90 88 95
11	Sid Ahmed Moud	SC	SC	47 55 45 37
12	Ely Sheikh	Regional Councilor	Adrar Regional Council	36 30 27 03
13	Noura Mint Sal m	SC	SC	22 38 21 61
14	Mohamed Abdallahi Brahim	Deputy Delegate	MCJSRP	36 61 31 49
15	Med El Kory Tablenkou	DA/DSP	MAEPSP	33 33 98 07
16	Sidi Med Abdellahi	Regional Councilor	Adrar Regional Council	41 81 22 54
17	Mahmoud Meme	SC	SC	41 28 83 70
18	Amina Hamed	SC	SC	22 31 32 82
19	Sheikh Melainine	Deputy Mayor	Atar	32 44 74 96
20	Bamba Levrak	Regional Councilor	Adrar Regional Council	37 47 41 43
21	Fatimetto Berrou	Regional Councilor	Adrar Regional Council	36 31 98 47
22	Mokhtar Isselmou	Regional delegate	ONS	46 43 31 27
23	Med Mahmoud Haminy	City councilor	Atar	46 30 82 76
24	Sidi Ahmed Vall Mbareck	Deputy Mayor	Chinguitty	47 46 66 92
25	Ahmad Salem	SC	SC	33 60 82 28
26	Abdel Vetah Abeidna	SC	SC	36 32 01 79
27	Med Salem Bouchama	Regional Councilor	Adrar Regional Council	42 20 20 57
28	Mariem Mohamed Francois	Deputy Mayor	Choum	46 50 03 87
29	Mohammad Mahah	President	SOS OASIS	46 41 58 97
30	Deye Sidi babe	SC	SC	26 30 31 12
31	ahmed baba	Chief Service	SCAPP	22 00 70 62
32	Hbib Ahmed Salem	Head of Adrar cell	Ministry MAEPSP	41 88 15 10
33	mohamed blile,	AG	HAVE	46 46 60 00
34	Mohamed Soueidi	SG	Union AGPO	46 00 32 11
35	Sheikh Brahim Med Habib	Director	Fixed-term contract Atar	36 24 49 65
36	Mame Lekbar	Regional Director	Ministry of MASEF	43 43 90 23
37	Dr Brahim	Regional director	Ministry of Health	22 25 88 10
38	Med Mahmoud Med Lemine	Regional Delegate	AIEO Ministry	46 59 74 70
39	Dr Abdellahi Hmeyada	Director	Atar Hospital Center	46 43 47 41
40	Mohammad Ely	Mayor	Ain Ehel Taya	37 20 00 07
41	Mohamed Fadel A. CHEIKH	International consultant	Direction of the SCAPP	26 23 26 23
42	Cheyakh Beyan	Deputy Mayor	Ouadane	34 88 48 51
43	Sid Ahmed Sfeira	Regional coordinator	PARH project	47 18 86 78
44	Med Mahmoud Ghadi	Deputy Mayor	Tawaz	33 70 02 04
45	Sidi Ahmed Beida	SC	SC	32 30 21 21
46	Sidi Sneiba Abderrahmane	Regional director	Department of Commerce	46 47 08 09
47	Housseem Cherif	Regional director	Hydraulic	22 36 94 69
48	Alya Abderrahmane	SC	Ouadane	46 44 07 57
49	Med Bouya	CAPEC	CEIC	22 17 14 70
50	Med Moctar Sidi	SC	Ain Ehel Taya	20 4168 86
51	Mariem Aghdhavna	SC	Tawaz	22 05 43 24
52	Med Lehbouss	President	AGCDD Choum	4191 80 43
53	Med Vall	labor inspector	Atar	46 40 86 06
54	Med Ghoulam	Regional Delegate	Regulatory authority	46 50 97 22
55	Med Abdellahi Med	President	Transport office	46 45 31 92
56	Salima Sleiman	President	Tourism Federation	46 47 39 60
57	Med Yahya Boukhair	SC	Tawaz	46 45 21 55
58	Med Saleck Ahmed	Imam	Tawaz	48 31 48 31
59	Nahe Sidi	General secretary	Commune Tawaz	46 47 41 46
60	Saad Moustapha	Mauritanian Agency Inf.	Atar	44 48 42 56

Annex 3: Gender Consideration

PRELIMINARY GENDER ANALYSIS

Basic gender related socio-economic characteristics in Mauritania

The ambitions of the Mauritania's Strategy for Accelerated Growth and Shared Prosperity (SCAPP) 2021-2025 Action Plan state that Mauritania's strategic vision is for a society that is peaceful and fully committed to combating inequalities in all their forms, including those related to gender.

In Mauritania, women face multiple obstacles to their economic and social inclusion. Due to deeply rooted social norms, Mauritanian girls and women face great inequalities within the household, in the labor market and in institutions. These inequalities lead to child marriage, early pregnancy, and low educational attainment for girls, among other things. This, in turn, leads to higher fertility and therefore higher population growth. Gender inequality in the home is also thought to increase the risk of domestic violence. It also affects women's access to financial and economic opportunities. Women are half as likely as men to be in the labor force, and their work remains vulnerable and undervalued. Only one in seven women had a bank account, and only 2.4 percent of Mauritanian businesses were majority owned by women. The share of the permanent private sector workforce that is female is only 13 percent.

The last two Permanent Household Living Conditions Surveys (EPCV), conducted in 2014 and 2019-2020, show that the poverty prevalence rate fell from 30.9% to 28.2% (a drop of 2.7 points). Poverty remains a rural problem, with an incidence of 41.2% in rural areas, compared with 14.4% in urban areas. The contribution of rural areas to extreme poverty is more than 80%, regardless of the poverty measure chosen.

In terms of economic integration, the level of unemployment seems to be persistent, with a rate of 12.2% in 2019 (ANSADE) compared to 11.8% in 2017 (Bilan Commun Pays 2020). Unemployment in 2019 affects women more than men, with respective rates of 17.3% and 9.3%. It is also noted that there is a predominance of men in the labor market who are better inserted professionally. This predominance can be explained mainly by social and cultural reasons.

Moreover, youth unemployment also affects girls more than boys, regardless of age: 25.6% (26.3% for 14-19-years old, 37.3% for 20-24 years old, etc.) versus 14.5% (18.9% for 14-19 years old and 22.6% for 20-24 years old). This situation demonstrates the need to consider the gender and youth dimension in the framework of development strategies and the resulting projects in order to guarantee social equity and reduce inequalities.

In rural areas, women are the most vulnerable social group and continue to bear the heavy burden of the household in the absence of men who migrate in search of work. in search of employment. According to data from the 2014 EPCV, women head more than 30 percent of households.

With a gender inequality index of 0.63215 Mauritania ranks 158st out of 162 countries in 2021. out of 162 countries in 2020.¹⁵ The significant gender inequalities that prevail in the country are also present in the inequalities in the country are also present in the regions covered by the program and affect the resilience of resilience of communities through their social and economic implications.

1. Health & Demography

Women's health conditions also need to be improved. The fertility rate for adolescents aged 15-19, at 70 births per 1,000 women, is much higher than in neighboring countries. In addition, for every 100,000 births, 766 women die of pregnancy-related causes.

With a population of about 4.8 million (2021)¹⁶ and a density of 4 inhabitants per square kilometer, it is one of the least densely populated countries in Africa. In addition, more than half of Mauritania's population (56 percent) lives in urban areas (2021).

Demographically, women make up slightly more than half of the total Mauritanian population (50.7 percent). more than half of the total Mauritanian population (50.7 percent) 49.3% of men) according to data from the 4th RGPH conducted in 2013.

Demographically, gender inequality leads to higher fertility, delaying the start of a demographic transition. Child marriage rates remain high, which in turn leads to higher fertility and thus higher population growth. In addition, children born to mothers who are too young and uneducated are at greater risk of dying before the age of five, suffering from malnutrition, and performing poorly in school. Child marriage also contributes to higher rates of malnutrition for children born to young mothers, which also negatively affects their expected earnings as adults. Finally, child marriage has additional negative direct impacts on young women's expected earnings as adults. Ending child marriage and better educating girls could help accelerate the demographic transition and reduce population growth, which remains high at over 2.7 percent per year.

¹⁵ UNDP, « Gender Inequality Index (GII) | Human Development Reports ». 2021

¹⁶ Banque Mondiale, « Population, total - Mauritania | Data ».

In addition, gender inequality is a major source of wealth loss for the country. Globally, human capital wealth represents about two-thirds of the total wealth of countries. Thus, if gender equality in income were achieved, countries could significantly increase their human capital wealth, and thus their total wealth. This would enable them to enhance the sustainability of their development trajectory. In Mauritania, human capital accounts for only 32 percent of the country's total wealth, which is well below the average for Africa and all peer countries. This is largely due to the differences in income between men and women. In 2014, women accounted for only 21% of human capital wealth, compared to 79% for men. If women earned as much as men in the labor market, the national wealth gain could reach \$24 billion (USD), or more than \$5,000 per capita (men and women). This figure also means that Mauritania could increase its total wealth by 19% if gender equality in human capital is achieved. These estimates are intended to give an idea of the order of magnitude of the potential costs of gender inequality in terms of lost human capital wealth.

At the level of the Adrar region, the following table illustrate the structure by sex and by major age groups, reflecting the youthfulness of the resident population in the Wilaya.

On the basis of the different results, it appears that:

- Those under 15 years of age represent 41% of the population of the Wilaya. Men and women are relatively equal in this age group.
- Women of working age are more numerous than men (48% for men against 52% for women). This deficit could be explained by the emigration of the male population. Some men emigrate without their spouses.
- The female population is relatively more numerous than the male population, as about 51% of the total population of the Wilaya are women, compared to 49% of men.

Table: Population of the Wilaya by major age groups and gender

Age Group	Gender		Total
	Male	Female	
0-14	12852	12612	25464
15-59	15508	16933	32441
60+	2463	2291	4753
Total	30822	31836	62658

2. Gender consideration in education systems

Despite gains in gender parity in terms of access to education, women are lagging behind in terms of educational attainment. Despite progress in gender parity in access to basic education, literacy rates, access to higher education and years of schooling gained remain low for girls. More than a third of adolescent girls are not in school, and young women are less likely to have access to higher education than men (3.3% versus 6.6%).

In Adrar, the 2013 RGPH shows that about one in four of the Wilaya's population aged 10 and over is literate (25%) with a difference in favour of men (22%) compared to (27%) for women. It also shows that in the Wilaya of Adrar, 31.1% of heads of households are uneducated (34.6% of women versus 29.4% of men), while 27.8% have the Koranic level (27.3% of men versus 28.7% of women), while only 5.3% have the primary level.

3. Women in economic activities

Gender-based discrimination exists in multiple spheres of life, hindering Mauritanian women's participation in economic activity. Removing legal barriers would be a starting point toward a less discriminatory labor market and society. Indeed, legal discrimination is present in a number of areas, including: (i) access to certain jobs and labor market decision-making; (ii) rights related to maternity, family, and household responsibilities; (iii) property rights and access to finance; and (iv) protection from various forms of gender-based violence. In addition, child marriage, early pregnancy, and their implications for girls' education remain the main causes of gender inequality in Mauritania. Finally, although Mauritanian women have the same rights as men to vote and run for office, their voice and representation are limited due to discriminatory practices.

The report also shows that, in terms of gender, women are essentially on the margins of the exploitation of these potentialities. They are relatively well represented in certain areas such as the clothing trade, jewelry, goldsmithing, processing of natural products and fishing (production of natural beverages, artisanal processing of fish). In the formal economy, the few women present are mainly assigned to positions considered "menial".

Eight productive sectors represent important potential for Mauritania's economic diversification: agriculture, livestock, fisheries, mining, manufacturing, handicrafts, trade and tourism. The presence of women in the main sectors of interest is as follows Agriculture (22%); Industry (17%) and services (61%).

In Adrar, the male labor force in the Wilaya is larger than the female labor force (see graph below). This may be due to a number of factors, including local traditions and the very low access of women to schooling and in particular to professional diplomas.

4. Gender Equality in Decision-Making Positions

Mauritania has put in place a legal framework and institutional mechanisms for the promotion of gender and equal opportunities. In this context, the country has ratified conventions, treaties and adhered to the recommendations of

conferences and summits at both the international and regional levels. Important efforts have been made so far to harmonize efforts have been made to harmonize the national legislation with the international law¹⁷.

In order to take into account, the strategic needs of women and reduce gender inequalities, the and reduce gender inequalities, Mauritania adopted a Mauritania adopted a National Gender Institutionalization Strategy in 2015 gender institutionalization strategy in 2015 and has established gender as one of the dimensions of governance, which constitute the third pillar of the SCAPP.

In terms of institutions, significant progress has been made, despite the inadequate allocation of budgetary resources. budgetary resources, reflected in the creation in 1992 of a of a State Secretariat for Women's Affairs (SECF), which was to become the Ministry of Social Affairs, Childhood and the Family (MASEF) in 2007, responsible for, among other things coordinating the government's policy in the field of gender and the advancement of women. An Inter-Ministerial Committee for the institutionalization of gender has been in place since 2017, supported by the Technical Committee for Gender Monitoring and relayed by gender sectoral cells.

To give concrete expression to these orientations, the National School of Administration, Magistracy and Journalism, since its opening in 2011, has introduced a 10% quota for girls, and grants them the possibility of participating in the General Competition. This measure is bearing fruit, with an increased presence of women in the various bodies of public administration, journalism and the judiciary. A competitive examination for university professors has been organized specifically for women.

5. Gender vis-a-vis the Project outcomes and activities

Gender and Land

In Mauritania, there are some disparities in terms of access to land, in favor of men. This is due to customary practices and religious influences, which have established social norms and values governing the terms of access, use and transfer of ownership of cultivable land. Access to land remains a crucial issue in the lives of rural women who are most involved in agricultural production chains. This situation varies by region. In order to access land, women are forced to resort to various processes, the most common of which are access through borrowing from the family and/or women's organizations, loans and leases. Thus, analysis of the data shows persistent disparities in access to land. For example, only 4 out of 10 women are employed in the rural sector, where they have difficulty accessing land.

Water

In general, women are primarily responsible for the day-to-day tasks related to water, including its supply, transportation and storage. They are also considered the primary users of water because they are also responsible for most of the daily domestic tasks, including cooking, cleaning, health, food processing, etc. In some rural areas in Mauritania, this situation varies by region. In Adrar, men are responsible for the supply and transport of water, while women are responsible for storage and management and determine its use.

Gender and rural agricultural labour

Women in Adrar play a major role in agricultural production and are responsible for farming (cereal and palm) and hut farming, while men participate in farming (cereal and palm) and extensive livestock raising. In terms of labour supply, women and men work side by side in almost all agricultural tasks on the land, while men are responsible for marketing agricultural and livestock products. The men (fathers or husbands or brothers) market the produce (livestock, market gardening, etc.) on behalf of the women, who have access to and control over their assets and the products of their activities.

Wood and Non-Timber Forest Products (NTFP)

With a low rate of electrification of rural populations (Mauritania: 6% in 2020), most rural households still depend on biomass for energy: mainly wood and other sources. Women are responsible for collecting or purchasing wood for energy needs. As with water, this responsibility is very time consuming and can severely impact women's ability to be productive in other areas (including education and income-generating activities). IGA actions to disseminate the use of solar cookers and other energy sources.

Gender and adaptation to climate risks

Actual and potential climate risks remain a serious challenge to inclusive socio-economic development, peace and security in an arid region like Adrar. They aggravate pre-existing social inequalities. Indeed, women and other marginalized groups (the elderly and/or those living with disabilities) are often the most affected by the effects of climate change and disasters due to their limited access to resources and their dependence on agriculture and natural resources for their livelihoods, which are also highly sensitive to climate variability. This vulnerable group faces many gender-related barriers that limit their ability to cooperate and adapt to climate change. Nevertheless, women and other marginalized groups continue to be nominal actors in decision-making when implementing development and resilience projects and programs.

¹⁷ Voluntary National Review of the Sustainable Development Goals – Mauritania-2020

Under this project, an information system will be established to reduce the damage caused by these climate risks. It will ensure long-term monitoring of climate risks by producing reliable scientific data and information at different levels. The implementation of the planned activities will fully involve vulnerable groups (women and marginalized groups) by adapting the intervention strategy that will respect the habits and customs of the populations as well as the policy of the AF, Mauritania and the OSS.

The integration activities will mainly concern the involvement of women and marginalized people in the monitoring of climate risks and in the collection of data as well as the dissemination of climate information.

Gender and ecosystems preservation, management and valorisation

This project will implement on-the-ground adaptation measures and focus on building the resilience of ecosystems and populations (mainly women and youth) in the two poles of Ziyara and Dhaya. The expected results are the availability of water and the ecosystems that depend on it and the improvement of the livelihoods of vulnerable populations through the implementation of income-generating activities (IGA).

As can be seen from the information reported above, the groups most vulnerable to climate change are women and are more affected by the negative effects of climate change. Indeed, a significant effort will be made to take gender into account in the implementation of these activities.

It is therefore important to identify gender-sensitive strategies that address these crises for women in order to improve gender mainstreaming in these activities.

Gender and paradigm shift for climate risks management

The involvement of gender (women and marginalized groups) is essential for a paradigm shift in climate risk management in the project area. According to Margareta Wahlström (UN Secretary General for Disaster Risk Reduction), "countries that do not actively promote the full participation of women in education, politics and the labour market will find it harder than ever to reduce risks and adapt to climate change.

6. conclusion and recommendation for the project

In Mauritania, beyond social inequalities, women play a very important role in the education of children and in socio-economic development. They can also help relay information to households. Within the framework of this project, capacity building and awareness raising activities on climate risk adaptation practices are planned. These activities will benefit both men and women as well as marginalized groups.

The impacts of climate variability and change, including recurrent droughts, are contributing to the exacerbation of gender-based vulnerability in Mauritania, particularly in the Adar region, where the project is located. The solutions proposed by this project will consolidate and operationalize an enabling and transformative gender environment to reduce this differentiated vulnerability, particularly for women, girls and children. The implementation of the project activities is based primarily on gender mainstreaming.

In order to address the important challenges mentioned above and improve gender equality, the project's efforts will contribute to (i) Promote women's economic opportunities, including access to employment, assets and other productive resources; and (iii) Improve women's voice, autonomy and representation.

This will be undertaken through (i) initiatives to strengthen and develop women's leadership; (ii) advocacy campaigns on gender and women's and girls' rights. These actions will be conducted in partnership with civil society.

Therefore, in accordance with the Adaptation Fund procedure, a detailed gender assessment analysis will be conducted at the full proposal stage and a gender action plan (GAP) will be provided to ensure the effective participation of women and marginalized groups in the planned activities. To this end, a gender assessment is included among the thematic studies to be conducted during the full proposal phase and a significant budget has been allocated in the PFG.