MAURITANIA: NAPA PROJECT PROFILE

MAURITANIA

NAPA PRIORITY PROJECT 1

MAURITANIA NAPA SECTION 7.4 WATER

CONTRIBUTION TO A BETTER KNOWLEDGE OF THE SURFACE WATER REGIMES IN TWENTY (20) CATCHMENT AREAS

Locality	Ecological zones: fluvial, pluvial and oasis
Sector	Water
Field	Mainland surface water
Type	Institutional
PIP Reference	Water and Pastoral Village Project in the Sahel region

RATIONALE

The catchment areas with unknown regimes in the three ecological zones of the country, in case of heavy precipitation, or extreme drought, generate significant socio-economic damage.

Consequently a contribution to the knowledge of their hydrological regime constitutes a priority. Hence the necessity to carry out evaluation studies of the resource by setting up functional networks for hydrological monitoring, enabling early alarms to be sounded to protect people and their property against disaster: Floodingings and/or drought.

DESCRIPTION

General objective

The improvement of the state of knowledge on the resources in mainland surface water with regard to the three ecological zones of the country, with a view to rational management.

Specific objectives

- Establishment of networks of operational measures;
- Publication of monthly news bulletins during the rainy season;
- Capacity building.

Expected outcomes

- Establishment of a functional network;
- Reports on resource development published periodically;
- Quantity of training carried out.

Activities

- Acquire the material before the rainy season;
- Install the monitoring tools;
- Recruit management staff, agents, observers in the field;
- Organise measurement and data collection campaigns;
- Data processing;
- Disseminate news flashes, periodic reports and almanacs on the development of resources;
- Take part in workshops and in advanced training courses;
- Create awareness of methods of saving water;

- Provide advice to the various contributors.

IMPLEMENTATION

Administrative arrangements

- The Department of Rural Development will carry out the project in cooperation with the state structures concerned, the private sector, donors, civil society and local communities.
- The project is initiated by NAPA and will be supervised by its steering committee.
- The management of human and material resources (management staff, agents, observers, field and office equipment) of the project is defined as well as users' participation in the protection of the tools and data collection.

Risks and obstacles

- Floodings/ droughts;
- Pollution;
- Increased rural exodus;
- Bottlenecks.

Monitoring and assessment

- Reports, minutes, field visits, inspections midway though the process, audits, etc, providing performance and impact indicators including:
- Nmber of monitored and equipped catchment areas;
- Nmber of trained and recruited observers;
- Nmber of recruited management staff and agents;
- Etimate of losses avoided or reduced through early warning messages.

Duration

3 years

COST

USD 423,990

MAURITANIA

NAPA PRIORITY PROJECT 2

MAURITANIA NAPA SECTION 7.4 WATER

CONTRIBUTION TO INCREASED VALUE OF SURFACE WATER BY CONSTRUCTION OF TWELVE (12) FLOODING DECELERATION GATES: PLUVIAL ZONES (GUIDIMAKHA) AND ESPECIALLY OASIS ZONES (ADRAR)

Location	Wilayas of Adrar and Guidimakha
Sector	Water
Field	Mainland surface water
Type	Investment
PIP Reference	Dam construction in the Affole

RATIONALE

The removal of water for agricultural, pastoral, mineral and industrial needs continues to increase in support of development. This situation has led to an ever-increasing pressure on the very limited resources of fresh water, which are vulnerable and very unevenly distributed in space and time in an arid country.

These devices are necessary in the oasis and/or pluvial zones where intensive irrigation and Walo crops are impossible.

DESCRIPTION

General objective

Construction of Flooding deceleration gates to increase the availability of water in the water table.

Specific objectives

- Availability of water from the water table to ensure use in various seasons;
- Improvement of the living conditions of communities in the project zone;
- Decrease in GHG emissions.
- Expected outcomes
- Work effectively carried out;
- Drop in rural poverty observed;
- Decrease in GHG emissions.

Activities

- Increase staff;
- Carry out studies;
- Organize workshops for preventive maintenance and repair of works;
- Increase productivity;
- Reduce the time devoted to fetching water;
- Decrease the rate of GHG emissions.

IMPLEMENTATION

Administrative arrangements

The Department of Rural Development will carry out the project in cooperation with the state structures concerned, the private sector, donors, civil society and local populations.
The project is initiated by NAPA and will be supervised by its steering committee.
The management of human and material resources (management staff, agents, field and office equipment) of the project is defined as well as the users' participation in the implementation of the project.

Monitoring and assessment

- Reports, minutes, field visits, reviews midway though the process, audits, etc. containing certain competence and impact indicators including:number of devices installed;
- Increase in agricultural productivity;
- Decrease in fetching of water;
- Number of communities trained;
- Diversification of activities.

Risks and obstacles

- Degradation of the environment;
- Silting up and filling with sand of basins;
- Abandonment of land;
- Increased rural exodus;
- Conflicts of competence;
- Bottlenecks.

Duration

4 years

COST

USD 604,170

MAURITANIA

NAPA PRIORITY PROJECT 3

MAURITANIA NAPA SECTION 7.3 AGRICULTURE

PROMOTION OF WATER-SAVING IRRIGATION METHODS IN OASIS ZONES (DRIP METHOD PILOT SCHEMES)

Locality	Adrar, Tagant, Assaba, Hodh Gharbi and Hodh Charghi
Sector	Rural Development
Field	Agriculture
Type	Pilot investment project
PIP Reference	Rural development in the Adrar Oases

DESCRIPTION

Objectives

- Promotion of water-saving irrigation methods: the drip technique through pilot schemes provided for by the scope of this project;
- Reduction of pumping costs;
- Improvement of producers' expertise.

Activities

- Implementation of activities to create awareness and to identify the sites which will be covered by the project through missions, diagnostic research, etc.;
- Training of fruit growers in network maintenance through training courses, seminars, meetings, etc.;
- Acquisition and the installation of pumping equipment and of the irrigation network;
- Monitoring and the maintenance of networks;
- Support to producers and their SPOs for establishment of workshops (units) for construction and maintenance of this type of network to ensure the widest dissemination among the producers and to ensure its permanence.

Expected outcomes ·

- Improvement in productivity of the palm tree and of related crops;
- Increase fruit growers' incomes through the decrease of costs of pumping;
- Rational management of the water from the water table by the restriction of losses due to the traditional irrigation method through open culverts;
- Protection of palm trees against contamination by germs capable of causing dangerous plant disease such as Bayoud disease;
- Reduction of the rural exodus and ensuring the populations' nutritional and food security;
- Contribution to national food security.

IMPLEMENTATION

Administrative arrangements

The project will be carried out by the Department of Agriculture which will set up a small steering structure for the project following a participatory process. It is also important that a broad, efficient and effective partnership be developed with fruit growers, the associations, cooperatives and national and international NGOs involved in the

oasis sub-sector, the central and regional technical departments of MRDE, private sponsors and other stakeholders in oasis development

Risk and obstacles

- Reluctance of producers;
- Delay in acquisition of equipment or in obtaining funding.

Monitoring and assessment indicators

- productivity of the palm tree and of sub-oasis crops;
- Farmers' income;
- Oasis populations' nutritional and food level;
- Permanent establishment of communities on their land (level of rural exodus);
- fertilizer protection.

Duration

3 years

COST

USD 1,200,000

MAURITANIA

NAPA PRIORITY PROJECT 4

MAURITANIA NAPA SECTION 7.4 WATER

EDUCATION IN THE USE OF FIFTY (50) ELECTRIC MOTOR PUMPS IN THE VALLEY

Locality	Fluvial zone
Sector	Water
Field	Mainland surface water
Type	Investment
PIP Reference	Not included in PIP

RATIONALE

Increase in value of the (OMVS) high tensions electrical lines serving the right bank of the Senegal river;
Substantial saving on the national energy bill;
Contribution to decrease of GHG emissions.

DESCRIPTION

General objective

Improvement of agricultural productivity in the valley through irrigation by electric motor pumps.

Specific objectives

- Irrigation of 1,000 hectares by electric motor pumps;
- Saving on foreign exchange;
- Decrease in GHG emissions.

Expected outcomes

- Surface area irrigated by hydro-electric motor pumps increased;
- Rate of GHG emissions decreased;
- Saving on foreign exchange achieved.

Activities

- Install electric motor pumps in the framework of a pilot project of 1,000 hectares which have already been rehabilitated;
- Organize awareness, training and education campaigns;
- Recruit and train five (5) engineers for management, agents and support staff;
- Decrease significantly the use of GMP (gas-oil);
- Ensure the timely maintenance and repair of electric MP;
- Extend the experiment beyond the project.

IMPLEMENTATION

Administrative arrangements

The Department of Rural Development will carry out the project in cooperation with the state structures concerned, the private sector, donors, civil society and local populations.
The project is initiated by NAPA and will be supervised by its steering committee.

The management of human and material resources (management staff, agents, field and office equipment) of the project is defined as well as the users' participation in the implementation of the project.

Monitoring and assessment

Reports, minutes, field visits, reviews midway though the process, audits, etc., containing certain competence and impact indicators including:

- number of tasks achieved;
- increase in agricultural productivity;
- decrease in fetching of water;
- number of communities trained;
- diversification of activities.

Risks

- Pollution and unmitigated harmful effects;
- Technologies which have not been fully mastered;
- Increased rural exodus;
- Conflict of areas of competence;
- Bottlenecks.

Duration

3 Years

COST

USD 1,050,630

MAURITANIA

NAPA PRIORITY PROJECT 5

MAURITANIA NAPA SECTION 7.4 WATER

SUPPORT TO THE DISSEMINATION OF THE DRIP TECHNIQUE IN THE RIVER VALLEY AND THE OASIS ZONES FOR THE DEVELOPMENT OF 300 HECTARES

Locality	ecological zones: fluvial and oasis
Sector	water
Field	mainland surface water
Type	investment
PIP Reference	Water and pastoral village project

RATIONALE

The enormous use of water in the various sectors is resulting, given the worsening of the climate, in an ever-increasing pressure on the very limited resources of fresh water, which are vulnerable and very unevenly distributed in space and time in an arid country. It is in an effort to preserve such resources, that the drip method will be disseminated in the river valley and the oasis zones.

DESCRIPTION

General objective

Dissemination of the drip method in order to reduce the pressure on water resources.

Specific objectives

- Improvement of the living conditions of rural populations;
- Rational management of the water resource;
- Reduction of GHG emissions in the atmosphere.

Expected outcomes

- Optimal management of the resource adopted by the users;
- New water-saving cultivation methods adopted and spread throughout the country;
- GHG emissions reduced through the propagation of new methods more attentive to environmental degradation.

Activities

- Acquire field equipment;
- Collect data on consumption;
- Recruit five (5) engineers and agents;
- Arrange training and awareness raising workshops on the use of the drip method;
- Ensure the promotion of the equipment by reduction of prices;
- Dissemination of reports and almanacs on the development of the method and its appropriation by the targeted populations;
- Publicize the rate of avoided emissions.

IMPLEMENTATION

Administrative arrangements

- The Department of Rural Development will carry out the project n cooperation with the state structures concerned, the private sector, the donors, civil society and the local communities;
- The project is initiated by NAPA and will be supervised by its steering committee;
- The management of human and material resources (management staff, agents, field and office equipment) of the project is defined as well as the users' participation in the implementation of the project.

Risks and obstacles

- Lack of input stocks;
- Lack of maintenance;
- Increased rural exodus;
- Conflicts of areas of competence;
- Bottlenecks.

Monitoring and assessment

Reports, minutes, field visits, reviews midway though the process, audits, etc. containing certain competence and impact indicators including:

- Developed surface area;
- Number of trained rural inhabitants;
- Decrease in water expenditure;
- Rate of GHG emissions avoided.

Duration

3 years

COST

USD 433,990

MAURITANIA

NAPA PRIORITY PROJECT 6

MAURITANIA NAPA SECTION 7.1 LIVESTOCK FARMING

PROMOTION OF LIVESTOCK MOBILITY: DISSEMINATION OF THE PASTORAL CODE AND SUPPORT MEASURES

Locality	National
Sector	Farming
Field	Pastoralism
Type	Education and creation of awareness
PIP	Reference Development of Livestock farming

RATIONALE

Settlement as a consequence of climate change has considerably disturbed the organisation of livestock movement and caused the degradation of pasture lands in the populated areas, particularly around the large and relatively durable watering points (ponds and rivers) and around inhabited areas where bought-in fodder increasingly has to compensate for the decrease of pasture available. Thus, for breeders, livestock mobility is their only recourse against lack of fodder and/or water.

DESCRIPTION

Rationale

- Sustainable exploitation of natural resources;
- Improvement of livestock herders' revenue bases through organizational and investment measures.

Objectives

- Safeguarding of pasture space;
- Establishment of protected pasture space, creating an inalienable and indefeasible public space;
- Preservation of livestock mobility;
- Guaranteed free access for the breeders to pastoral resources (grassy, open pastures, surface or underground water, Amersal pits and licking grounds);
- Consideration of pastoral interests in all development activity involving the pastoral space.

Activities

- Organisation of an awareness and education campaign on the pastoral code. This will have two objectives:
    - Circulation of information on the pastoral code: this campaign will require the organisation of many workshops and meetings;
    - Identification of implementation tools.
- The campaign to create awareness of, and to educate people concerning popularize the pastoral code will take place at the local level, an area whose boundaries are acknowledged by a given local community and which is worked in the traditional way by the members of the community.
- Strengthening of the organisational capacities of the breeders through training, advice and assistance from the technical services.
- The development of support measures (investment, etc).

Expected outcomes

- Rational management of natural resources;
- Improvement of access to pastoral resources;
- Preservation of pastoral function of the wetlands;
- Protection of system of sustainable management of natural resources.

IMPLEMENTATION

Administration Arrangements

The project will be placed under the supervision of the Department of Livestock farming. DRTE, in collaboration with the Department of Livestock farming and the regional Delegations, could undertake a campaign creating awareness and education concerning the pastoral code. However, the Department of Livestock farming, together with its decentralized technical services, will be responsible for the implementation of the infrastructures.

Risks and obstacles

- Partitioning of the space;
- Frustration of farmers;
- Significant fluctuation of fodder resources both in space and in time;
- Under-exploitation of the grazing routes through lack of watering points;
- Failure of system of information to farmers;
- Survival of traditional movement of livestock as regards routes followed;
- In the absence of adaptation and modification of the old systems of resource management, demographic growth, settlement of the population and the search for remunerative activity constitute threats to the environment, especially around inhabited areas;
- Quantitative and qualitative deficit of infrastructures to accommodate and care for animals in the markets, methods of transport used and by the absence of marked out routes for sending livestock to the markets and of routes for movement of herds.

Monitoring and assessment

Indicators

- Degree of awareness of pastoral code (survey) and its application;
- Number of conflicts resulting from land use;
- Composition of vegetation around water points and in the marked out spaces;
- Organisational capacity of the Socio-Professional Organisations.

Duration

18 months

COST

USD 300,000

MAURITANIA

NAPA PRIORITY PROJECT 7

MAURITANIA NAPA SECTION 7.5 LAND ECOSYSTEMS

THE REORGANIZATION OF POPULATIONS ADVERSELY AFFECTED BY CLIMATE CHANGE, TAKING INTO CONSIDERATION THE OPTIONS THEY HAVE ALREADY ADOPTED

Locality	The target areas are the outlying suburban areas of large urban centres, the wetlands and the tarred roads used by the target populations.
Sector	Rural
Field	Fixation of communities on their lands
Type	Social
PIP Reference	Not included in PIP

RATIONALE

The climate changes resulting from the deterioration of the rainfall level have affected the great majority of the rural and nomadic populations. This situation has driven these populations to adopt various strategies to adapt to the new conditions. These strategies include rural exodus, connection between tarred roads and permanent settlement in the favourable areas (wetlands).

DESCRIPTION

Objectives

This situation is harmful to the ecosystems which host these populations and even to these populations themselves. Hence, reorganization of these populations seems necessary.

Activities

The activities to be carried out are the redirection of options already adopted by the populations: population settlement along the tarred roads (adaptation to climate change) and disordered settlement.

Expected outcomes

The expected outcome is the establishment of the populations adversely affected by climate change.

IMPLEMENTATION

Administrative arrangements Administratively, the project will depend on the institution responsible for Nature conservation. Its activity must be complementary to other activities from other relevant ministerial departments.

Risks and obstacles

The risks and obstacles which might be encountered by this project are related to the conditions necessary to make the adaptation options viable and respectful of the environment. It is a question of satisfying the needs of the newly fixed populations as regards drinking water, power, agricultural land, income generating activities, schools, health centres, etc.

Monitoring and assessment indicators

The impacts of the project will be evaluated through the new situation of the newly settled populations. For the purposes of monitoring, the project will be reviewed midway and at the end of the process, and will be subject to audits and field visits and quarterly and half-yearly reports.

Duration

2 Years

COST

USD 600,000

MAURITANIA

NAPA PRIORITY PROJECT 8

MAURITANIA NAPA SECTION 7.1 LIVESTOCK FARMING

PROMOTION AND DEVELOPMENT OF DOMESTIC POULTRY FARMING

Locality	National
Sector	Livestock farming
Field	Improvement of food
Type	Food security and fight against poverty
PIP	Reference Special Support Programme for Food Security

RATIONALE

The development of domestic poultry farming constitutes an important channel for the improvement of the living conditions of low-income households adversely affected by climate change.

Moreover, it allows rural women in particular to be reached through agreed actions for improvement, and can thus give access to the integration of women in the development of small-scale farming in general.

DESCRIPTION

Objectives

- Introduction of an additional activity for rural women;
- Development of rural poultry farming, improvement of white meat production;
- Increase of food for consumption (especially meat);
- Increase of income of rural women (fight against poverty).

Activities

The project will provide women's co-operatives with a sufficient number of hens and possibly pedigree cockerels. The main basic actions should revolve around preventive treatment, especially vaccination against Newcastle disease, and secondly, anti-parasite treatment. Drinking water must be permanently available and of good quality. Efforts should be made concerning the accommodation conditions (ventilation, no over-crowding, bedding, etc.) and hygiene.

Food should be improved through maximum use of local byproducts (sorghum, millet, calcinated bone powder, rice bran, kitchen scraps).

Finally, genetic improvement may be envisaged by the introduction of pedigree cockerels. The choice of breeding stock will be based on a thorough evaluation of their real suitability (consumption rating, growth rate, resistance to disease and to local climatic conditions.

Expected outcomes

- Country self-sufficiency in meat;
- Fight against poverty;
- Food security (animal proteins);
- Creation of permanent jobs;
- Improved local breeds, leading to increased production;
- Increased production (eggs and meat);
- Increase of rural women's income.

IMPLEMENTATION

NCFVR, through its veterinary service will pilot this operation with Administration arrangements assistance from the Department of Livestock farming and the cooperation of the National Group of Mauritanian Poultry-Breeders and women's co-operatives

Risks and obstacles

- Humidity increases parasite infection risks;
- Predators;
- Genetic constraints;
- Food value of chicken feed.

Monitoring and assessment

Indicators

- Share of traditional poultry farming in national production;
- Productivity of improved breeds;
- Importation of white meat.

Duration

2 years

COST

USD 300,000

MAURITANIA

NAPA PRIORITY PROJECT 9

MAURITANIA NAPA SECTION 7.3 AGRICULTURE

IMPROVEMENT OF CULTIVATION METHODS IN PLUVIAL ZONES AND INTRODUCTION OF NEW VARIETIES OF DROUGHT-RESISTANT HIGH-YIELD CEREAL

Sector	Rural Development
Locality	Adrar, Tagant, Assaba, Hodh Gharbi, Hodh Chargui, Inchiri, Guidimaka, Gorgol, Trarza and Brakna.
Field	Agriculture
Type	Support project for the upgrading of the pluvial sub-sector
PIP Reference	Support to the special programme for food security

RATIONALE

Rain-fed agriculture is greatly dependent on rainfall which inevitably subjects it to the adverse effects of climate change (decrease in rains and their random nature). From this arises the necessity to improve the cultivation methods and the introduction of varieties of drought-resistant cereal.

DESCRIPTION

Objectives

- Improvement of yields taking into account cultivation methods types and the protection of crops against stray animals and their enemies;
- Effective use of the producers' working time;
- Introduction of new varieties;
- Improvement of producers' expertise to improve their performance;
- Implementation of activities to create awareness and to enable identification of the sites to be covered by the project through missions, diagnostic research, etc.

Activities

- Acquisition of agricultural equipment for ploughing, mowing and weeding;
- Training of producers in efficient and effective use of the equipment through training programmes, seminars, sessions, etc;
- Identification, then the experimental use, of high-yield, fast-growing varieties, suitable for various zones.

Expected outcomes

- Improvement of productivity of rain-fed crops;
- Increase in farmers' incomes;
- Improvement of farmers' knowledge;
- Reduction of rural exodus and ensuring food and nutritional security of the People;
- Contribution to national food security.

IMPLEMENTATION

Administrative arrangements

The project will be carried out by the NCAARD, which will establish a small steering structure, following a participatory process. It is also important that a broad, efficient and effective partnership be developed with: farmers, cooperatives, national and international NGOs involved in the pluvial sub-sector, central and regional technical departments of MRDE, the private sponsors and other stakeholders in development.

Risks and obstacles

- Reluctance of producers;
- Delay in acquisition of equipment or in obtaining funds, etc.

Monitoring and assessment indicators

- Crop yields;
- Farmers' incomes;
- Oasis populations' nutritional and food level;
- Permanent establishment of communities on their land (level of rural exodus).

Duration

3 years

COST

USD 1,270,000

MAURITANIA

NAPA PRIORITY PROJECT 10

MAURITANIA NAPA SECTION 7.2 FOREST

SUBSTITUTION OF LIGNEOUS FUEL

Locality	National. The country's forest zones (the river zone and the south- eastern part of the country) urban populations (those of Nouakchott, mainly and those living near forest zones).
Sector	Forest
Field	Domestic energy
Type	Investment
PIP Reference	Rural community development project

RATIONALE

The forests are over-exploited (wood cutting) to satisfy the energy needs of (mainly) urban and rural households. Studies have shown that the energy demand of Mauritanian households cannot be met solely by the country's ligneous cover in the short or long-term. Thus, in order not to exhaust all the country's forests, this demand needs to be satisfied through another form of energy. Butane gas is the most suitable form to address this ever-increasing demand, particularly in urban centres.

DESCRIPTION

Objectives

The general objective is to put an end to the pressure exerted on the forest cover.
The specific objective is to substitute wood and charcoal used as domestic fuel by butane gas.

Activities

- Raise public awareness of the necessity of using butane gas instead of wood and charcoal;
- Provide affordable butane gas and help the people (particularly those in rural areas and the outlying suburbs of the big urban centres);
- Develop income-generating activities to redeploy people who had been engaged in the business of selling wood and charcoal.

Expected outcomes

Use of butane gas instead of wood and charcoal in urban and rural households.

IMPLEMENTATION

Administration arrangements

The project will be jointly carried out by the institution responsible for the environment in cooperation with the department responsible for energy.

Risks and obstacles

The risks and obstacles relate to poverty (ability to purchase the equipment) of the target populations (rural populations and of outlying suburban areas) and to their eating habits. They also relate to the availability of gas in the rural areas at prices that are competitive with those of wood and charcoal.

Monitoring and assessment indicators

The impacts of the project will assessed through the decrease of pressure on the country's ligneous cover. For the purposes of monitoring, the project will be reviewed midway and at the end, and will be subject to audits and field visits, quarterly and half-yearly reports.

Duration

2 years

COST

USD 700,000

MAURITANIA

NAPA PRIORITY PROJECT 11

MAURITANIA NAPA SECTION 7.5 LAND ECOSYSTEMS

PARTICIPATORY REFORESTATION FOR ENERGY AND AGRO-FORESTRY IN THE AGRICULTURAL ZONES

Locality	The rural environment and the farming areas and their populations.
Sector	Agro-forestry
Field	Agriculture/Forestry
Type	Investment
PIP Reference	Decentralized rural electrification. Phase I

RATIONALE

Trees play an important role with regard to the fields: They provide shade and diversify production (firewood, wood for use and fodder). Hence, this type of project covers the development of quickset hedges, the association of trees and crops and small areas of reforestation on the basis of rapid growth.

In addition, rural women are having to move further and further afield to find wood. The pressure on the forest formations is being felt more and more by the villagers through the scarcity of local products. It seems prudent to carry out reforestation for energy and to associate trees with crops.

DESCRIPTION

Objectives

The general objective of the project is the sustainable management of agricultural ecosystems through the introduction of the tree into cultivation systems. The specific target is the improvement of ligneous production (firewood, wood for use and fodder) through partnership with trees.

Activities

The activities to be carried out are the planting of quickset hedges, village reforestation and the introduction of trees in partnership with crops.

Expected outcomes

The chief expected outcome is the partnership of trees and crops for improved protection of soils and the planting of fast-growing species to satisfy the populations needs in the agricultural environment for ligneous products.

IMPLEMENTATION

Administrative arrangements

The project will be carried out jointly by the institution responsible for the environment in cooperation with that responsible for agriculture.

Risks and obstacles

The risks and obstacles can only be of a financial order or related to rigorousness of implementation of the planned activities

Monitoring and assessment indicators

The impacts of the project will be evaluated through the village reforestation carried out and the level of introduction of trees into farming environments. For the purposes of monitoring, the project will be reviewed midway and at the end of the process, as well as being subject to audits and field visits and quarterly and half-yearly reports.

Duration

5 Years

COST

USD 1,000,000

MAURITANIA

NAPA PRIORITY PROJECT 12

MAURITANIA NAPA SECTION 7.1 LIVESTOCK FARMING

GENETIC IMPROVEMENT OF THE LOCAL BOVINE BREEDS

Locality	South and south-east Mauritania
Sector	Farming
Field	Genetic improvement
Type	Increase of production
PIP	Reference Development of farming

RATIONALE

Livestock farming in Mauritania is almost exclusively transhumant. In addition, the poor potential of the local breeds does not allow a high level of profitability from the activity. The production level is caused by the low genetic level of the animals. Hence the necessity to genetically improve the local bovine breeds.

DESCRIPTION

Objectives

- Improvement of milk and meat production through improvement of the genetic potential of the bovines;
- Have more productive animals, more efficient in terms of use of the resources (lower input/production ratio).

Activities

Improve knowledge of the performance of the various breeds depending on the main systems in which they develop. This genetic improvement is achieved through two techniques: selection and cross-breeding.

Expected outcomes

- Reduction of animal pressure (fewer animals to care for, for the same level of production);
- Food security;
- Health: more productive but often more vulnerable animals.

IMPLEMENTATION

Administration Arrangements

This operation will initially concern the river region. The project will be under the supervision of the Department of Livestock farming in cooperation with NCFVR, breeder organisations and private promoters. It will last four years.

Risks and obstacles

- Difficulties in controlling genetic progress in intensive farming systems;
- Reduction of animal bio-diversity;
- Introduction of new diseases;
- Problems, for some improved breeds, concerning living in certain environments;
- Change in the perception of the value of species and breeds;
- More choice of production characteristics;
- Need for more efficient farm management.

Management and assessment indicators

- Level of production;
- Animal productivity;
- Level of pressure on resources.

Duration

3 years

COST

USD 500,000

MAURITANIA

NAPA PRIORITY PROJECT 13

MAURITANIA NAPA SECTION 7.4 WATER

IMPROVEMENT OF MANAGEMENT OF UNDERGROUND WATER RESOURCES IN THE AFTOUT ZONE

Locality	South and Central Mauritania (Brakna, Gorgol, and Assaba) Dhar water-bearing bed
Sector	Water
Field	Underground Water
Type	Institutional and Investment
PIP Reference	Not included in PIP

RATIONALE

The phenomena linked to climate changes have caused the scarcity of surface water, the drying up of wells and springs, the fall in the level of the water tables and the increase in salinity.

This situation is compounded by the marked increase in water use to meet agricultural, human, pastoral, mineral, and industrial requirements.

Fresh water resources are scarce, vulnerable and very unevenly distributed in space and time. It is essential therefore to implement a policy of:

- Rationalization of the use of the resource by the decrease in waste of the resource and by the population's participation in the burden of water costs (minor maintenance work on hydraulic equipment);
- Safeguarding of water quality through campaigns to create awareness of problems related to hygiene on water and by the establishment of protection zones around the water supply points.

DESCRIPTION

Objectives

To improve the quality of operation and use of the underground water resource in the Aftout (the Wilayas of Gorgol, Assaba and Brakna) in order to protect its quality to optimise water supply points .

Activities

- Carry out community awareness and activity campaigns on the use of water;
- Establish protection zones around water supply points;
- Make people participate in paying for the cost of water cost through the local communities;
- Organise the beneficiary communities into water point committees with manual pumps;
- Sign maintenance contracts with the National Agency for Drinking Water and Sanitation (NADWS) responsible for the thermal and solar DEP and SPM networks.

Expected outcomes

- Protection of the resource against pollution phenomena;
- Rationalization of use of the resource;
- State disengagement from minor maintenance work on pumping systems;
- Signature of management and maintenance contracts for places equipped with network of water supply with NADWS.

IMPLEMENTATION

Administrative arrangements

This project falls within the brief of the NADWS mission, and MRDE is to hand over the technical management of this project to MWE through a protocol of agreement. A coordination unit responsible for the financial management will be set up.

Risks and obstacles

The risks and obstacles of this project are:

- Conflicts of areas of competence between the NAPA authorities and NADWS;
- Refusal by the people to agree to the project targets.
- Monitoring and assessment indicators
- Number of water supply committees established;
- Number of protection areas created;
- Number of maintenance contracts signed;
- Number of pumps powered by humans and number of technicians trained;
- Number of awareness workshops organised.

Duration

3 Years

COST

This project fits into the framework of the adaptation measures related to climate change and complements the support project to the reform of the sectors of water, sanitation and energy. This project is initiated by NAPA and its request for funding is submitted to the partners in development.

Estimated at USD 250,000.

MAURITANIA

NAPA PRIORITY PROJECT 14

MAURITANIA NAPA SECTION 7.6 MARINE AND COASTAL ECOSYSTEMS

PROTECTION OF THE DIVERSITY OF THE FISH POPULATION AND PREVENTION OF OVER-FISHING WITH A VIEW TO SUSTAINABLE DEVELOPMENT

Locality	The project is located in Nouadhibou
Sector	Coastal ecosystems
Field	Fishing
Type	Productive and social project
PIP Reference	Support for fishing research

RATIONALE

Fish resources are facing increasing difficulties, especially the degradation of part of the marine and coastal ecosystems, the over-fishing of a few of the main species in demand, illegal incursions of the fishing fleet into prohibited zones, the use of prohibited fishing equipment or which are not sufficiently selective, intensification of the competition between traditional, and industrial fishery.

As a result of climate change, the alterations in the characteristics of the marine currents (temperature, salinity, etc.) and of the general movement of the oceans, the rising of the sea level, etc, will certainly have an effect on the productivity of these ecosystems, the marine and coastal habitat and the diversity of the resource.

DESCRIPTION

Objectives

- To ensure the establishment of rules and norms taking into consideration the requirements of the fish habitat in the planning of coastal development;
- To extend monitoring of the resource which is currently limited to the whole EEZ;
- To promote through targeted programmes the genetic diversity of fish populations by fish farming;
- To create awareness among the various stakeholders on innovative fishing techniques.

Activities

Section 1: Technical aspects

- To integrate by 2009, the aspect of climate change into coastal planning in order to take account of the requirements for the fish habitat;
- Studies for the implementation of development plans for fisheries, particularly with a view to prohibiting the fishing of certain species very susceptible to the effects of climate change;
- Introduction of the CC dimension into all the programmes and projects in the fishing sector;
- Equipping the Department of Surveillance of Fisheries and Marine Control (DSFSC) with effective means to make possible the Exclusive Economic Zone (EEZ) surveillance by the provision of buying patrol boats, radar equipment, human resources, etc.
- The development of simple techniques adapted to climate change contexts in the field of fish farming to preserve genetic diversity.

Section 2: Aspect of creating awareness

- Drafting of an IEC strategy adapted to the needs of the fishing sector regarding climate change and the risk of exhaustion of fishing resources;
- Implementation of the IEC strategy through the various channels of communication (radio, TV, press, etc.);

- Monitoring and assessment of the communication strategy.

Expected outcomes

Section 1: Technical aspects

- Technical tools are created;
- Regulations prohibiting over-fishing of rare species are drafted, adopted and enforced;
- Aspect of climate change is taken into account in fishing sector programmes;
- DSFSC is equipped with effective means to carry out EEZ surveillance;
- Fish farming methods are implemented in a significant way to preserve the genetic diversity of the fish populations.

Section 2: Creation of awareness

- An adapted and operational IEC strategy is implemented through the various communication channels (radio, TV, press) and is monitored.

IMPLEMENTATION

Administrative arrangements

The project will be steered by a small multi-sectoral structure led by a committee bringing together all the sectors involved in the implementation of the project.

Risks and obstacles

The monitoring process will have the following characteristics:

- Monitoring of the implementation of the project by the coordination and the multi-sectoral committee;
- Monitoring of activities;
- Monitoring midway through the project involving all the stakeholders.

Expected Outcomes

- Sustainable exploitation of the fishing resource, particularly that which is susceptible to climate change;
- Habitats are preserved;
- The fishing population carry out their activities in accordance with the standards of sustainable use;
- Diversification and increase in income for fishermen.
- Strong involvement of the population;
- Climate change taken into consideration in fishing sector policy;
- IEC programme carried out;
- DSFSC equipped with human and material resources;
- All the project activities carried out in the required time;
- The expected results achieved.

Duration

Five Years (2005-2009)

COST

USD 1,337,000

MAURITANIA

NAPA PRIORITY PROJECT 15

MAURITANIA NAPA SECTION 7.1 LIVESTOCK FARMING

INTRODUCTION OF NEW FODDER SPECIES ON THE NATURAL GRAZING ROUTES

Locality	Tiris-Zemmour, Inchiri, Tagant
Sector	Livestock farming
Field	Food
Type	Development for structuring the routes
PIP	Reference Management of routes and development of Livestock farming

RATIONALE

In arid zones, the continuous degradation of the routes creates vast barren areas subject to wind and rain erosion and which are in the end lost as pasture. These barren areas end up with cover poor in vegetation and a low reserve of seed in the soil. Hence the necessity to introduce new fodder species into the natural pastures routes.

DESCRIPTION

Objectives

- Initiate rehabilitation of the routes;
- Increase plant cover by introducing appropriate species;
- Achieve a vegetation composition of the pastures offering maximum animal production in the short term and the most sustainable possible in the long term;
- Use pastures and grazing routes which have no or few surface water resources;
- Improve productivity of the herd.

Activities

- Planting pasture through seeding after clearing, ploughing, and preparation of the seed beds;
- Seeding by simple manual, mechanic or aerial sowing of the natural grazing routes;
- Planting of cuttings and young plants.

Expected outcomes

- Better provision of fodder and pasture after the establishment plants and ligneous fodder;
- Improved living standards thanks to the more stable lifestyle of the stockbreeders which gives them access to social services;
- Increase of all farming and herd parameters (milk, reproduction, meat, health);
- Improvement of bio-diversity (increase of number of species in local vegetation);
- Improvement of soil fertility;
- Increased fixation of CO2 in the grazing routes.

IMPLEMENTATION

Administration Arrangements

The project will be under the supervision of the Department of Livestock farming in collaboration with NCFVRand NCAARD. Thus, the breeder organisations, co-operatives and NGOs active in the environment will be involved.

Risks and obstacles

- Reduction of bio-diversity (implanting of standardized pastures, introduction of weeds and invasive species in competition with the local species);
- damage caused to the livestock during the implantation process;
- introduction of weeds, harmful insects, disease and predators;
- decrease and poor distribution of rainfall causing lowering of water table.

Monitoring and Assessment indicators

- Difficulties in buying seeds and plants;
- Land tenure system (communal lands);
- Encroachment of sand into the pasture zones;
- Decrease of the natural fodder resources;
- Disorderly settlement and concentration of rural communities.
- Bio-diversity of the fauna and flora;
- Rate of soil vegetation cover;
- Measure of vegetation cover and measure of plant biomass (contribution to the biomass of the species sown or planted or the total vegetation cover);
- Number of heads of livestock in the rehabilitated zones;
- Evaluation of livestock mobility;
- Number of animals visiting the drinking points;
- Surface area of tree cover and barren zone (at various distances from the water sources).

Duration

2 years

COST

USD 600,000

MAURITANIA

NAPA PRIORITY PROJECT 16

MAURITANIA NAPA SECTION 7.6 MARINE AND COASTAL ECOSYSTEMS

THE PROTECTION AND REINFORCEMENT OF THE DUNE BAR ALONG THE COASTLINE IN NOUAKCHOTT

Locality	The project is located in Nouakchott
Sector	Coastal ecosystems
Field	Coastal
Type	Social project
PIP Reference	Urban development programme

RATIONALE

In Nouakchott the sands of the coastal bar, the town's only natural protection against marine incursions during heavy storms, are currently over-exploited and the dune bar has been weakened in various places. This bar is also subjected to almost uncontrolled developments which have strongly contributed to weakening it. The frequency and intensity of these storms will certainly increase as a result of climate change. In particular, they will result in heavy Flooding affecting most districts of the town. Nouakchott accommodates over 25% of the country's population, much of industry (fish processing, tourism, construction...etc), commerce and other socio-economic infrastructures.

DESCRIPTION

Objectives

- To institute and make operational by 2006 a supervisory structure for the protection of the coastline bar;
- To reconstruct and cover in vegetation over 80% of the weakened structures of the coastline dunes by 2009;
- To create awareness among, and inform, 80% of the population of Nouakchottt on the dangers and means of protection if the dune bar gives way.

Activities

Section: Institutional aspects

- Establishment of a multi-sectoral committee to consider a supervisory structure for the protection of the dune bar;
- Drafting and adopting of laws by the relevant authorities;
- Establishment of the supervisory structure (headquarters, staff, equipment, etc).

Section 2: Technical aspects

- Financial and technical study of the feasibility of dredging and reshaping the dune;
- Implementation of the study results;
- Monitoring of the work;
- Protection and reforestation by adapted species along 20 km of coastline;
- Technical studies on the problems of erosion in the south of the harbour;
- Implementation of the study results.

Section 3: Creation of awareness

- Elaboration of an IEC strategy adapted to the needs of Nouakchott on the aspect of climate change and the risks of the dune bar giving way;
- Implementation of IEC strategy through the various communication channels (radio, TV, press etc);
- Monitoring and assessment of the communication strategy.

Expected outcomes

Section 1:

- An operational supervisory structure is set up;
- Laws are drafted and adopted.

Section 2:

- The dune bar is dredged and reshaped;
- The protection and reforestation of the bar for 20km are carried out;
- The work is supervised.

Section 3:

- An adapted and operational IEC strategy is implemented through the various communication channels (radio, TV, press, etc) and is monitored.

IMPLEMENTATION

Administrative arrangements

The project will be steered by a small multi-sectoral structure led by a committee bringing together all the sectors involved in the implementation of the project

Risks and obstacles

The fixation of the sands of the bar might stop the sedimentary exchanges between the dune and the beach and the foreshore

Monitoring and assessment indicators

- Technical risk related to the choice of sedimentary material for reinforcing the bar;
- Difficulty in obtaining funding;.
- Monitoring of the implementation of the project by the coordinators and the multi-sectoral committee.
- Monitoring of activities;
- Review midway through the process involving all the stakeholders;
- The coastal bar in Nouakchott has been reinforced and its ecosystem restored;
- Integrated management of the coastal dune;
- Supervisory structure is established;
- Laws taking into account climate change are drafted and adopted;
- IEC strategy is implemented;
- Strong community involvement;
- All the project activities have been achieved in the specified time;
- The expected results have been achieved.

Duration

Five Years (2005-2009)

COST

USD 1,018,000

MAURITANIA

NAPA PRIORITY PROJECT 17

MAURITANIA NAPA SECTION 7.3 AGRICULTURE

TRAINING AND INFORMING OF PRODUCERS, THEIR SPOS AND CPS

Locality	Agricultural Wilayas and Rural Development
Sector	Agriculture
Field	Pilot support project for producers and CEs
Type	Agricultural advice
PIP Reference	-

RATIONALE

Given the size of the agricultural sector in the GDP and the provision of employment in the rural community, the training of, and provision of information to, the producers as well as their SPOs and agricultural CEs have proved crucial to the improved efficiency and cost-effectiveness of agriculture in Mauritania.

DESCRIPTION

Objectives

- Training and capacity building of producers, their SPOs and CEs in the field of organisation (Cooperative Using Agricultural Equipment), establishment of seed-bearing trees etc), of farm management and the role of the agricultural adviser, etc;
- Information, by all channels on communication, on technological progress recorded, particularly advances within their reach and immediately applicable to improve productivity, types of successful farming methods;
- Improvement of the producers' and CEs' expertise, particularly concerning the use of agricultural methods respectful of the environment;
- Improvement of the agro-systems productivity and consequently of the standard of living environment of this fringe community.

Activities

- Organization of seminars, workshops, on-the-job training sessions, study trips, covering all the themes mentioned above to the benefit of producers and their SPOs;
- Training of CEs;
- acquisition and the installation of computer and communication equipment to facilitate the access to worldwide information and to improve expertise;
- Execution of research studies to modernize irrigated agricultural studies in order to bring achieve the required diagnostics and to propose efficient and effective solutions within the reach of producers depending on category (small-scale producers, large-scale producers, individuals, private sector, etc);
- Improvement of the productivity of the irrigated systems;
- Increase in producers' incomes through the decrease of costs related to pumping.

Expected outcomes

- Rational management of farming in general but particularly of agricultural equipment and other production factors;
- Updating of knowledge of CEs and producers;
- Reduction of rural exodus and ensuring of the populations' nutritional and food security;

- Contribution to national food security.

IMPLEMENTATION

Administrative arrangements

The project will be carried out by the Department of Research, Training and Education (DRTE), which will set up a small steering structure following a participatory process. It is also important that a broad, efficient and effective partnership be developed with producers, associations, cooperatives, national and international NGOs involved in the irrigated sub-sector, the central and regional technical departments of MRDE, private sponsors and other stakeholders in development in irrigated zones.

Risks and obstacles

- Reluctance of producers;
- Delay in acquisition of equipment or in obtaining funding.

Monitoring and assessment indicators

- Yield of the various irrigated crops;
- Farmers' income;
- Number of trained farmers and SPOs;
- Zone communities' nutritional and food level;
- Permanent establishment of communities on their land (level of rural exodus).

Duration

3 years

COST

USD 1,180,000

MAURITANIA

NAPA PRIORITY PROJECT 18

MAURITANIA NAPA SECTION 7.1 LIVESTOCK FARMING

TREATMENT OF UNREFINED FODDER AND MANUFACTURE AND USE OF MULTI-NUTRITIONAL BLOCKS

Locality Senegal	River Valley
Sector	Livestock farming
Field	Food
Type	Pilot project
PIP Reference	Development of farming

RATIONALE

The recent droughts have caused a decrease of the biomass and a reduction of the pastoral spaces, which in turn has led to the nonavailability of fodder. Thus, to remedy this situation, it is important and sensible to make use of unrefined fodder, notably rice straw, through treatment by urea and the improvement of food quality by way of the provision of multi-nutritional blocks.

DESCRIPTION

Objectives

- Enable better use by the livestock of unrefined fodder resources, with a technical advantage, i.e., improvement of the food;.
- Compensate for the deficit of the feed ingested by ruminants by adding a food supplement rich in energy, nitrogen or minerals;
- Enable the animals in the extensive systems to cope better with the lack of fodder during the periods bridging the seasons;
- Increase productivity of ruminants in the dry season;
- Improvement of quality of poor fodder;
- Satisfaction of maintenance and production needs of livestock to make Livestock farming more economical;
- Increase of income of small-scale owners and agrobreeders;
- Creation of employment in the area of manufacture of multinutritional blocks and their marketing.

Activities

The main activities will be limited in the first year to the organisation of training on the processing of straw by urea and the manufacture of multi-nutritional blocks and practical education for the benefit of Livestock farming technicians, community educators, breeders' associations and agrobreeders.

Unrefined fodder enrichment by urea processing is envisaged on a large scale in the wilayas of Brakna, Trarza, Gorgol and Guidimakha. There are large crop residues, 40,000 tonnes for rice straw alone in the Rosso zone (Trarza).

Expected outcomes

- Improvement of the quality of unrefined fodder;
- Use of unrefined fodder to reduce the use of pastures and overgrazing in periods of lack of fodder;
- Creation of jobs.

IMPLEMENTATION

Administrative Arrangements

The implementation of the project will be carried out by the Department of Research, Training and Education (DRTE) with the cooperation of the Department of Livestock farming.

Risks and obstacles

- Discontinuance of straw and harvest by-products of the production zones;
- Increase in the removal of nutrients from cultivated land;
- Reduction of the fertility of the soil if there is no other form of organic restitution;
- Risk of artificial increase in animal presence within one particular region, beyond the natural capacity imposed by the level of fodder resources;
- Concentration of nutrients in animal production areas, with the risk of water and soil pollution;
- High level of inputs;
- Low price of animal products;
- Availability of inputs (ammonium, caustic soda, urea, etc.);
- Difficulty in the supply of inputs;
- Difficulty of the technique and supply of inputs for the small-scale breeders;
- Unsatisfactory targeting of beneficiaries.

Monitoring and assessment indicators

- Turn-over of farming;
- Animal concentration in the zones of extensive pastures;
- Concentration of nitrates and phosphorous in the soils and water;
- Proportion of breeders having adopted the technique;
- Number of animals receiving treated fodder and blocks;
- Productivity of the animals having received treated fodder and blocks.

Duration

18 months

COST

USD 300,000

MAURITANIA

NAPA PRIORITY PROJECT 20

MAURITANIA NAPA SECTION 7.1 LIVESTOCK FARMING

DEVELOPMENT OF FODDER CROPS

Locality	Senegal River Valley
Sector	Livestock farming
Field	Food
Type	Pilot project
PIP	Reference Support for the fight against dangers to the crops

RATIONALE

By using appropriate fodder species (dolichos (bean), Angola peas and forage niébé) and by adopting appropriate cropping and exploitation practices, the farmer or agro-breeder can improve the quality of his livestock. There are many plant species available for fodders which exist in almost all the eco-climatic regions. It is important to have a wide range of species allowing a good level of adaptation to the context or local usage, thus enabling reduction of costs at all levels (inputs, labour, etc.). However, fodder crops are still in the embryonic stage in Mauritania. The few trials carried out by the research unit and some producers have not really resulted in widespread dissemination.

DESCRIPTION

Objectives

- Establishment of reserves for periods of hardship (fodder deficit) leading to improvement in the seasonal availability of fodder;
- Increase in fodder production;
- Improvement of fodder quality;
- Reduction of pressure on other fodder resources;
- Feed for intensive Livestock farming;
- Establishment of fodder reserves for period bridging the seasons.

Activities

- Provision and production of fodder seeds;
- Education in farming techniques and fodder conservation methods.

Expected outcomes

- Development of fodder crops;
- Giving value to agricultural by-products;
- Increase of the production per beast and per hectare (milk, meat);
- Carbon fixation in permanent pasture lands.

IMPLEMENTATION

The project will concern the Senegal River valley (irrigated zone).

Administrative arrangements

Under the responsibility of the Department of Livestock farming, and will involve the co-operatives (farmers and agro-farmers) and cooperate with technical services such as the National Centre for Farming and Veterinary

Research (NCFVR), the National Centre for Agronomic and Agricultural Research and Development (NCAARD)and the National Society for Rural Development (NASORD), M'Pourié farm and interested private promoters.

Risks and obstacles

- Decrease in soil fertility (without provision of fertilisers and manure) in cases where the fodder is exported after reaping;
- Compacting of soils trampled by animals;
- Risk of introduction of disease or destructive birds or insects that could affect the local vegetation;
- Risk of introduction of species becoming weeds in the areas;
- Introduction of weeds along with poor quality seeds;
- Aridity and other major climatic constraints;
- Need for manpower for other agricultural tasks;
- Cost of establishment of fodder crops;
- Land not adequately secured.
- Quantity of fodder produced per area developed;
- Nutritional value of fodder plants;

Monitoring and assessment indicators

- Livestock performance.

Duration

5 years

COST

USD 600,000

MAURITANIA

NAPA PRIORITY PROJECT 21

MAURITANIA NAPA SECTION 7.4 WATER

THE STUDY AND MONITORING OF WATER QUALITY IN THREE TOWNS: MAGTA LAHJAR, TINTANE AND WOMPOU

Locality	Brakna (Magta Lahjar), Hodh El Gharbi (Tintane) and Guidimakha (Wompou).
Sector	Water
Field	Underground water
Type	Investment and research
PIP Reference	Projects for supplying drinking water(PSDW) to the provincial capitals of the Moughataa.

RATIONALE

Supplying drinking water to the localities of Maghta Lahjar, Tintane and Wompou is achieved through boreholes which capture water from the aquifer water table. The continuous drought and the significant exploitation of these water tables has caused a fall in the water level, a drop in the flow from the boreholes and deterioration of water quality, often thought to be caused by the high nitrate level.

This measure aims to identify new resources of water and monitor the development of the quality of water, and this will allow:

- Improvement of the knowledge of the water resources;
- Identification of new resources;
- Rational management of the resource;
- Possibility of anticipating crisis situations.

DESCRIPTIONS

Objectives

- To improve the conditions of provision of drinking water in quantity and quality to the populations of the three localities.
- To achieve these objectives, the following are required:

Activities

- Establishment of piezometric networks for monitoring;
- Establishment of a methodology for collecting and processing data;
- Achievement of new hydro-geological and geophysical investigations to identify new water resources;
- Creation of new water capture devices;
- Connecting new boreholes to Project to Supply Drinking Water networks.

Expected outcomes

- Functional observation network;
- Reliable collected, processed and disseminated data;
- Periodic reports published on the development of the resources
- Improved conditions of provision of water to the communities in quantity and quality.

IMPLEMENTATION

This project falls within the brief of the National Centre For Water Resources (NCWR), and MRDE is to hand over the technical management of this project to MWE through a protocol of agreement and set up a coordination unit responsible for the financial management.

Risks and obstacles

The risks and obstacles of this project are:

- Conflicts of areas of competence between the NAPA authorities and the NCWR;
- Resource outage

Monitoring and assessment indicators

- Report on seasonal and annual fluctuations of the levels of water tables and annual forecasts;
- Hdro-geological annual statement of aquifers;
- Early warning system for crisis situations
- Savings at water points;
- Number of prospected sites;
- Number of completed productive boreholes;
- Improvement of conditions of provision of drinking water to communities.

Duration

3 Years

COST

This project falls into the framework of the adaptation measures related to climate change.
This project is initiated by NAPA and its financing is submitted to the partners of development.

Estimated at: USD 1,000,000

MAURITANIA

NAPA PRIORITY PROJECT 23

MAURITANIA NAPA SECTION 7.4 WATER

SUPPORT FOR THE EXPERIMENTAL USE DISSEMINATION OF THE DRIP METHOD IN THE OASIS ZONES

Locality	Oasis zones
Sector	Water
Field	Underground water
Type	Institutional
PIP Reference	Sustainable development of the oases in the Adrar Stage III

RATIONALE

The need for water in the oasis zones is continually increasing, given the rapid population growth and sustained socio-economic development. This situation is compounded by an ever-increasing pressure on the freshwater water tables, which is scarce, vulnerable and very unevenly distributed in time and space.

The supply of water in the oasis zones is carried out through a large number of wells equipped with motor pumps (e.g.: 500 motor pumps in Tawaz in Adrar) which capture alluvial water tables of which the reserves are limited and dependent on rainfall. This abnormal use of water tables leads to the irreversible destruction of their hydrodynamic characteristics. To combat this scourge, it is necessary to introduce new methods of irrigation to decrease the pressure on the water-tables

DESCRIPTION

Objectives

- To improve the socio-economic development of communities of the oasis zones;
- To optimise the use of the water resource
- To ensure the permanence of the oases through sustainable management of alluvial water-tables;
- To decrease the number of motor pumps and the volume of water removed;
- To decrease the GHG emissions in the atmosphere.

Activities

To fulfil these objectives, the following activities are required:

- Experimental use of the drip method on ten (10) farmers in the oasis zones;
- Oganization of monitoring campaigns on the development of the resource;
- Drafting of reports and almanacs on the development of the method and its appropriation by the targeted populations;
- Organization of training and awareness workshops;
- Propagation of the method.

Expected outcomes

- Resource sustainably managed on the basis of pertinent technical and scientific information;
- Competent and optimal management of the resource adopted;
- Introduction of new water-saving cultivation methods adopted;

- Decrease in GHG emissions by the popularization of new irrigation methods more attentive to the degradation of the environment.

IMPLEMENTATION

Administrative arrangements

This project could be managed by the Department of Agriculture or by a coordination unit responsible for the management of NAPA projects.

Risks and obstacles

The risks and obstacles of this project are:

- Conflicts in the area of competence between the various departments of MRDE and the projects concerning the oasis zones;
- Refusal by farmers to agree to project targets;
- Inputs stock outage;
- Mastering the method.
- Monitoring and Assessment indicators
- Evolution of the developed areas;
- Increase in productivity;
- Savings at the water point;
- Reduction of parasitic plants on the farms.

Duration

2 years

COST

This project fits into the framework of the adaptation measures related to climate change and complements the rural development oasis project in Adrar by its management of the resource of water. This project is initiated by NAPA and its funding is submitted to the partners in development.

Estimated at USD 400,000.

MAURITANIA

NAPA PRIORITY PROJECT 25

MAURITANIA NAPA SECTION 7.2 FOREST

IMPROVEMENT OF KNOWLEDGE ABOUT, AND SUSTAINABLE MANAGEMENT OF, THE FOREST RESOURCES

Locality:	forest zones
Sector:	forest
Field:	forestry
Type:	applied research (studies)
PIP Reference:	fodder crops in wet zones

RATIONALE

The result of the lack of knowledge of the forest potential is the source of the absence of development, and with the lack of such development, there can be no sustainable management of the resource. It is therefore necessary to begin the studies required to establish development whose implementation will ensure the sustainable management of forest resources.

DESCRIPTION

Objectives

The general objective of the project is the knowledge of the national forest resources. More specifically, the project aims to gather information necessary to the management of forests in Mauritania.

Activities

- To carry out a review (plant formation, large wetlands, use of these formations, evolutive trends of these formations) and socio-economic studies;
- To initiate developments for Mauritanian forests to promote sustainable use and improvement of the current state of plant formation.

Expected outcomes

The expected outcome of the project is the development of the forests in Mauritania.

IMPLEMENTATION

Administrative arrangements

Administratively, the project will depend on the institution responsible for nature conservation. In its implementation, it has to rely on the country's research institutions.

Risks and obstacles

The risks and obstacles which might be encountered in the project arise from the effectiveness of national expertise in the field.

Monitoring and assessment indicators

The project impacts will be evaluated through the gaps filled in data which can be used for the development and management of forests in Mauritania.

For monitoring purposes, the project will be reviewed midway and at the end, and will be subject to audits and field visits, quarterly and half-yearly reports.

Duration

5 years

FUNDING

USD 300,000

MAURITANIA

NAPA PRIORITY PROJECT 24

MAURITANIA NAPA SECTION 7.6 MARINE AND COASTAL ECOSYSTEMS

THE IMPLEMENTATION OF A SAFEGUARD PLAN FOR THE TOWN OF NOUAKCHOTT AND ITS INFRASTRUCTURES

Locality	The project is located in Nouakchott
Sector	Coastal ecosystems
Field	Infrastructure and housing
Type	Investment project
PIP Reference	Urban development programme

RATIONALE

In recent decades, the Nouakchott coastline has seen accelerated urbanization resulting from the deteriorating climate and the crisis in the rural environment. Nouakchott currently accommodates over 25% of the country's population, a great part of industry (fish processing, tourism, construction, etc.), of commerce and of other socio-economic infrastructures. Most of the town's suburbs as well as numerous socio-economic infrastructure, some of which are vital to the development of the country, are in the low areas susceptible to Flooding (Sebkha and Aftouts).

With the effects of climate change, it is the communities, accommodation, socio-economic infrastructures and the economy of the region or even of the country which will be affected in a general way.

DESCRIPTION

Objectives

- To institute and make compulsory the enforcement of standards for town planning taking into consideration climate change by revising, for example, the SDAU in relation to the various scenarios of a rising sea level;
- To carry out by 2006 a development plan for the coastline in Nouakchott;
- To ensure security for over 80% of the inhabitants of Nouakchott located in the areas at risk consequent upon climate change by building a breakwater 1.5m to 2m high and 5 to 6m wide along the whole west front of Nouakchott by 2009;
- To relocate by 2009 over 60% of the infrastructures established on the dunes and to orchestrate a planned removal of all the infrastructures established in the sectors susceptible to the effects of climate change;
- To create awareness by 2009 in over 70% of the contractors and the subcontractors of the appropriate construction methods for areas at risk.

Activities

Section 1: Institutional aspects

- To carry out town planning and development studies taking into account climate change;
- To draw up regulations to get them adopted them by the relevant authorities.

Section 2: Technical aspects

- Financial and technical study for the building of a breakwater for the protection of Nouakchott;
- Building of the breakwater;
- Studies of the various scenarios for strategic withdrawal of the infrastructures established in the areas at risk.

Stage 3: Creation of awareness

- Drafting an Information, Education, communication (IEC) strategy adapted to the needs of contractors and subcontractors on the appropriate construction methods for areas at risk;

- Implementation of the IEC strategy through the various channels of communication (radio, TV, Press, etc);
- Monitoring and assessment of the communication strategy.

Expected outcomes

Section 1: Institutional

- A plan for urban development and laws are written and adopted.

Section 2: Technical

- A 20km breakwater built on the west Nouakchott front;
- A strategic withdrawal programme of the infrastructures established in the areas at risk is drafted and implemented.

Stage 3: Creation of awareness

- An adapted and operational IEC strategy implemented through various means of communication (radio, TV, press, etc) and followed up.

IMPLEMENTATION

Administrative arrangements

The project will be steered by a small multi-sectoral structure which will be led by a committee bringing together all the sectors involved in the implementation of the project.

Risks and obstacles

- Techniques in terms of the adaptation of building and equipment methods to climate change;
- Raising of funds for the project.

Monitoring and assessment indicators

- Monitoring of the implementation of the project by the coordination and multi-sectoral committee;
- Monitoring of activities;
- Monitoring of the project midway, involving all the stakeholders;
- A plan for urban development taking into account the climate change drafted and adopted;
- Regulations drafted and adopted;
- A bypass built for the protection of the town;
- Strategies for withdrawal set up for the areas at risk;
- Strong involvement on the part of communities;
- IEC programme carried out;
- All the activities of the project carried out within the specified time.;
- Expected results achieved.

Duration

Five (5) Years (2005-2009)

FUNDING

USD 2,091,000

MAURITANIA

NAPA PRIORITY PROJECT 26

MAURITANIA NAPA SECTION 7.5 LAND ECOSYSTEMS

FIXATION OF SHIFTING DUNES THREATENING THE NATIONAL SOCIO-ECONOMIC INFRASTRUCTURE

Locality	All the ecosystems which contain shifting dunes. The target populations are those close to the dunes.
Sector	Forest
Field	Forestry (soil protection and restoration)
Type	Investment
PIP Reference	National Action Plan to Combat Desertification (NAP)

RATIONALE

Silting up with sand is threatening several important national infrastructures. Their permanent protection through a biological method consisting of restoring the ecosystem is necessary.

DESCRIPTION

Objectives

The general objective of the project is the restoration of the arid and semi-arid ecosystems facing problems of silting by sand.
More specifically, the project aims to achieve the fixation of sand dunes where they threaten national socio-economic infrastructures.

Activities

The activity to be carried out is the mechanical and biological fixation of shifting sand dunes.

Expected outcome

The expected outcome is the permanent protection of the infrastructures threatened by sand dunes.

IMPLEMENTATION

Administrative arrangements

Administratively, the project will depend on the institution responsible for the protection of nature (using national expertise in the field)

Risks and obstacles

The risks and obstacles can only be of a financial order or related to rigorous implementation of the expected activities.

Monitoring and assessment indicators

The impacts of the project will be estimated through the recovered silted environments and through the protected socio-economic infrastructures. For the purposes of monitoring, the project will be reviewed midway and at the end, as well as being subject to audits and field visits and quarterly and half-yearly reports.

Duration

4 Years

COST

USD 1,500,000

MAURITANIA

NAPA PRIORITY PROJECT 27

MAURITANIA NAPA SECTION 7.4 WATER

SUPPORT FOR IMPROVED MONITORING OF THE PIEZOMETRIC NETWORKS OF THE WATER TABLES OF AÎOUN SANDSTONES AND OF THE HODHS PELITES

Locality	South-East Mauritania (the 2 Hodhs and the Assaba)
Sector	Water
Field	Underground water
Type	Research
PIP Reference	Not included in PIP

RATIONALE

The chronic drought the country has witnessed during the last three decades has caused an ever-increasing pressure on underground water resources whose stocks are unknown and not monitored.
This option aims to monitor the quantitative and qualitative development of the stocks of underground water and it will make it possible to:

- Improve knowledge of the resources of water;
- Manage the resource rationally;
- Predict crisis situations;

DESCRIPTION

Objectives

The general objective of this project is to improve the state of knowledge of underground water resources on a countrywide scale and the specific objective is to ensure improved knowledge and sustainable management of resources of aquifer water from Aîoun sandstones and Hodhs pelites.
To achieve these objectives, it is necessary to carry out the following activities:

Activities

- Acquisition of the monitoring equipment;
- Installation of the functional observation network with monitoring stations equipped with automatic recorders;
- Organization of measurement and data collection campaigns;
- Drafting of periodic reports and almanacs;
- Functional monitoring network;
- Reliable collected, processed and disseminated data;
- Periodic publication of reports on the development of the resource.

Expected outcomes

- Sustainable management of the resource;
- Making water supply secure for communities, livestock and agriculture.

IMPLEMENTATION

Administrative arrangements

This project falls within the brief of the National Centre For Water Resources (NCRW), and MRDE is to hand over the technical management of this project to MWE through a protocol of agreement and set up a coordination unit responsible for the financial management

Risks and obstacles

The risks and obstacles of this project are:

- Conflicts of areas of competence between the authorities of NAPA and NCRW;
- Resource outage.
- Monitoring and assessment indicators
- Number of trained observers, agents and management staff;
- Number of workshops to create awareness;
- Reports on the seasonal and annual fluctuations of water table levels;
- Hydro-geological annual statement of water tables;
- Early warning system for crisis situations.

Duration

2 Years

COST

This project fits into the framework of the adaptation measures related to climate change and complements the support project to the reform of the sectors of water, sanitation and energy which is funding the diagnostic studies and for restructuring the network.
This project is initiated by NAPA and its request for funding is submitted to the partners in development.

Estimated at USD 800,000

MAURITANIA

NAPA PRIORITY PROJECT 28

MAURITANIA NAPA SECTION 7.2 FOREST

INSTITUTIONAL REINFORCEMENT OF THE STRUCTURE RESPONSIBLE FOR NATURE CONSERVATION

Locality	National: Institution responsible for the protection of forest environment
Sector	Forestry
Field	Institutional reinforcement
Type	Community development project

RATIONALE

Administratively, the protection and sustainable management of the forest ecosystems are the responsibility of the Department of the Environment and Rural Development. The absence of reliable data from this institution and the absence of a direct person of reference at the Department at the level of the Ministry of Rural Development and the Environment (MRDE) regional delegations hinders regular monitoring. The absence of human and financial resources is also responsible for the non-application of the various policies recommended for the sector. The current absence of supervision and control of forest activities shows the necessity to strengthen the institutional capacities of the organs responsible for the protection of the forest ecosystems. It is a question of strengthening the human, material and financial capacities.

DESCRIPTION

Objectives

The general objective is to develop the capacities of the institution responsible for the protection of the environment so as to help it to fulfil its mission.
The specific objective is that the institution responsible for the protection of the environment is able to fulfil its mission

Activities

Considering the legal weapons (forestry code, hunting code) existing in the selected activities:

- To strengthen the human resources (recruiting skilled staff);
- To strengthen material and financial resources (logistical resources and computer and cartography equipment).

Expected outcomes

The main expected result is that the institution responsible for environmental protection becomes operational with skilled and motivated staff, equipped with effective material and financial resources.

IMPLEMENTATION

Administrative arrangements

The project will be carried out with the help of one of the international organizations working in the field of environmental protection.

Risks and obstacles

The risks and obstacles which might be encountered in the project concern the identification of the real needs in capacity building.

Monitoring and Assessment indicators

Project impacts will be evaluated through the decrease in pressure ligneous cover throughout the country. For monitoring purposes, the project will be reviewed midway and at the end, and will be subject to audits and field visits and quarterly and half-yearly reports

Duration

2 years

COST

USD 400,000