BURUNDI: NAPA PROJECT PROFILE

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BURUNDI

NAPA PRIORITY PROJECT NO. 1

IMPROVEMENT OF SEASONAL EARLY WARNING CLIMATE FORECASTS

Translated from original French version

RATIONALE

Burundi is an agricultural country, with an agriculture system that depends highly on seasonal weather conditions. The farming communities of Burundi, who were accustomed to the regularity of seasons, are now disorientated by climate variability and climate change. The National Weather Service, which was to provide information on climate, was weakened by the socio-economic crisis that the country went through recently. The service is no longer able to provide good forecast information for farming seasons. Good seasonal climate information would make it possible for farmers to better adapt to the adverse effects of climate change. Climate forecasts thus constitute a high priority action.

DESCRIPTION

Global objective

The global objective of the project is to build the human and technical capacities of the National Weather Service in order to establish reliable seasonal climate forecasts.

Specific objectives

- Improved weather forecasts;
- Valorisation of information relating to climate forecasts in key economic sectors.

Activities

Specific objective 1: Improved weather forecasts;

- Enhance the technical equipment receiving data and other regional products;
- Enhance meteorological and hydrological observation networks;
- Enhance national capacities to analyse and interpret meteorological situations that have a strong probability of occurring;
- Conduct advanced training courses for staff in specialised centres.

Specific objective 2: Valorisation of information relating to climate forecasts in key economic sectors

- Create a weather media service to disseminate information to the wider public;
- Assist the services of the Ministry for Agriculture to integrate the climate seasonal forecasts into the technological packages of supervising the rural agricultural world;

Short-term outputs

- A functional system of regional weather data collecting and data processing;
- Meteorological and hydrological observation networks rehabilitated and modernised;
- A functional early warning system;
- A system of national partnership involving the users, the private sector and the providers of information on the seasonal forecasts that are put in place;
- Training of technical staff and experts;
- Set up a national early warning system for the follow-up, and adaptation to climate change.

Long term outputs

- Increased agricultural production;
- Population well adapted to the adverse effects of climate change.

IMPLEMENTATION

Project implementation and institutional arrangements

The project will be carried out under the responsibility of the Burundi Geographical Institute (IGEBU) in the Ministry for Land Management, Tourism and Environment. The project headquarters will be in Gitega where the IGEBU head office is built. IGEBU is the national project implementation agent.

Monitoring and evaluation

The national Project Steering Committee will be composed of representatives of the various ministries that use climate information and representatives of the farmers. Evaluation will be made on a biannual basis by a tripartite commission: Government + UNDP + Donors representatives.

Risks or constraints

- Data relevancy in the field require the involvement of a big number of participants difficult to monitor on a regular basis;
- Lack of support by donors.

Project duration

3 years

COST

USD 500,000

Activities	**Cost** (USD)
Enhance in priority the technical equipment receiving data and other regional products	150 000
Enhance meteorological and hydrological observation networks	100 000
Enhance national capacities to analyse and interpret meteorological situations with a strong probability of occurring	150 000
Conduct advanced training courses for the executives in specialised centres	50 000
Create a weather media service to disseminate information to the wider public	20 000
Assist the services of the Ministry for Agriculture to integrate the climate seasonal forecasts into the technological packages of supervising the rural agricultural world	30 000
TOTAL	**500 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 2

REHABILITATION OF DEGRADED AREAS

Translated from original French version

RATIONALE

With the foreseen climate change in the next decades, in much degraded areas, very rigorous and long drought will not be able to allow the regeneration or evolution of the vegetation. In the areas with clear forests and savannas, climate change will support the installation of rock deserts. In the Rusizi floodplain, on dune soils, there will be gradual installation of sandy desert and naked soils surmounted by multiple epigeal termites' nests the other non-dune places.

In Bugesera, which is the most arid area of the country, climate change will substantially reduce the xerophilous thickets, and the lawns will be degraded into stripped beaches covered by ferruginous concretions sprinkled with numerous termites' nests.

At the level of the subalpine stage mountain forests, starting from 2500 m of altitude, the subalpine vegetation primarily made up of Ericaceae should disappear and make room to rocky soil. The existing forest resources are also very much exposed to the adverse effects of climate change. The insufficiency of activities to manage national woodlots worsens their degradation.

Currently, it is in these much degraded zones that we have intensified erosion from flooding rains in plains and valleys, which are the source of pollution of lakes and rivers.

To stop the amplification of desertification under the effect of climate change, it will be necessary to reforest the already naked zones with adapted species. Moreover, sustainable management of forest resources constitutes a very effective way to reduce their vulnerability vis-à-vis climate variability and climate change.

DESCRIPTION

Global objective

The global objective of the project is the restoration of the vegetable cover of degraded areas.

Specific objectives

- Reconstitution of highly degraded areas with species adapted to the terrestrial ecosystems;
- Restoration of existing woodlots.

Activities

Objective 1: Reconstitution of highly degraded areas with species adapted to the terrestrial ecosystems

- Reforest the degraded zones of the subalpine stage of the Congo-Nile watershed;
- Create zones of plantations in the degraded zones of the thickets of Murehe, and mountain chains of Ruyigi and Cankuzo;
- Identify and popularise drought resistant forest species.

Objective 2: Restoration of existing woodlots

Quantify the current stock of the principal resources and assess their possible future evolution vis-à-vis their reproductiveness and the effectiveness of the protecting measures;

- Replant the zones of destroyed woodlots;

- Work out plans to manage existing woodlots.

Short-term outputs

- Reconstitution of the biomass at the level of the subalpine stage of the Congo-Nile watershed;
- Bands of plantations installed around the thickets of Murehe and mountain chains of Ruyigi and Cankuzo;
- Possible future evolution of the principal specified forest resources indicated;
- Exploitable resources identified and frequency of exploitation determined taking into account the reproduction time span;
- Plans of adapted wood management availed.

Long-term outputs

- Reconstitutions of hydrological and weather regulation systems;
- Population well adapted to the adverse effects of climate change;
- Increased agricultural production.

IMPLEMENTATION

Project implementation and institutional arrangements

The Forestry Department, which is the institution responsible for afforestation, is the national project implementing agency. Project coordination will be conducted by a National Coordinator. This project includes several sectors and this is why several institutions will be involved in the implementation. The Forestry Department will have to collaborate with the INECN, which is in charge of the natural ecosystems. A planning team will have to include representatives of all stakeholders. A Steering Committee will be put in place that will include representatives of the NAPA Committee, the National Environment Commission, the Coordination Body members for biodiversity-related activities, as well as the representatives of the institutions in charge of biodiversity.

Monitoring and evaluation

The Project National Coordinator, jointly with the National Director shall, every 3 months submit to the donors an activity progress report. Tripartite reviews will be organised each year to review the progress achieved by the project and will bring together representatives of donors, the government of Burundi and the implementing agency. Field visits of evaluation will be organized on request by the three partners concerned. A final report presenting the work completed, the results obtained and problems encountered will also be submitted for approval to the donor 3 months before the end of the project.

Risks and assumptions

Compounded poverty leading the population to clear natural milieus.
Absence of funds to achieve the set of activities envisaged.

Project duration

3 years

COST

USD 500,000

Specific objectives	**Activities**	**Cost** (USD)
Reconstitution of the highly degraded	Reforest the degraded zones of the subalpine stage of the	**100 000**

areas with species adapted to the terrestrial ecosystems	Congo-Nile watershed	
	Create zones of plantations in the degraded areas of the thickets of Murehe, and the mountain chains of Ruyigi and Cankuzo	**150 000**
Preservation of existing woodlots	Quantify the current stock of the principal resources and assess their possible future evolution vis-à-vis their reproductiveness and the effectiveness of the protection measures	**50 000**
	Replant the areas of destroyed woodlots	**150 000**
	Work out plans to manage existing woodlots	**50 000**
Total		**500 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 3

SAFEGUARDING THE MOST VULNERABLE NATURAL ENVIRONMENTS

Translated from original French version

RATIONALE

In Burundi, the inventory of the terrestrial ecosystems shows that the current climate conditions compounded by anthropogenic actions prevent the ecosystems from playing their ecological role. With the climate change likely to happen in the next decades, the ecosystems might undergo substantial degradation.

For ecosystems, such as the afro-mountain stage forests, the clear forests, the xerophilous savannas and thickets, although already adapted to arid or very arid conditions, in spite of the gradual evolution envisaged following wet conditions, the long and rigorous dry season will have adverse consequences on vegetation. In addition, all these ecosystems are targeted by farming clearcutting, repetitive bush fires and overgrazing that split them up and destroy them completely. Dry conditions will also stop or slow down regeneration.

The disappearance and the disturbance of the terrestrial ecosystems will obviously involve intensified rainy erosion on steep slopes. This will result in intense losses of soils due to erosion and consequent flooding in plains and valleys. The rivers will be disturbed and water opacity will reach high maximum, thus contributing to the pollution in Lake Tanganyika. This disastrous situation will be followed by droughts which are even more alarming.

To stop these consequences induced by climate change, it will be necessary to stop the disturbance of the vegetation by reinforcing the conservation of terrestrial ecosystems in protected areas and control all the other vulnerable ecosystems.

DESCRIPTION

Global objective

- Delimitation of all the Burundi protected areas to avoid their clearing through limits encroaching.;
- Protection of the natural environments that are not yet protected to allow the evolutionary process of savannas and clear forests and the thickets.

The global objective is thus stated as follows: "Improved ecological conditions of the terrestrial ecosystems through effective protection".

Specific objectives

- Enhance the conservation of protected areas;
- Control the ecosystems of the vulnerable milieus.

Activities

Objective 1: - Enhance the conservation of protected areas;

- Conduct a study of the most vulnerable natural resources in the Kibira National Park and Rusizi Natural Reserve;
- Avail alternatives to substitute the natural resources of the Kibira National Park and Rusizi Natural Reserve;

Objectives 2: - Control the ecosystems of the vulnerable milieus

- Create new areas to be protected, including the savannas and clear forests of Kumoso and Buyogoma and the xerophilous thickets of Murehe;
- Train the local communities for their empowerment with regard to the management of new areas established as community protected areas.

The project will strive to halt the degradation of the terrestrial ecosystems, including preserving the mountain rain forest in the system of protected areas. Essential measures will aim at strengthening monitoring systems.
The sclerophyllous forest and the xerophilous thickets of the Rusizi floodplain are located in a very vulnerable area in Burundi. Measures envisaged concern monitoring the land clearing and the anarchistic distribution of lands. Identification of new forest areas to be protected is necessary especially in the depression of Kumoso.
Regarding the xerophilous thickets of Bugesera, required measures will consist of protecting all the hills in Murehe.
In the eastern savannas, it is advisable to control the peaks of Ruyigi, Cankuzo and Kumoso.
In the Burundi eastern region, it will be necessary to set up community protected areas designed as protected milieus under the sole supervision of local communities. This will make it possible to stop bush fires.

Short-term outputs

- Local communities involved in conservation of the Kibira National Park and Rusizi Natural Reserve;
- Alternative activities compatible with the protection measures put in place;
- Vulnerable milieus set up into community management protected of areas.

Long-term outputs

- Water and climate regulation systems reconstituted through the reduction of floods and attenuation of drought;
- Population well adapted to the adverse effects of climate change;
- Increase in the agricultural production.

IMPLEMENTATION

Project implementation and institutional arrangements

This project results from the consensus of various actors since it encompasses various actions identified based on local and national studies and approved by all the population during national and regional consultation workshops.

Thus, under the responsibility of INECN, the involved actors include all the institutions responsible for ecosystems, the local population and local governments, the nongovernmental organisations, etc.

INECN, which is the institution responsible for preserving the biodiversity, is the national project implementing agency. The coordination of project activities will be made by a National Coordinator.

This project includes several sectors, and this is why several institutions will be involved in the implementation. A planning team will include representatives from all the stakeholders. A Steering Committee will be set up and will include representatives from NAPA Committee, the National Environment Commission, members of the biodiversity- related activities coordinating body and representatives of the institutions in charge of biodiversity.

Monitoring and evaluation

Every 3 months, the National Project Coordinator, jointly with the National Director submit to the donor, an activity progress report. Tripartite reviews will be organized each year to examine the progress achieved by the project and will bring together representatives from the donor, the Government of Burundi and the Executing Agency. Field visits of evaluation will be organized on request by three partners concerned. A final report presenting the work completed, the results obtained and the problems encountered will also be presented to the donor for approval 3 months before the end of the project.

Risks and constraints

- Compounded poverty leading the population to clear the natural milieus;
- Absence of funds to carry out the activities envisaged.

COST

USD 200,000

Specific objectives	**Activities**	**Cost** (USD)
Enhanced conservation of protected areas	Conduct a study on the most vulnerable natural resources of the Kibira National Park and Rusizi Natural Reserve	**100 000**
	Avail alternatives to the natural resources of the Kibira National Park and Rusizi Natural Reserve.	**50 000**
Sub-total		**150 000**
Control the ecosystems of the vulnerable milieus	Create new areas to be protected including the savannas and clear forests of Kumoso and Buyogoma and the xerophilous thickets of Murehe	**30 000**
	Train local communities for their empowerment with regard to the management of new areas set up as community protected areas	**20 000**
Sub-total		**50 000**
Total		**200 000**

BURUNDI

BURUNDI NAPA PRIORITY PROJECT NO. 4

RAINWATER VALORISATION

Translated from original French version

RATIONALE

The economy of Burundi is based on rain-fed agriculture. Agriculture contributes for approximately 50% of the GDP, provides more than 90% of employment, and ensures 95% of the foodstuffs and more than 80% of foreign income.

The agricultural sector thus depends largely on the seasonal climate conditions, which are not controllable by the farmer. Climate seasonal variability generally consists of the late beginning or early end of the rainy season, or even an interruption of precipitation for several weeks in the middle of the season. These irregularities disorientate farmers in their usual agricultural calendar, surprise and destroy the crops in full vegetative phase, resulting in a catastrophic fall in agricultural outputs. Some areas of the country, especially in the North-East, are regularly struck by famine as a result of drought prevailing at periods of the year when it should normally rain.

However, Burundi has sufficient water resources if annual precipitation is considered. Even in the driest areas of the country, annual precipitation is approximately 800 - 1000 mm per annum. Water resources are not used in an optimal way to meet the needs of the country. Irrigation is still embryonic; marshes and lower valleys are not protected from floods, and the population always relies on direct precipitation for their crops.

To remedy these adverse impacts of climate variability and climate change on the population's agriculture and the economy in general, action should be undertaken to collect and store rainwater during the wet periods, and use it in a programme of arable land irrigation. This water would also be useful for livestock.

Installations on hills will make it possible to maintain sufficient moisture in the terrestrial environments during dry periods, and to protect marshes and lower valleys against floods during periods of heavy precipitation.

Moreover, considering the scarcity of water sources in this North-Eastern part of the country, it is most urgent to install photovoltaic storage systems. Technically speaking, the storage would be hydraulic in order to avoid the electrochemical storage that constitutes the most failing component of the photovoltaic systems. Considering the dispersion of rural settlements, this activity will have to be a community endeavour through a provision of modular installations with a system of distribution by fountains. In the region of Bugesera, water will need to be pumped from the lakes, thus involving the use of essential purification blocks.

The use of mechanical pumps in these regions could be considered, but experience in similar places shows that it is necessary to provide a lot of physical effort causing considerable fatigue to children and women.

In the absence of the adduction by gravity, the use of photovoltaic solar energy to pump drinking water constitutes the best indicated and adapted solution at the environmental level compared to the pumping by diesel/gasoline motor-driven pumps that increase greenhouse gases emissions.

The activities should start in the regions the most affected by climate variability, i.e. in the area of Bugesera and more particularly in the provinces of Kirundo (Bugabira, Busoni, Kirundo, Ntega, Gitobe) and Muyinga (Bwambarangwe).

DESCRIPTION

Global objective

The global objective of the project is to improve food security and the public health of the target population through irrigated agricultural production and clean water conveyance.

Specific objectives

- Understand water harvesting and storage techniques;
- Understand hill irrigation techniques;
- Installation of pilot units of demonstration of these new techniques in the various communes of Bugesera;
- Avail drinking water in sufficient quantity for the benefit of the population living in the region of Bugesera.

Activities

The project will consist of achieving the following activities:

- Train A1 or A0 technicians by 3-month training courses abroad (in Africa) for specialisation in the rainwater harvesting /storage and hill irrigation techniques ;
- Train A2 technicians locally (2 per commune, 12 for Bugesera) in rainwater harvesting /storage and hill irrigation techniques;
- Set up at least one pilot installation of rainwater harvesting and hill irrigation in each of the 6 communes of Bugesera;
- Facilitate similar installations in targeted farmers/stockbreeders;
- Install one clean water conveyance system by photovoltaic pumping in the area of Bugesera.

Outputs

Short term outputs

- Technicians trained and population made aware of the techniques of rainwater use for crop irrigation;
- Units of demonstration of these new techniques put in place;
- Farmers/ stockbreeders adopt the new techniques of agricultural production;
- Availability of drinking water in sufficient quantity;
- Improved human health.

In the long run

- Complementary agricultural production in the present /potential project areas, including periods of deficiant precipitation;
- Protection of the lower valleys' soils against floods during period of heavy precipitation.

The ultimate output is food self-sufficiency and sustainable land management through better control of water needed for agricultural production

IMPLEMENTATION

Institutional arrangements

The project will be implemented in the Ministry for Agriculture and Livestock. The National Project Implementation Agency will be the Directorate-General of Mobilisation for Developmental Self-Promotion and Agricultural Extension Service via the DPAEs of Kirundo and Muyinga that will second high officials to the project. A collaborative framework will be established between the Department of Agricultural Engineering and Protection of Land Heritage and the Burundi Geographical Institute (IGEBU) under the Ministry for Land Management, Tourism and Environment (MINATTE), as well as the Directorate-General of Rural Hydraulics and Energies.

Risks and barriers

The risk is for the trained technicians to leave for other jobs in Burundi or elsewhere as this often occurs.

The plots the most favourable for pilot installations probably belong to one or more private owners. This has an advantage if the owner agrees, but convincing them all could take some time.

Monitoring and evaluation

A National Project Steering Committee will be composed of representatives from the Ministry for Agriculture, the Ministry for Land Management, Tourism and Environment, the Ministry for Energy and Mines, as well as representatives from the Ministry for Interior. Evaluation will be made on annual basis by a tripartite commission Government/ UNDP/ Donor representative(s).

Project duration

4 years

COST

USD 1,000,000

Activities	**Cost** (USD)
Train A1 or A0 technicians by some 3-month training courses abroad (in Africa) for specialisation in the rainwater harvesting /storage and hill irrigation techniques	100 000
Train A2 technicians locally (2 per commune, 12 for Bugesera) in rainwater harvesting / storage and hill irrigation techniques	50 000
Set up at least one pilot installation of rainwater harvesting and hill irrigation in each of the 6 communes of Bugesera	400 000
Facilitate similar installations in targeted farmers/stockbreeders	250 000
Install one clean water conveyance system by photovoltaic pumping in the area of Bugesera	200 000
Total	**1 000 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 5

EROSION CONTROL IN THE AREA OF MUMIRWA

Translated from original French version

RATIONALE

The region of Mumirwa experiences the problem of erosion more acutely than anywhere else in the country. The steep slopes, the overpopulation of the area (approx. 400 inhabitants/km^2), the brittleness of soils and the overexploitation of lands mean high erosion by rain.

In all the provinces of the Mumirwa area, erosion is felt by the population as being the principal factor of the fall in soil fertility, and consequently of the fall in crop productivity. In this primarily agricultural and strongly populated area, the economic survival of the population is related to the preservation of soil productivity capacity.

In this region, any land subjected to precipitation undergoes erosion, i.e. a degradation of the relief, a modification of the chemical composition of the soil and its structure and loss of the outer soil surface that is wiped off by run-off waters. The loss of the outer soil surface impoverishes the farmed lands, making it less fertile and less productive.

Erosion control and soil fertility restoration are urgent needs that require adequate circumscribing both in its form (manifestation) and its content (causes) in order to propose strategies adapted to the real land situation.

Methods recommended in the region of Mumirwa should take into account the steep slopes, the tendency of soils to massive landslide, the land exiguity, the demographic pressure and the availability of vegetable material.

DESCRIPTION

Global objective

The global objective is the installation of anti-erosion mechanisms and the introduction of suitable farming practices.

Specific objectives

- Installation of biological devices;
- Introduction of anti-erosion practices.

Activities

Objective 1: *Installation of biological devices*

The biological devices relate to the afforestation and the herbaceous or shrubby hedges laid out in contour lines. The following actions are recommended:

- Set up herbaceous and shrubby quickset hedges

The herbaceous quickset hedges consist of graminaceous of which the most known and tested are: *Pennisetum.sp; Tripsacum.sp and Setaria.* They are installed on equidistant contour lines of 10 m x 20 m according to slopes, and are planted into double hedges of 40 cm x 40cm on a 40 cm wide strip for *Pennisetum* and *Tripsacum,* and 20 cm x 20 cm on a 20 cm strip for *Setaria.* However, according to the size of the property, the dimensions, the number of lines, the thickness of the band, upstream addition of a line of agro-forestry shrubs (*Leuceana, Calliandra*….) is possible.

Three main leguminous species are disseminated in Burundi, i.e. *Leuceanadiversifolia*,

Leuceanaleucocephala and *Calliandracalothyrsus*. They are laid out in contour lines: 30cm between the roots and 10 - 20 m between the curves according to the slope. Their adequately developed root system makes it possible to fix the unstable grounds and the slopes.

- Produce and disseminate agro-forestry species

Agro-forestry consists of associating the crops to non-adverse shrubby species that protect and improve the soil. The species most used in the province are: *Grevillea* sp., *Cedrella* sp., and shrubs like *Leuceana* sp. and *Calliandr* sp. often used on contour lines. These trees are laid out in fields on 10 or 20 m between the roots. They are appropriate in the protection of banks and ravines.

Objective 2: Introduce soil-protecting farming practices

- Popularise suitable farming practices

The above-mentioned biological devices must be accompanied and supplemented by farming practices favourable to erosion-control. The principal recommended practices are: ploughing in contour lines on lands with gentle slope and gradual terraces, cultivate in hillocks and balks, application of fertiliser and green manure, recourse to fallows where it is still possible.

- Popularise anti-erosion physical devices

The physical devices are: ditches, radical terraces and stone alignments. The use of these devices varies from one locality to another. In steep slope areas with sensitive soils where the problem of plot exiguity is real, anti-erosive ditches are not recommended on hillsides. They can be used on hilltops or lands with moderate slope. The alignment of the stones extracted from the fields must be made in the horizontal direction to halt rain water run-off.

Outputs

Short term outputs

- Increase in fertility and productivity of the arable lands;
- Conservation of water and soils;
- Increase in population's income;
- Control erosion;
- Produce vegetable materials in farming areas.

Long term outputs

- Land protection in the Imbo plain against flooding during periods of heavy rains;
- Food self-sufficiency and sustainable land management through better water control for agricultural production.

IMPLEMENTATION

Institutional arrangements

The project will be implemented under the Ministry for Land Management, Tourism and Environment. This ministry will collaborate with the Ministry for Public Works and Equipment that includes the urban development services.

Risks and barriers

- Non-allowance of an adequate budget;
- Inadequate extension service;

- The high cost of development works;
- Resistance by owners of the spaces concerned.

Monitoring and evaluation

- A monitoring and evaluation committee would be set up in collaboration with the donor and the ministry in charge.
- An external team will be responsible for the project evaluation and auditing.

COST

USD 600,000

Activities	**Cost** (USD)
Set up herbaceous and shrubby quickset hedges	200 000
Produce and disseminate agro-forestry species	200 000
Popularise suitable farming practices	50 000
Popularise anti-erosion physical devices	150 000
Total	**600 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 6

PROTECTION OF THE BUFFER ZONES IN LAKE TANGANYIKA FLOODPLAIN AND AROUND THE LAKES OF BUGESERA

Translated from original French version

RATIONALE

The water level in Lake Tanganyika fluctuates by approximately 1 metre per annum, and 3-4 metres if inter-annual variations are considered. To date, the level of Lake Tanganyika has varied between 772-777 m of altitude since 1929 (year of first available measurements), according to the variability of precipitations in the catchment's area. The peripheral area whose altitude is located between these two levels simply constitutes the floodplain.

During the periods of rainfall deficit at the regional level, the level of the lake is lowest, and this area is particularly threatened by the local population who tend to adapt it to agricultural and habitat needs, with immediate impact on the erosion of the banks and the destruction of the ecosystems of Lake Tanganyika.

In northeastern Burundi, the marshy and lake complex of Bugesera is threatened by drought or disappearance because of agriculture extension, overgrazing and extractions by the local population. This is intensified during the periods of rainfall deficit in the region. These periods of drought, which have been already very noticeable during the last 5 years, should worsen with the foreseen climate change.

It is known that these marshes and these lakes keep their water only thanks to the existence of intact marshy stoppers between the river and secondary valleys, that a drainage of the marshes causes the lowering of the underground waters, and that the disordered various material extraction (peat, plants, etc) causes permeability of the natural stoppers that retain water from the lakes. In addition, the local population need the resources resulting from the marshy and lake complex for their water supply and irrigation.

This project proposes to help manage the floodplain around Lake Tanganyika, more particularly in the surroundings of Bujumbura, Rumonge and Nyanza-Lac where it is widest, as well as the marshy and Lake Complex of Bugesera, according to sustainable standards of management of the resources which take account of the fluctuations of water levels related to the cyclic fluctuations of precipitations.

DESCRIPTION

Global objective

The global project objective is to maintain the hydrological and ecological functions of the floodplain around Lake Tanganyika and the marshes of Bugesera.

Specific objectives

To successfully fulfil the objective of maintaining the marshes and a sufficient level of lakes, including during the driest periods, actions are required in the field of awareness raising, technical aspects, and the regulatory aspect. The objectives thus laid down are as follows:

- Establishment of strategic buffer zones in the floodplain of Lake Tanganyika and around the lakes of Bugesera;
- Set up agreed regulations regarding buffer zone management.

Activities

Establishment of strategic buffer zones in the floodplain of Lake Tanganyika and around the lakes of Bugesera

- Delineate physically the marshy buffer zones and other zones to be strictly protected and restore the significant zones already encroached;
- Undertake baseline studies regarding the contours lines and physical and biological characteristics of the floodplains of Lake Tanganyika and the Northern lakes.

Set up agreed regulations regarding buffer zone management

- Inform and raise awareness of the riparian population on the need to protect part of the hydrological complex in order to allow the harnessing of other parts in the long term;
- Set up regulations and a monitoring system for agriculture and livestock practices, and for the harnessing of certain resources in authorized zones.

Outputs

Short term outputs

- Riparian population of Lake Tanganyika and the marshes of Bugesera made aware of sustainable harnessing of the water resources;
- Buffer zones of the lakes and marshes not disturbed;
- Public domain space identified and delineated;
- Waters in the lakes and marshes of Bugesera maintained on a high level.

Long term outputs

- Hydrological and biological role achieved by the lakes and marshes;
- Increased biodiversity and living resources (fish);
- Change of way of living of the population through higher incomes;
- Reasonable methods of agriculture, rearing, and extractions of various resources internalised and practiced.

IMPLEMENTATION

Institutional arrangements

The project will be implemented within the Ministry for Land Management, Tourism and Environment (MINATTE). Technical management will be ensured by the Department of Agricultural Engineering and Land heritage Protection. Collaboration with the Ministry for Agriculture and Livestock via the local DPAE, the INECN, and the administrative authorities (Governors, communal administrators) will be formalised.

Risks and barriers

One should expect strong resistance of the owners (or supposed such) of the lands that will be concerned by the project. Even if the law on public domain spaces has been in existence for a long time, it is not obvious that the law was internalised by the population, including the local authorities. Specific arrangements will have to be found each time locally.

The population, generally poor and living on a day to day basis, understands with difficulty the concept of long term management. Even after long awareness campaigns, there will always be popular resistance vis-à-vis the necessity of law enforcement. Only a firm and constraining law will be enforced. High level political support will be necessary. The marsh of Bugesera has a border with Rwanda. Diplomatic action will be needed from the highest authorities at the national level, to obtain the cooperation of Rwanda for a common objective.

Monitoring and evaluation

Project monitoring and evaluation will have to be carried out by a permanent joint team made up of technicians and the administrative officials indicated by the Ministry responsible for the environment and regional planning.
An institutional mechanism will have to be set up so that law enforcement is permanent.

Project duration

3 years

COST

Total 200,000

Specific objectives	**Activities**	**Cost** (USD)
Establishment of strategic buffer zones in the floodplain of Lake Tanganyika and around the lakes of Bugesera	Undertake baseline studies regarding the contour lines and physical and biological characteristics of the floodplains of Lake Tanganyika and the Northern lakes	**40 000**
	Delineate physically the marshy buffer zones and other zones to be protected and restore the significant zones already encroached	**100 000**
Set up agreed regulations regarding buffer zone management	Inform and raise awareness of riparian population on the need to protect part of the hydrological complex in order to allow the harnessing of other parts in the long term	**30 000**
	Set up regulations and a monitoring system for agriculture and livestock practices, and for the harnessing of certain resources in authorized zones	**30 000**
Total		**200 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 7

POPULARISATION OF SHORT CYCLE AND/OR DROUGHT RESISTANT FOOD CROPS

Translated from original French version

RATIONALE

More than 90% of the economy of Burundi is based on traditional self-subsistence agriculture. The majority of the population draws their income from the sale of agricultural produce, which represents approximately 50% of the GDP and provides more than 90% of employment in the rural sector. The population's food supply is thus based on food production of local origin.

For a few years now, the rains have been starting later, beyond October, and ending early before the end of April. On top of this, intermittent and overdrawn periods of rains during the growth and the development of seedlings are occurring. Combined with the weak fertility of soils, the result is the fall of productions and the uncertainty of food security in the country. Ultimately, consequences are absolutely critical and causing repetitive situations of emergency food aid in many areas.

With the aim of rectifying this worrying situation of rain scarcity and disturbance of the ecological agro-systems, it is urgent to develop and disseminate varieties of food crops resistant to drought and adapted to the weak soil fertility while popularising the corresponding plant packages. These include sweet potato, sorghum and corn. The support would be firstly directed towards the northern regions and other most affected regions.

DESCRIPTION

Global objective

The global objective is to increase the agricultural production in order to contribute to improved food security by the development and the popularisation of the varieties of drought-resistant food crops in all the provinces of the country affected by climate change.

Specific objectives

- Development and dissemination of drought-resistant varieties;
- Development and dissemination of varieties resisting to soil acidity;
- Development and popularisation of appropriate technological packages;
- Training of farmers/associations on seed production techniques;
- Production and availing of grains in seedling centres.

Activities

Dissemination of drought-resistant varieties

The project will support research programmes to disseminate the short cycle varieties that resist to drought periods. The actions will be limited to the last confirmative stage of the varieties in the regions of their adaptation.

Dissemination of varieties resistant to soil acidity

- Development of varieties adapted to tolerate soil acidity and periods of rainfall deficit.
- Development and popularisation of appropriate technological packages

The farming techniques will be updated for each crop and availed to the farmers. They will be popularised in the form of the phytotechnic forms with supporting illustrations.

Training of farmers/associations of seed producers

Preferably, the training will be given to pilot units of demonstration of these farming techniques that will be identified by the communal supervisors. Monitoring will be ensured at each hill of census by an agricultural extension worker. Preliminary trainings (1 per province) of the extension workers will be provided by the specialised and multidisciplinary trainers.

Production and availing of seeds of the adapted varieties

Pre-base seeds of varieties tolerant to drought and to weak fertility of soils will be produced in the ISABU seedling centres. They will be made available in public seedling centres and some groupings qualified in the production of basic and commercial seeds in the target provinces. They will be primarily distributed to the most vulnerable families.

Outputs

Short term outputs

- Diversification of varieties performing in weak rainfall and poor soil fertility;
- Adoption and control of farming techniques by farmers;
- Increased agricultural production and reduced famine;
- Improved human health;
- Increase in population's income as a result of sales and use of the productive surplus in the potential over-harvesting regions.

Long term outputs

- Increase the production of food crops
- Regular provisioning of the surplus in the regions of strong consumption
- Ensured food self-sufficiency
- Promotion of the production directed towards the economy of the market.

IMPLEMENTATION

Institutional arrangements

The project will be implemented under the Ministry for Agriculture and Livestock. It will be carried out by ISABU as regards the development of performing varieties and the production of pre-base seeds. ISABU will work in collaboration with the Ministry for Land Management, Tourism and Environment, the Department of Seeds and Plants Promotion (DPSP) and the DPAEs as regards the production of basic seeds and the groupings of the producers of commercial seeds under DPAEs supervision.

Risks and barriers

- Most of the crops subjected to extension are not part of the populations' current food habits;
- Irregularity of budget releasing according to instalments corresponding to the farming timing.

Monitoring and evaluation

The National Steering Committee will be composed of representatives from ISABU, the MINAGRIE office, the Directorate-General for Forests, Tourism and Environment, DPSP, DPAEs and a representative of farmers by target province.

Duration

3 years

COST

USD 294,000

Activities	**Cost** (USD)
Production of seeds of the varieties adapted to climate change	250,000
Dissemination of varieties resisting drought	5,000
Dissemination of varieties tolerant to soil acidity	5,000
Development and popularisation of appropriate phytotechnic forms	4,000
Training of technicians and the groupings producing seeds	30,000
Total	**294,000**

BURUNDI

NAPA PRIORITY PROJECT NO. 8

ZERO-GRAZING CATTLE BREEDING

Translated from original French version

RATIONALE

The cattle-breeding sector will be affected by climate change. Extreme climate phenomena (cases of prolonged drought, floods) will modify the limits of pastoral vegetation, the quality and quantity of fodder, the duration of the season of vegetable growth, animal productivity and the quality of water.

In cases of prolonged drought, pastures are not renewed and become rare. This decreases the dairy and meat output and makes the domestic animals skeletal. Stockbreeders then migrate to more favourable regions, although this leads to risks of all sorts of diseases that can be met due to promiscuity.

Burundi agricultural development and particularly the economic advancement of several farms will pass by systems of production that mainstream agriculture, cattle-breeding and forestry activities so as to protect and improve the edaphic capital and diversify incomes.

DESCRIPTION

Global objective

The global objective is to improve and increase the agro-sylvo-pastoral production and to protect the environment.

Specific objectives

- Popularisation of zero-grazing breeding techniques;
- Promotion of the breeding of species adapted to the local climate conditions.

Activities

- Train the population on agro-sylvo-pastoral mainstreaming methods;
- Support the population in the construction of cattle sheds, installation of fodder fields, plantation of trees, shrubs and graminaceous fodder.
- Identify and import breeding species (bovines, goats and the porcine of performing breed) adapted to local climate conditions;
- Distribute animals to the pilot households (1 000 households).

Outputs

Short term outputs

- Increase in the fertility and the productivity of arable lands;
- Increase in the dairy production;
- Conservation of waters and soils;
- Increase in the income of the population;
- Reduced bush fires.

Long term outputs

- Forest regeneration

IMPLEMENTATION

Institutional arrangements:

Localisation: nationwide
Stakeholder: Ministry for Agriculture and Livestock

Risks and barriers:

- Absence of effective commitment by the political decision makers and the government as regards NAPA prioritisation;
- Non-allocation of adequate budget;
- Insecurity;
- Inadequate extension services.

Monitoring and evaluation:

Install a Steering Committee, a Project Coordinator and M&E Officer.

COST

USD 300,000

Activities	**Cost** (USD)
Train the population on agro-sylvo-pastoral mainstreaming methods	80 000
Support the population in the construction of cattle sheds, installation of fodder fields, plantation of trees, shrubs and graminaceous fodder	100 000
Identify and import breeding species (bovine, goats and porcine of performing breed) adapted to local climate conditions and distribute them to pilot households (500 households)	120 000
Total	**300 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 9

CAPACITY BUILDING TO PROMOTE ENERGY-WOOD SAVING TECHNIQUES

Translated from original French version

RATIONALE

The Burundian rural area is home to 96% of the population and uses only wood as a source of energy. Demand is very important and increases at the rate of the population growth while wood replenishment does not evolve at the same pace. On the contrary, it decreases.

The Burundian domestic energy sector is dominated by traditional sources of energy, including the wood-energy used in households and peat used in the army. More than 88% is consumed by rural households for cooking, heating and lighting. In the urban environment, the use of wood-energy is focused almost exclusively on charcoal, used mainly for food cooking. Charcoal is obtained by traditional methods of carbonization with an output of about 10% whereas it could be raised to 20% through training and the dissemination of improved techniques of carbonisation supported by the use of improved stoves. The reduction in the quantities of wood consumed will have a consequence on the preservation of trees. Stoves in use have an energy efficiency of only 15% whereas there are some stoves with an energy efficiency of 35%, thus being able to generate a saving of 130%.

In addition to Bujumbura City, the project will cover the provinces of Bubanza, Cibitoke and Bujumbura-Rural.

DESCRIPTION

Global objective

Increase in forest-covered areas.

Specific objectives

The project aims at an increase in forestry cover and an improvement of the forest stock management for the sustainable supply of wood-energy through:

- Forestation of the highly vulnerable natural environments;
- Training on improved stove construction and use techniques and increase their dissemination;
- Training on the improved methods of carbonization and their dissemination.

Activities

- Create new woodlots;
- Create individual woodlots;
- Introduce improved stoves into households;
- Popularise improved methods of carbonization.

Outputs

Short term outputs

- Environmental protection by afforestation and rationalization of the use of wood through the use of the culinary stoves;
- Capacity building in rational management of forest plantations;
- 300 hectares are reforested and protected by fire walls;

- 200 hectares are rehabilitated in the wooded perimeter of Mageyo in the commune of Mubimbi, province of Bujumbura Rural;
- Agro-forestry trees are distributed to the population;
- New prototypes of wood stoves and charcoal stoves are introduced into the project area;
- Households have a wood stove in their households, especially in the 3 provinces;
- 6 technicians are trained on the techniques of carbonization;
- 120 charcoal men are trained;
- Meetings of dissemination of stoves are organised and the charcoal saving stove is adopted in the city of Bujumbura;
- Performing techniques of carbonization and manufacturing of improved stoves are increased and understood by trained users;
- Stove users are made aware of improved stoves and households have adopted their use;
- Seedlings are set up in individual farms on about 50 ha;
- An experience-sharing visit on the improved methods of carbonization and improved stoves is accomplished by a national officer and 2 stove users and one charcoal man.

Long term outputs

- Contribute to the reduction of extreme poverty and hunger by reducing expenditures relating to the acquisition of wood-energy.

IMPLEMENTATION AND INSTITUTIONAL ARRANGEMENTS

In their development programme covering the period 2006-2010, the Government of Burundi indicated in their priorities the fight against poverty, the preservation of the environment, and the diversification of sources of alternative energies.

The project will be carried out within the framework of the national afforestation through the Ministry for Land Management, Tourism and Environment. The project will be carried out by the staff of the Forestry Department working in the provinces concerned by the project, and the project will be provided with an office space in Bujumbura. A National Director will be appointed by the MINATTE to monitor the implementation of the project.

Risks and barriers

The project implementation can be blocked by the insufficiency of qualified human resources, the low level of the effective participation of actors and the late financing of the project.

Project duration

2 years

COST

USD 200,000

Activities	**Cost (USD)**
Create new woodlots	80,000
Create individual micro-woodlots	40,000
Introduce improved stoves into households	40,000
Popularise improved methods of carbonisation	40,000
Total	**200,000**

BURUNDI

NAPA PRIORITY PROJECT NO. 10

STABILISATION OF RIVER DYNAMICS OF RIVER COURSES OF THE MUMIRWA AND IMBO

Translated from original French version

RATIONALE

The Imbo lowlands receive water from torrents in the Congo-Nile watershed and Mumirwa, which receives a lot of precipitation and slopes steeply. All these zones are very sensitive to lateral and vertical erosion along the axes of drainage, in particular during periods of strong precipitation. Very disastrous situations of erosion characterized by landslip and deposits of alluvia and colluviums in the lowlands are constantly observed and are likely to be accentuated following strong precipitation due to climate change.

The urban areas, in particular the town of Bujumbura that is crossed by 4 of these torrents, are particularly affected by this destroying type of erosion.

It is absolutely necessary to reduce or even remove this type of erosion to preserve both public and private infrastructure located in the vicinity of these axes of drainage.

The relatively weak slope in the plain of Imbo requires rainwater drainage and channeling of rivers and torrents in order to protect the infrastructure (urban bridges, roads, buildings and other equipment) and to ensure viable sanitation.

DESCRIPTION

Objectives

The global objective of this project is to protect the landscapes and the public and private infrastructure, located along the axes of drainage in Mumirwa and the Imbo lowlands, which are threatened by erosion during the periods of heavy precipitations. Ultimately, it is a question of ensuring the socio-economic wellbeing of the population concerned, through the development of a physical environment adapted to the changing climate conditions.

The specific objective of the project is the protection of the vital infrastructure of Bujumbura city located along the axes of the torrents by the stabilization of the river dynamics of river courses.

Activities

- Enhance meteorological and hydrological observation networks;
- Conduct a detailed study of the river dynamics of the river courses selected, in connection with the conditions of precipitations;
- Establishment of a town planning and development master plan of the lowlands taking into account the risks related to the inter-annual fluctuations of precipitations;
- Establish plans for the correction and stabilization of the rivers in question and the protection of the infrastructure in place;
- Carry out work of correction and stabilization on these rivers, starting with those that cross the town of Bujumbura;
- Work out a legislation on public safety in the case of disaster;
- Map out the zones at risk and propose land use standards in these zones or their basins slopes.

Outputs

Short term outputs

- IGEBU data processing collection system and communication system improved;
- Maps of the zones at risk and the zones of priority intervention done;
- River courses stabilised;
- Attenuated erosion;
- Urban infrastructure protected.

In the long run

Preservation of landscapes and natural ecosystems of the Imbo - eroded or flooded lowlands, including those around Lake Tanganyika.

IMPLEMENTATION

Institutional arrangements

The project will depend on the Ministry for Land Management, Tourism and Environment. The ministry will collaborate with the Public Works and Equipment Ministry that includes the urban development services. Implementation would be entrusted to private companies, under the supervision of top managing executives from the above-mentioned ministries.

Risks and barriers

- The high cost of the development works;
- Resistance by the owners or supposed owners of areas concerned.

Monitoring and evaluation

A Monitoring Committee will be set up in consultation between the donor and the ministry responsible. An external team will be responsible for project evaluation and audit.

Project duration

3 years

COST

Total USD 2,030,000

Activities	**Cost** (USD)
Enhance meteorological and hydrological observation networks	80 000
Conduct a detailed study on river dynamics of the river courses selected, in connection with the conditions of precipitations	40 000
Establish a town planning and development master plan of the lowlands taking into account the risks related to inter-annual fluctuations of precipitations	30 000
Establish plans for the correction and the stabilization of the rivers in question and the protection of the infrastructure in place	20 000
Carry out work of correction and stabilizations on these rivers, starting with those that cross the town of Bujumbura	1 775 000
Work out a legislation on public safety in case of disaster	30 000

Map out the zones at risk and propose land use standards in these zones or the basin slopes	25 000
Total	**2 030 000**

BURUNDI

NAPA PRIORITY PROJECT NO. 11.

EDUCATION TO CLIMATE CHANGE ADAPTATION

Translated from original French version

RATIONALE

In Burundi, the impact of climate change will be the lengthening of the dry season leading to increased frequency and intensity of uncontrolled fires.

In the majority of regions, the effects of bush fires are already felt and deforestation has increased in an alarming way in recent years. It is estimated that more than 30 000 ha were destroyed following cases of arson and massive deforestation. Consequently, education and awareness of the population on the dangers of bush fires and deforestation are essential and urgent actions need to be undertaken so that forestation efforts already being carried out in the country are not opposed.

In Burundi, climate change in the past decades caused by increased temperature and heavy rainfall showed that, overall, the terrestrial ecosystems will be able to resist and follow their normal evolution. However, it was noted that anthropogenic actions, in particular close-clearing cuts in farming, overgrazing, bush fires, and anarchistic exploitation of living resources will constitute a dead end in the evolution of the vegetation, under the effect of drought induced by climate change. It was also noted that the length of droughts will worsen the bush fires and thus amplify the degradation of the ecosystems.

These anthropic actions are however related to the way of life of the population. The local communities destroy the ecosystems to ensure their survival. The ecosystems are notably regarded as arable lands and pastoral zones. These are survival issues that make that the problems of ecosystem protection in general and environmental protection in particular are not apprehended in the same way. Certain actions undertaken to stop the famine induced in particular by droughts or floods are not meant to preserve the environment, and very often, do not target the adaptation of the population to adverse effects of climate variability. Solutions often considered like the drainage of marshes in the event of drought, the clearing of forests in the event of land degradation often compromise the protection measures owing to the fact that the majority of the weakened ecosystems are protected and others fall within the State's domain. Regulations to preserve these ecosystems, though incomplete, exist but are not enforced. The political decision makers must understand the adverse effects of climate change and take reasoned measures that are crucial in case of drought and flood.

Description

Global objective

The global objective of the project is education and public awareness on the adverse effects of climate change, bush fires and deforestation so that the population is made aware and is worried about these environmental problems and participates in research of solutions and improved systems of adaptation.

Specific objectives

- Awareness of decision makers and other partners, including the local communities, about the adverse effects of the climate change.
- Fight against bush fires in all the natural areas of Burundi.

Activities

- Training courses of the communal environmental extension workers on climate change;
- Public awareness campaigns of the rural population on the dangers of bush fires and deforestation;

- Work out a national action plan of fighting against bush fires;
- Radio and TV broadcasts on the adverse effects of climate change, the dangers of bush fires and deforestation;
- Produce and multiply tools of awareness and information such as folders, posters, etc in connection with the climate change issue;
- Set up a plan of prevention, preparation and response to emergencies and disasters;
- Meetings to raise awareness of population target groups on the adverse effects of climate change and the effective methods of adaptation, with regard to the natural resources and pubic health.

Short-term outputs

- The population is informed and made aware of the benefits of forest protection against fires and deforestation;
- Communal environmental extension workers are created and trained;
- Representatives of the population on hills are trained on the methods of bush fire monitoring and control;
- Radio and TV broadcasts on the adverse effects of climate change, the dangers of the bush fires and deforestation are produced;
- Powerful awareness tools for adaptation to climate change are available;
- An action plan of fighting against bush fires taking account of the regional specificities submitted to all stakeholders;
- Bush fire village groupings are put in place.

Long-term outputs

- Bush fires have decreased significantly;
- Deforestation has strongly regressed;
- Hydrological and climate regulation systems are reconstituted;
- Population well adapted to the adverse effects of climate change;
- Increase in the agricultural production.

IMPLEMENTATION

Implementation and institutional arrangements

INECN, the institution responsible for environmental education, is the national implementing agency of the project. Coordination of project activities will be made by a National Coordinator. This project will deal with several sectors, and for this reason, several institutions will be involved in the implementation. INECN will collaborate with the department in charge of woodlots. The planning team will include representatives from all stakeholders. A Steering Committee will be made up and will include representatives from the NAPA Committee and the National Environment Commission, members of the biodiversity-related activities coordinating body and representatives from institutions responsible for biodiversity.

This project is the consensus of various actors since it contains the various actions identified based on studies at national and local level and approved by all the population during national and regional workshops. Thus, under the responsibility of the institution responsible for environmental education, the involved actors will be all the institutions responsible for ecosystems and woodlots, the population and the local governments, the nongovernmental organizations, etc.

Monitoring and evaluation

Every three months, the Project National Coordinator, jointly with the National Director will submit to the donor an activity progress report. Tripartite reviews will be organized each year to examine the progress achieved by the project and will bring together representatives from the donor, the Government of Burundi and the Implementing Agency. Field visits will be organized on request by the three partners concerned. A final report presenting the work

completed, the results obtained and the problems encountered will be also presented for approval to the donor, 3 months before the end of the project.

Risks and assumptions

The project does not present any major risk expect the absence of funding for the realization of all planned activities.

Project duration

3 years

COST

Activities	**Cost** (USD)
Training courses of the communal environmental extension workers on climate change	45,000
Public awareness campaigns of the rural population on the dangers of bush fires and deforestation	45,000
Work out a national action plan to fight against bush fires	100,000
Radio and TV broadcasts on the adverse effects of climate change, the dangers of bush fires and deforestation	30,000
Produce and multiply tools of awareness and information such as folders, posters, etc in connection with the climate change issue	50,000
Set up a plan of prevention, preparation and response to emergencies and disasters	60,000
Meetings to raise awareness of population target groups on the adverse effects of climate change and the effective methods of adaptation, with regard to the natural resources and pubic health	170,000
Total	**500,000**

BURUNDI

NAPA PRIORITY PROJECT NO. 12.

PROMOTION OF HYDROPOWER MICRO STATIONS

Translated from original French version

RATIONALE

Burundi faces today an increasing energy deficit due to the fall in dam levels consecutively with the reduction of precipitation and prolonged drought. The country must mobilise investments, construct new hydropower stations and diversify its sources of electric power supply.

On the other hand, Burundi has a dense hydrological network, whose majority of river courses flow from areas that would allow the installation of micro power stations, also workable during the dry season.

These small-size infrastructures are more easily affordable for donors whose vocation is the promotion of the living conditions of the rural population. Wood is the only energy resource for this population. Without electricity, possibilities of production and improvement of the well-being of the population are inaccessible.

DESCRIPTION

Global objective

Promote the development of economic activities and to reduce of poverty, more particularly outside large cities, within an environmentally-friendly framework.

Specific objective

Increase in the rate of electricity supply at the national level through multiplication of micro power stations, starting with regions most underprivileged in energy resources.

Activities

- Carry out studies and updates to identify all the potentialities of hydro-power production.
- Promote, through micro-grants and loans, hydropower micro stations on sites selected according to their relevance for the saving of wood and other climate-dependant natural resources.

Outputs

Short term outputs

- The national potentialities of hydropower production are updated;
- The national capacity of power production is increased and decentralised.

Long term outputs

- The economic and human benefits of the use of electricity are extended to the small urban centres and rural areas.

IMPLEMENTATION

Institutional arrangements

A team coordinated by the Ministry for Energy and Mines will be responsible for the execution of the project. The team will define the procedures for the studies and the realisation of infrastructures entrusted with private companies.

Risks and barriers

- Lower flows of rivers during the periods of rainfall deficit.;
- Delay in the mobilisation of financial resources;
- Difficulties of payment by the communities connected to the power supply network.

Monitoring and evaluation

A team of civil managing officials be set up in agreement with the donor.
The donor will also set up their own project M&E team, which will work in collaboration with the team of the Ministry for Energy and Mines.

Project duration

3 years

COST

Total USD 500,000

Activities	**Cost** (USD)
Carry out studies and updates to identify all the potentialities of power production	100 000
Promote, through micro-grants and loans, hydropower micro stations on sites selected according to their relevance for the saving of wood and other climate-dependant natural resources	400 000
Total	**500 000**