



Regional Initiative – Global environment / Desertification control RIGE/DC

# CATALOGUE OF PROJECTS

Capitalisation of the experiences







Permanent Interstate Committee for Drought Control in the Sahel  
Regional Initiative – Global environment and Desertification control RIGE/DC

# Catalogue of Projects

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# Foreword

The dissemination and sharing of information constitute one of the strategies of CILSS to boost and promote sustainable alternatives for desertification control in the Sahel.

CILSS, in line with this concern, would like to capitalise and enhance the experience acquired through the implementation of its programme "Regional Initiative-Global Environment and Desertification Control, RIGE/DC".

The capitalisation report of this programme is constituted of three volumes as follow:

1. The first volume deals with the overall implementation of the programme, summary of results obtained and achievements, lessons and prospects for future actions.

- 2 The second volume (this document) is a catalogue of micro-projects supported by the programme in the 09 CILSS member States. These are summary of technical papers of projects put together per country. These papers contain detailed information on the projects concerning the results/effects obtained and lessons drawn from the implementation of micro-projects.

- 3 The third volume is a collection of 12 technical papers showing different methods and techniques for the control of desertification, drawn from the micro-projects supported by RIGE/DC. These papers, which are illustrated with photographs, deal with desertification control (DC) technologies: principle, techniques, effects (environmental, social, economic), construction/production conditions, and practical means of succeeding, sustainability and costs. The catalogue also provides a series of strategies/approaches suitable for desertification control (designed within the framework of RIGE/DC's projects), which could help development associations and organisations to undertake desertification control in a better and successful way.

The documents were drafted in such a way as to allow for readability



# NATURAL RESOURCES MANAGEMENT IN FIFTEEN (15) VILLAGES IN THE TIKARÉ AND ROUKO DEPARTMENTS, BAM PROVINCE

## FINANCIAL AND TECHNICAL PARTNERS

CILSS/ IREM/LCD and SOS SAHEL International France

## COST AND FUNDING

- Total cost : 301 659 Euros
- CILSS/ IREMLCD's contribution: 91 013 Euros (30,17%)
- SOS SAHEL International France contribution : 55 474 Euros (18,39%)
- Population's contribution: 155 172 Euros (51,44%)

## KEYWORDS

boulis, soil fertility, degradation, soil restoration, natural resources, capacity building, increase in incomes, market gardening, restoration of vegetation cover

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The populations of the Tikaré and Rouko departments entirely depend on the agricultural sector from which they derive their incomes. The results of the study carried out on "the analysis of natural resources degradation in the Tikaré region" show that the whole population is nearly engaged in agriculture and more than 50% of the entire land is used for agricultural purposes. The ecosystem of the area is characterised by unfavourable climatic conditions (recurrent drought) and heavy erosion resulting into land degradation and depletion of vegetation cover. The climate, which is of the sudano-sahelian type and less favourable to agricultural production, is characterised by low rainfall, which on average varies between 500mm and 600mm per annum. This degradation of natural resources has been aggravated by an unsuitable use and management of resources. Added to this, is a considerable increase in population. Consequently, the agricultural yields can no longer satisfy the essential needs of the population, hence the chronic food crisis.

## ACTIONS TAKEN

- Natural resources management: the populations of the 15 villages have acquired some knowledge through the project, and implemented some actions for the restoration of vegetation cover, protection and conservation of local species. Through concerted actions and the goodwill of traditional and religious leaders, several restricted areas have been demarcated in order to conserve the depleting ecosystems and promote the regeneration of local species.
- Water resources were rehabilitated in order to increase water reserve with a view to promoting off-season activities and also for the supply of water to animals.
- The various training organised had enabled the populations to restore degraded lands in order to increase agricultural production.
- Food security: the project in its field of intervention concerning food security had emphasised on the increase of agricultural yields through capacity building of the population in the techniques of water and soil restoration/conservation by improving their productive potential and by providing them with CES/DRS tools.

- Poverty reduction: this action had involved the realisation of community production infrastructures in order to diversify agricultural production and generate incomes. The gender issue was also taken into account through the creation of specific economic activities with a view to allowing women and youths to diversify and increase their incomes.
- Capacity building: this constitutes an important aspect for the acquisition and sustainability of the project. Capacity building is one of the activities, which has always preceded physical realisations and other investments.

## AREA OF INTERVENTION

15 villages in the Tikaré and Rouko departments, Bam province



## END RESULTS

### Natural resources management:

- 15 restricted village areas earmarked for assisted natural regeneration have been demarcated and protected;
- 2 boulis were rehabilitated;
- 70 ha of herbaceous cover were realised;
- 14,032 seedlings were planted by 62 producers with 12,709 trees still alive, that is a survival rate of 90.57%.

### Food security:

- 339ha of lands rehabilitated with stone bunds;
- 465ha of planting pits;
- 323 manure pits were constructed;
- 541 households have adopted the CES/DRS methods.

### Poverty reduction:

- 2 perimeters of market garden were rehabilitated for 40 operators of which 50% are women;
- Creation of a women crafts centre for the processing of forest non-woody products.

### Capacity building:

- 15 training sessions were organised on institutional development for the benefit of village committees and two departmental committees and an inter-departmental committee;
- Two training sessions were organised on NRM for producers of the 15 villages;
- Two training sessions were organised on ANR for producers of the 15 villages;
- Three training sessions were organised on the improved fire pots' techniques for the benefit of women of the 15 villages;
- Two training sessions were organised on the techniques of processing of forest fruits for the benefit of 100 women;
- A training session in simplified accounting principles was also organised for 30 women of the Manégaaba women processing centre.



## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- Community organisation (organisation and mobilisation capacity of the population to conduct the activities – IDC, village committees): village committees were set up by village general assemblies after a series of cultural activities/sensitisation. Population in each department met to elect members of their departmental committee. Village and departmental committees were trained in order to build their capacity in facilitation activities, population mobilisation and in the conduct of activities within the villages. Departmental committees were involved and made accountable in the planning, implementation and conduct of self-assessment activities on the project. This involvement enabled the committees to fully acquire the project activities. The organisational system put in place was effective to the extent that most of the village and departmental committees' members trained in social mobilisation techniques were elected in their respective villages as members of village development committees (VDC). The inter-departmental committee (IDC) played a role of activities coordination and ensured the monitoring of activities. In addition, it provided assistance and counselling to village committees in order to improve organisation efficiency and mobilisation of the population. The following lesson can be drawn from this action: the population can effectively conduct the activities by organising themselves if their organisational and technical capacity is built up.

- Reforestation by contract: the approach consists in undertaking several sessions of cultural activities on the relevance of the set objective. Thereafter, a list of volunteers is made. Assistance and counselling are given to volunteers regarding the nature of soils, the species that are suitable for the climatic and soil conditions of the area of intervention, the possibility of buying or producing nurseries plants and the organisation of the reforestation activity. The organisation is based on the principle that the entire process and means are provided by volunteers. The seedlings-census taking committees are set up by volunteers. They are also to determine the reforestation allowances based on the calculation of the actual cost. These allowances depend on the plant species. The principle of reforestation by contract is not to pay a producer, but instead to encourage him for the initiative and efforts made in the plantation and maintenance of young trees two years after their plantation, because after two years the survival rate of a tree is very high. Also, it is an approach based on quality and not on quantity, as every volunteer is requested to plant only what he can maintain in order to avoid extensive loss. It has been observed that the distinctive feature of this approach is based on the fact that the project provides results. After taking the census of young trees, each producer enters into a contract with the project. The project follows up the process to ensure transparency in the activity and pay allowances to producers based on the surviving young trees at the end of the contract.

Introduced for the first time in 2006 in the Mid-North region, the approach recorded a high success as 14,032 young trees were planted by 62 producers with a survival rate of 90.57%.

Producer that benefited from the reforestation allowances stated that they used the fund to strengthen their plantation, although there will be no more allowance because the project has been concluded.

- Lessons drawn from the project: reforestation by contract can successfully be carried out by a few people; more than 14,000 young plants were planted by 62 producers with their own means.

- Application of CES/DRS techniques (combination of several techniques, increase in yields): producers received a considerable technological training, which enabled them to combine several technologies in order to increase soil productivity, farm yields and consequently agricultural production. The results of the evaluation study on the impact of stone bunds and soil fertility in the project area have shown that methods such as planting pits, stone bunds, organic manure, half-moons and their combination have provided an average yield gains ranging from 30% to more than 100%.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Boulis (water retention capacity, taking into account the pressure of animals and surrounding villages on the use of water);
- The women's crafts centre (the organisation of women, marketing, commercialisation);
- Schools' orchards (what is to be done to motivate teachers to acquire and engage themselves in the activity).

## NAME OF THE NGO/ASSOCIATION

SOS SAHEL International Burkina Faso



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# ENVIRONMENTAL RESTORATION AND SOIL CONSERVATION

## TECHNICAL AND FINANCIAL PARTNERS

DPA, DPECV, FCD, ADC, Tree AID, CILSS/IREM-LCD

## COST AND FUNDING

Total cost: 53 198 243 Fcfa (81 100.20 EURO)

## CONTRIBUTION

- ATY : 18 252 500 FCFA
- Beneficiaries: 15 087 500 FCFA
- Provincial technical services: 160 000 FCFA
- CILSS/IREM-LCD: 20 083 749 FCFA (30 617.48 EURO)

## KEYWORDS

soil conservation, vegetation cover, soil fertility, reforestation, domestic energy, capacity building.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The Boussé, Laye, Niou, and Sourgoubila townships have, over the decades, been characterised by a continuous degradation of soil and vegetation cover. This situation is mainly due to low rainfall (which in average fluctuates between 500 and 550mm), demographic pressure and anthropic actions. This province is exposed to a situation of extreme poverty, which affects about 58.6% of its population as against 46.4% at the national level. The size of farm lands varies from 1ha to 3ha. This compelled rural populations to adopt soil restoration and agricultural yields improvement measures.

## ACTIONS TAKEN

Manure pits, stone bunds, improved fire pots, plantation of trees.



## AREA OF INTERVENTION

Central plateau region, Kourwéogo Province, Townships of: Boussé, Laye, Sourgoubila, Niou; Villages: Barma (Laye), Barouli, Bantogdo (Sourgoubila), Mouni (Niou), Ghin (Boussé).



## END RESULTS

- 396 compost pits constructed by the population;
- 494 improved fire pots produced by the population;
- 93ha of farm lands rehabilitated with stone bunds;
- 10ha of land reforested by beneficiaries with an average survival rate of 60%;
- Training and facilitation activities were organised for 800 villages;
- Setting up of village management committees;
- Sensitisation of villagers by the association's theatre troupe.

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

• Stone bunds/manure pits: these actions were highly supported by the population as they contributed to the reduction of soil erosion and also improved soil fertility. The manure and stone bunds technology has been used for the past five years in several villages, and this has contributed to the emergence of specific practices (source: discussion, Mouni village):

1. Manure is only applied to soil once every 03 years. Therefore, a manure pit content ensures the continuous fertility of 3ha in a crop rotation system: sorghum – sorghum – pearl millet (1 manure pit content for 1ha of land per year);



2. It has been observed that the yield gain derived from the crop rotation, sorghum – sorghum – millet, is more than 60%;

3. In the case of the combination of sorghum/niebe, a manure pit content is enough to fertilise 2.5ha of land per year (1 manure pit content for 2.5 ha/year);

4. A manure pit content can be used to grow crops on 1.5 ha with the application of the planting pit technique.

- **Plantation of trees:** This activity contributed to the restoration of vegetation cover on small portions of land in beneficiary villages. The continuation of this activity would be good for the reconstitution of vegetation cover.

- **Production of improved fire pots:** The improved fire pots have contributed to reducing the use of firewood. Also, the work loads of women have reduced because they now spend less time in the kitchen. The continuous production of the improved fire pots and its extension to a maximum of villages would be beneficial for the population especially women.

- Capacity building of stakeholders and the organisation of local management committees have enabled to lay the foundation for the acquisition and viability of the project's activities.

#### POINTS REQUIRING FURTHER CONSIDERATION AND PENDING QUESTIONS

- Strengthening close sensitisation on CES/DRS;
- Sensitisation on environmental law and translation of tools into local languages (mooré);
- Improvement of financial support.

#### NAME OF THE NGO/ASSOCIATION

Association Tind yalgré



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# PROJECT FOR THE PROTECTION AND ENHANCEMENT OF PASTORAL AND FOREST RESOURCES IN THE YAGHA PROVINCE

## TECHNICAL AND FINANCIAL PARTNERS

CILSS (IREMLCD), VDS, CIFOR

## COST AND FUNDING

Total cost of the Project : 129 483 944 FCFA

- IREMLCD's contribution: 60 259 490 FCFA
- Population's contribution : 64 684 576 FCFA
- VDS's contribution: 4 539 878 FCFA
- Other contributions (ASTBAL, OASIS, MADRMM): 120 717 Euro

## KEYWORDS

Pasture management, management rules for grazing lands, construction of erosion control structures, assisted natural regeneration, gum arabic production, gum arabic office, organisation of producers, improved bee-keeping method

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The mains local constraints relating to desertification/NRM are:

- Rainfall variation
- Unregulated occupation of land
- Rudimentary agricultural techniques: very low intensification level, traditional agricultural equipments, low application of manure and CES/DRS techniques
- Excessive cutting of trees (fodders, timber, etc.)
- Bush clearing
- Increasing pressure on pastoral resources
- High rate of illiteracy and lack of organisation of producers
- Transfer of natural resources management to communities is not effective



## AREA OF INTERVENTION

Sebba District (19 villages),  
Boundoré District (10 villages), Tankougounadjé District (11 villages)



## ACTIONS TAKEN

- Support for the creation of management committees for two grazing lands
- Stretching of soil (by means of Delphino cart) and regrassing
- Construction of erosion control structures (rehabilitation of gullies, stone dikes, ANR)
- Demarcation, by consensus, of grazing lands
- Support for the drafting of rules for the management of grazing lands
- Support to gum arabic producers/harvesters' organisation
- Construction of erosion control structures in the gum arabic producing areas (dikes stone bunds, stretching of soil, plantation , ANR)
- Training of producers in gum arabic production techniques (tapping, maintenance of gum arabic stands)
- Creation of an office for the commercialisation of gum arabic
- Provision of equipments to producers and groups
- Support for the organisation and commercialisation of gum arabic
- Support to honey producers' organisation
- Training of producers in the improved techniques of honey production
- Creation of a honey processing and packaging unit
- Provision of improved bee-keeping equipments to producers and groups
- Support to the organisation and commercialisation of honey



## END RESULTS

### **Concerning pastoral resources**

- Demarcation of two traditional grazing lands (one of 8047 ha in the Tankougounadjé district and another one of 3751 ha in the Sebba township area)
- Stretching of 192ha of degraded rangeland in the two grazing lands
- Sowing of 200 kg of cramcram seeds on the stretched sites
- Rehabilitation of gullies in two water courses, i.e. (06) structures on the grazing lands of Sebba and another (06) on the grazing lands of Tankougounadjé
- Management rules governing the grazing lands were drafted and submitted to the authority

### **Concerning gum arabic**

- 12 producers groups (men/women) of gum arabic were created and recognised under the law
- A gum arabic producers' union was also established (composed of 15 groups, and 362 producers, that is, 147 women and 215 men)
- 7 gum arabic stands were identified and rehabilitated with erosion control structures (stone bunds, ANR, stretching of soil, plantation)
- A gum arabic office was created and it is functioning accordingly (this enabled to improve the quality of gum and the selling price of producers; 2 tons were collected in 2007 /2008, 6 tons in 2008/2009)
- 160 producers were trained in the production techniques of gum arabic
- A study trip was undertaken to Niger (9 producers were involved in the trip)
- 9 producers' organisations were provided with equipments for the production of gum arabic (carts and bicycles)

### **Concerning honey production**

- A honey processing and packaging unit was set up and it is functioning accordingly
- 156 beehives with additional equipments were provided (anti-bee suits, bee smoker,...) to producers (9 groups and 9 persons)
- 82 producers were trained in the improved bee-keeping techniques
- A study tour was undertaken to Koudougou (12 producers were involved in the tour)
- Involvement of women's organisations in honey production

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- It is really possible to undertake poverty reduction and desertification control activities through the enhancement of gum arabic, pasture and honey production.
- Gradual organisation of the gum arabic sector through the organisation of stakeholders into groups and unions simultaneously with the setting up and management of working capital for the commercialisation of the gum arabic (gum arabic office at the provincial level).
- The project served as a spring board for a synergy of action among stakeholders of the sector at the regional level.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Strengthen the development of producers' organisations.
- The provincial union of gum arabic producers should extend its social base to include many groups and cover the entire province, at least villages with gum arabic potential.
- Ensure the management of gum arabic stands by groups, based on agreements between groups and communities and/or land owners.
- Traditional honey producers were very reticent towards collective action, and therefore need further sensitisation and organisational capacity building, which the duration of the project did not allow to carry out.

## NAME OF THE NGO/ASSOCIATION

Sahel Development Volunteers Association (SVDA)



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- Role of shallows in the generation of incomes for households;
- Role of shallows in food security;
- Role of shallows in the improvement of the living

standard of women;

- Role of shallows in land security for women.  
Lessons drawn from the Project
- The rehabilitation of lands enables women to have a grip on lands (therefore, women were able to capture about 40% of the rehabilitated areas);
- The management of external enterprises employed for the implementation of MP is difficult for a NGO, let alone communities that have little experience.
- The difficulty faced by ACFED/Sahel in the mobilisation of the other contracting party (some arrangements were made to allow the project to start).

### POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Capacity building of the association « Soalimani »;
- Local agreement on land security for women (to be formalised);
- Professionalisation of rice producers (men and women);
- Expansion of the exploited area (shallow).

### NAME OF THE NGO/ASSOCIATION

ACFED / SAHEL (Assistance and counselling Women Environment Development in the Sahel)



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# PROJECT FOR WATER SUPPLY AND LAND REHABILITATION FOR THE BENEFIT OF THE KOMBOARI VILLAGE WOMEN

## TECHNICAL AND FINANCIAL PARTNERS

Regional Department of Agriculture, Water and Fishery resources, IREMLCD/CILSS, ACFED/SAHEL

## COST AND FUNDING

- Total cost: 96 579 173 FCFA / 147 234 Euros
- CILSS/ IREMLCD's Contribution : 49 929 478 FCFA / 76 117 Euros
- Population's contribution /ACFED SAHEL : 46 649 695/ 71 117 Euros

## KEYWORDS

Women, water supply, lands rehabilitation, Shallows rehabilitation, local agreement.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

- Lack of rainwater and deep ground water;
- Lack of training and support to villagers in NRM;
- Lack of conservation and restoration measures for NR.

## ACTIONS TAKEN

- Protection and restoration of lands;
- Supply of drinking water;
- AGR / easing women's hardship;
- Rehabilitation of shallows (growing of rice in shallows).

## AREA OF INTERVENTION

Komboari village / Department of Diapangou, Gourma Province



## END RESULTS

- Provision of equipments to villagers (carts and donkeys, wheel barrows, crowbars, pickaxes, pitch triangles);
- 2 studies were carried out on land tenure system and on Men/Women relationship;
- 112 persons were trained including 76 women and a study trip organised;
- 1 premises/shed to accommodate a grinding mill was constructed
- 1 grinding mill and cereal hulling machine;
- 1 water reservoir with immersed pump;
- 15ha of shallows rehabilitated;
- Rehabilitation of 200ha of erosion control sites;
- Construction of 90 manure pits.

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

Capitalisation factors

- Participation and acquisition of the shallow by producers (men and women);
- Endogenous organisation for the exploitation of shallows;
- Women enhancement in the exploitation of shallows with lands allocated to them henceforth;





# MANAGEMENT OF GRASS TO COMBAT BUSH FIRE AND HUNGER IN THE IOBA PROVINCE OF BURKINA FASO

## TECHNICAL AND FINANCIAL PARTNERS

Delegation MADRRM-SC,OASIS,CMSC<sup>a</sup>; ASTBAL, CILSS/IEM-LCD

## COST AND FUNDING

Total cost: 129 975 000 FCFA, (198 163 Euros)

Financial contribution:

- CILSS's contribution: 64 605 000 FCFA, (98 490 Euros) (49.7%)
- NGO's contribution: 24 223 000 FCFA, (36 928 Euros) (18.6%)
- Beneficiaries' contributions: 41 147 000 FCFA, (62 728 Euros) (31.7%)

## KEYWORDS

Biomass conversion ; land degradation management ; poverty reduction

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The rural production systems in the Ioba province and the South-West in general have, for a long time, remained in a steady state with the environment. But the demographic increase and climatic change of the last two decades have put the region in a "dangerous turbulent" zone. Bush fire destroys every year 80% to 90% of the herbaceous biomass produced by natural forests (i.e. 4,000 to 6,000 kg/ha of dry matters). Meanwhile, the farming systems are essentially based on natural fertility of soils, whereas chemical fertilisers are currently expensive for the production of basic cereals. This results into a rapid depletion of land more so that they are situated in relief areas or because they are light in nature (sandy soil).

The signs of a spiral of "degradation – poverty – degradation" have been noticeable for about 20 years because of a regular occurrence of dry episodes. The area is also faced with an increasing cereal imbalance or deficit.

## AREA OF INTERVENTION

Ioba Province: Guéguéré, Dano and Oronkua districts



## ACTIONS TAKEN

- Sensitisation and training with a view to creating within the target communities new attitude towards a sustainable use of biomass;
- Building of technical capacities of communities to process and manage biomass potential as a result of the various technical trainings organised for them;
- Technical, material and logistic support to village communities with a view to initiating and implementing actions that are geared toward the management of the natural ecosystems in general and farm lands in particular;
- Promotion of income generation activities especially for the benefit of women;
- Appropriate assistance and counselling to communities for the attainment of the expected results.

## END RESULTS

- 13 training and/or refresher workshops were organised on various topics: water and carbon cycle, water and soil conservation, composting techniques, bee-keeping, shea-butter production, soap production, cutting and storing of hay, management of the AGR, etc.
- Provision of equipments in villages for CES works, compost production and cutting and storing of hay;
- 212ha of farms were rehabilitated with the application of stone bunds and 238 manure pits were dug and exploited, thereby contributing to doubling the average production yields of sorghum;
- 118 bee hives, which can produce an average of 15 litres of honey per bee hive and per year, were fixed in 9 villages;
- Five (5) village groups organised themselves for the production of hay. They produced five hay storage barns (as demonstration unit) and about 1,200 bundles of hay;



- Four (4) village forests, which varies from 4 to 100ha each were created and demarcated in three (3) villages;
- Six (6) market gardening areas of 0.25ha were rehabilitated in the villages and four (4) of them equipped with modern wells;
- Setting up of 3 plants' nurseries in 3 villages; each of these nurseries can produce 1,000 to 3,000 seedlings annually;
- Acquisition and installation of 2 shea-butter extractors and 2 shea-butter mills managed by three women's groups trained for the management of these facilities;
- 22 innovative farmers were selected to take part in joint experimentations and other demonstration tests on the intensification and diversification techniques of agricultural production. At the end of the project, these farmers organised themselves into a network, which obtained approval certificate in the field of economically viable sectors.
- Two study trips were organised to the Northern and Cascades Regions for 74 farmers of the area of intervention of the project;
- The image of the NGO AAP was enhanced in the region, especially through the development of new partnerships. The name of AAP is now associated with honey production, with the label "Honey of Tampala", because of this project.

## **CAPITALISATION FACTORS AND LESSONS**

### **DRAWN FROM THE PROJECT**

The principle of competition adopted in the selection of projects at the national level has without doubt enabled to select the most relevant proposals in relation to the objectives of desertification control (DC), global environment conservation and poverty reduction. This inspired AAP in its own implementation strategy of the project;

The flexibility in the projects' implementation strategy of the RIGE/DC's programme had enabled AAP/IIY to apply the principle of competition at the grass root, which allowed it to go beyond the pre-defined objectives.

The contribution to the local empowerment of direct beneficiaries and projects supervising organisations has been a necessary dimension, even if the direct support to the capacity building of project supervising organisations are not admissible in the RIGE/DC's programme.



The two capitalisation studies carried out within the framework of the project have enabled to have further knowledge and understanding of the success conditions and viability criteria of the enhancement activities of the shea-butter products and the development of bee-keeping - factors that contribute to laying the foundation of an effective development strategy for the two activities in the area of intervention of the project.

## **POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS**

How do we strengthen the achievements of projects, which have been completed and which would have reached a certain level and acquired some qualitative results? Two years are enough to arouse enthusiasm but not sufficient to sustain the results of the project, considering the local environmental and socio-economic conditions. The best results are, in essence, those that emanate from minimum complex actions, which combine both ecological and socio-economic objectives.

## **NAME OF THE NGO/ASSOCIATION**

ASSOCIATION ACTION PARTICIPATION / IRE, IRE-YOON (AAP/IIY)



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# PROJECT FOR DESERTIFICATION CONTROL IN THE NATIONAL PARK AREA OF PÔ CALLED KABORÉ TAMBI NATIONAL PARK (KTNP)

## TECHNICAL AND FINANCIAL PARTNERS

- CILSS- IREM-LCD
- PAGEN/FEM/WORLD BANK
- NATURAMA

## COST AND FUNDING (in Euro)

• FEM/WORLD BANK	107328,24
• CILSS/ IREM-LCD	97257,25
• NATURAMA	10229,01
• BENEFICIARIES	15648,85
<b>TOTAL COST</b>	<b>230463,35</b>

## KEYWORDS

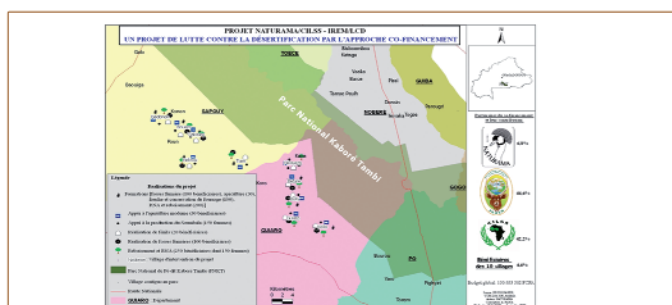
Kaboré Tambi National Park, ANR, reforestation, stacker, bee-keeping, soumbala, CILSS-RIGE-DC, NATURAMA, PAGEN

## LOCAL CONSTRAINTS CONCERNING DÉSSERTIFICATION/NRM

- Constraints related to the low capacity to adjust to desertification control activities;
- Constraints related to the low productivity of farm lands;
- Constraints related to the low incomes generated from the sale of forest non-woody produce;
- Constraints related to various pressures (agricultural, pastoral, human) on the park.

## AREA OF INTERVENTION

This Project is implemented in ten (10) villages bordering the National Park of Pô, called Kaboré Tambi. They are located in the provinces of Nahouri (5 villages) and Ziro (5 villages). The population of the ten villages is estimated, according to various data analysis, at about 8,735 inhabitants: 4,297 women (49%) and 4,438 men (51%). (Hereof is the map of the localisation of the villages).



## ACTIONS TAKEN

### In reducing agricultural and pastoral pressures:

- Organisation of training sessions (Assisted Natural Regeneration and reforestation, conservation of natural fodder, construction of manure pits).
- Plantation of 9,750 young plants: 2,000 fruit trees and 7,750 ordinary trees;
- Application of the Assisted Natural Regeneration techniques in farms;
- Construction of 100 manure pits;
- Construction of 20 fodder stackers.

### In relation to poverty reduction

- Training of 30 bee-keepers;
- Provision of modern honey production equipments to 30 bee-keepers;
- Equipments support (vats, wash bowls, pails) and provision of a base fund (20,000 FCFA) to 150 women producers of soumbala.

### In relation to project monitoring and management:

- The setting up of the project's team;
- Monitoring and provision of assistance and counselling to beneficiaries;
- Conduct of a monitoring mission by CONACILSS;
- Realisation of a supervision mission by experts of CILSS/RIWEDC programme;
- Realisation of the project capitalisation;
- Organisation of an external assessment;
- Organisation of a workshop on the capitalisation and sharing of results;
- Production and fixing of sign-boards;
- Animation of the web-site of NATURAMA on the activities of the project.

## END RESULTS (QUANTITATIVE FACTORS AND CONCRETE EFFECTS)

### Assisted Natural Regeneration (ANR):

100 beneficiaries were trained and 69 of them effectively applied the method. 406 hectares of lands were reforested with an average of 70 species kept per hectare, that is, about 28,420 trees of 20 different species<sup>1</sup>.

### Reforestation operations in households and farms:

In all 9,750 young trees<sup>2</sup> (65%) were planted by a total of 329 beneficiaries. The average survival rate of trees planted in July 2007 by men is 36.17% (2007 agricultural season) and 42.04% for women producers of soumbala (trees planted in 2008).

<sup>1</sup> *Parkia biglobosa*, *Pterocarpus erinaceus*, *Saba senegalensis*, *Diospiros mespiliformis*, *annellia oliveri*, *Faidherbia albida*, *Vitellaria paradoxa*, *Adansonia digitata*, *Lannea microcarpa*, *Lannea acida*, *Bombax costatum*, *Detarium microcarpum*, *Strichnos spinosa*, *Ficus gnaphalocarpa*, *Afzelia africana*, *Anogeissus leiocarpus*, *Elaeis guineensis*, *Khaya senegalensis*, *Prosopis africana*, *Vitex doniana*

<sup>2</sup> *Eucalyptus* (2000), *Manguiers* (2000), *Anacardes* (2000), *Néré* (3750)



**Construction of manure pits:** The projection for the construction of manure pits: The projection for the construction of 100 manure pits was attained. 1,426 cart loads of manure were produced, that is an average of 14.26 cart loads per manure pit. Farm lands enriched with manure are estimated at 47.53 hectares. Manure produced was used for food crop production: 89.22% for maize cultivation, 7.80% for biological cotton and 2.98% for other crops (rice, white sorghum, market gardening, etc.).

**Training in the conservation of natural fodder and construction of stackers:** a total of 20 fodder stackers were constructed and 50 persons trained. 745 bundles were stored and evaluated at about 22 tons of fodder, broken-down as follows: natural fodder (6.210 tons), cultivated fodder (3.10 tons) and collected farm residues (12.75 tons).

**Bee-keeping:** 30 bee-keepers were trained and equipped for the conduct of the activity. The income projection was in the range of 60,000 FCFA by the end of the project. Incomes generated as at the time is estimated at between 2,200 FCFA and 62,500 FCFA, with an overall average of 17,008 FCFA, that is, 28% realisation.

**Production and commercialisation of soumbala:** 150 soumbala producers were equipped and provided with a base fund of 20,000 FCFA. In all, 3789.5 bowls of nere grains were processed into soumbala, which generated incomes ranging from 10,180 FCFA to 50,808 FCFA with an average of 29,069 FCFA.

### Other results

In addition to the initial results, some strategic results were also obtained in the course of the implementation of the project. These results are presented as follows:

**1. Building of conceptual capacity of communities in relation to the management of the park:** the main idea of the project, which was to encourage the communities to perceive a clear relationship between the project and the sustainable management of the park, was highly internalised. This constitutes an important factor in terms of behavioural change in the population of villages bordering the park and a source of motivation and reinforcement of their commitment towards the conservation of the park;

**2. Building of endogenous capacity:** the project enabled to build the communities' capacity on a certain number of techniques that were well mastered (manure pits, reforestation, ANR, cutting and conservation of fodder, etc.). This built capacity available at the local level constitutes a sustainable base for the maintenance of investments and development of this local expertise for the benefit of other producers not connected with the project.

**3. Capacity building of NATURAMA:** The implementation of the project highly contributed to the empowerment of NATURAMA in terms of technical and conceptual capacity regarding the mastering of the management procedures of the RIGE's programme and information on other initiatives of desertification control in CILSS member countries.

**4. The improvement of NATURAMA's capacity in the geographical cover of villages bordering the Park:** The implementation of the project had allowed NATURAMA to cover 10 out of the 70 bordering villages with regard to desertification control activities. This enabled to increase by 14% the coverage rate of bordering villages in terms of support to activities of sustainable management of natural resources in the periphery of the park.

**5. Capacity building in terms of resources mobilisation:** The implementation of the project had enabled NATURAMA to increase its financial volume for the benefit of the park area by 6% within the last ten years. This constitutes a rather significant contribution to the sustainable management of the park and its periphery.

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

### Assisted Natural Regeneration (ANR)

- The Assisted Natural Regeneration is an activity that can have significant impacts in terms of conservation of the biological diversity. It is less exacting in terms of time and resources compared to certain activities like reforestation operations;

- The approach - involvement/accountability of technical services not only enables to strengthen the mobilisation of beneficiaries but also to participate in the monitoring, assessment and capitalisation of results.

### Reforestation operations in households and farms

- Take into account the duration of the project in order to extend, if possible, reforestation operations over two agricultural seasons;

- Take into account the availability of seedlings in the village or in the immediate environment of beneficiaries in order to avoid some losses;

- Take into account the capacity of beneficiaries to plant and maintain trees in order to fix the quota of seedlings per household;





- Take into account the fact that the objectives of reducing agricultural lands degradation and strengthening of vegetation cover cannot be attained by a small portion of the community. In other words, a maximum of beneficiaries should be taken into account;

- Integrate the principle of tree sampler/paymaster by encouraging beneficiaries of other activities of the project (like income generating activities) to carry out reforestation operations in compensation of forest produce, which they are currently developing and which do not belong to them;

- Involvement/accountability of technical services in the conduct of the process in its entirety (supply of seedlings, assistance and counselling during reforestation operations, periodical monitoring after reforestation).

### Construction of manure pits

- Take into account the lunching period of the activity: in such a way as to prevent pits from collapsing in order to be able to enhance production in the course of the on going agricultural season. The experience of the project has shown that most of the pits were constructed in 2007 but their productions were only available for use during the 2008 agricultural season. The productions could have been used in the course of the same farming season in which they were produced if they have been produced earlier, that is, within the months of January/February.

- Take into account requirements that are necessary for the smooth conduct of the activities: especially the transportation means, availability of water, etc.;

- Take into account the choice of the location of the pit and filling mechanism: in order to avoid the risk of fire in the pit while applying some components such as ashes.

### Construction of stackers:

- Reconsider the implementation method by putting emphasis on local service providers: the main lesson that can be drawn from this activity during the execution of the project has been the choice of external service providers. The option of enhancing resource persons with experience in the field, within the village, would have certainly enabled to avoid the case of collapsing stackers.

- Take into account basic equipments: the project focalised on the construction of stackers without considering the need for basic equipments like bundles and pitchforks. This did not facilitate the work of beneficiaries.



- Integrate the monitoring of activities in the programme of the project: the monitoring should be done by resource persons who are expert in the field. A contract for the monitoring of activities with technical services, which undertook the training sessions, would have solved the technical problems.

### Bee-keeping

- Drafting of specifications for the monitoring of activities by training officer: since the promotion of a bee-keeping activity is very onerous in terms of monitoring, the need to have specifications, right from the beginning of the project, between the project team and the training officer is very important for the success of the activity. The experience of the project clearly shows that the low production is due to the failure of the monitoring strategy.

- Prior organisation of beneficiaries: For future development of the activity, the need for prior organisation of beneficiaries and the need to agree on reimbursement mechanism and how these reimbursements will be used should be clearly defined. This is important more so that the actual experience during the implementation of the project has shown that the initial strategy was good.

- Taking into account the development aspects of production: the promotion of bee-keeping activity in a desertification control project has a double objective of conservation and improvement of incomes. If the conservation objective seems to be attained by the use of equipments and materials with less risk on the environment, the development objective should be well analysed in such a way as to obtain a significant value-added ecologically and economically. In the case of this project, this strategy was planned but could not function as expected.



## Production and commercialisation of soubala

- **Taking into account the number of beneficiaries of the activity per village:** the Project supported 15 women per village for the production and commercialisation activity of soubala. This would have been more rewarding if sale mechanisms were anticipated. One of the lessons is that since no clear commercialisation strategy was put in place, the number of beneficiaries of income generation activities should have been determined based on the local market. The project has demonstrated that the low level of income generation is due to the high number of producers whose commercialisation area is restricted only to the local market.

- **Integration of producers into the official micro-finance networks:** the project emphasised on individual production. It would have been more rewarding to set up a mechanism that allows beneficiaries to gradually integrate the micro-finance networks by requesting them to open an account for the saving of profits derived from their activities. This integration would have enabled them to consolidate their activities in terms of access to loans from micro-finance institutions.

- **Support to finding commercialisation opportunity:** the project had planned to support women for the production of soubala with a view to improving their incomes. This objective would have been beneficial if the project had previously integrated in its method, the strategy of finding commercialisation opportunities in support of beneficiaries. This would have reduced the difficulties of the commercialisation of the product; and would also have facilitated the generation of considerable incomes and promote the beneficiaries' activities in big consumption centres.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

The issue of some techniques, which are not well mastered (bee-keeping) and which require refresher training or full training;

The possibility of extending the experience to other bordering villages or increase the number of beneficiaries in the 10 villages.

## NAME OF THE NGO/ASSOCIATION

Foundation for Nature's Friends –NATURAMA



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# NA BUK WEOGO FOR A SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES" IN THE KAYAO DEPARTMENT, BAZÈGA PROVINCE, SOUTH-CENTRAL REGION

## TECHNICAL AND FINANCIAL PARTNERS

Regional Initiative -World Environment and Desertification Control (RIWE/DC/CILSS), Ministry of the Environment (ME), Ministry of Agriculture, Water and Fishery Resources, through their decentralised departments in the Kayao district.

## COST AND FUNDING

Total cost : 106.809 Euros that is 69.959.895 F CFA

- Amount requested, IREMLCD/CILSS: 69.646 Euros that is 45.684.781 F CFA ;
- Other party/Internal financing: 32163 Euros that is 21.098.928 F CFA ;
- Other contribution : ME : 5.000 Euros soit 3.275.000 F CFA.

## KEYWORDS

Restoration of vegetation cover; village forest; Research - peasant action and innovation; rehabilitation CES/DES, Organic manure, peasant farmers' experiences sharing forum.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

- Rapid degradation of natural resources particularly in three (03) village forests;
- Factors of production are not adequately accessible to communities;
- Low technical and organisational capacity of the villages' committees of the ANTD in the area of intervention of the project.

## AREA OF INTERVENTION

11 villages in the Kayao department, Bazèga Province, South central Region



## ACTIONS TAKEN

- Information and sensitisation on sustainable management of natural resources;
- Building of technical and organisational capacity of beneficiaries for the sustainable conservation of their forest heritage;
- Promotion of group dynamics and site mobility in order to seek knowledge on the thematic of the project and their development;
- Research on peasant action concerning topics relating to soils degradation;
- Physical structures for the rehabilitation of lands and reconstitution of biological diversity of 3 village forests;
- Capitalisation and dissemination of the results of the research carried out by peasant





## END RESULTS

- 125 producers were trained on agro-forestry techniques;
- 30 experimentation manure pits produced at least 300 tons of organic matters in three (03) years;
- Three (03) village forests were regenerated with endangered species and fruits' species, hence the beginning of the restoration of the biodiversity;
- Three (03) experimentation plants' nurseries equipped with wells had enabled the production of 7000 utility plants;
- The agricultural yields per hectare also increased by at least 30%;
- Eleven (11) research groups on peasant action and innovation presented the results of their research during a peasant farmers' experiences sharing forum;
- Creation of an internal financing strategy through a hiring mechanism of equipments received within the framework of the project, after the setting up of committees. This experience, on the "Identification and sharing of innovations in West and Central Africa", was presented during a FIDA workshop.

## CAPITALISATION FACTORS

- The experience of internal management/financing of village committees based on the hiring system of equipments;
- The results of research groups:
  - \* Integrated management strategy of village forests;
  - \* Techniques for the rehabilitation of degraded lands;
  - \* The research on peasant farmers' action and their role in the building of organisational and technical capacity of producers.



## LESSONS DRAWN FROM THE PROJECT

- A peasant farmer is a renowned researcher if he is provided with an enabling environment that allows him to enhance his knowledge and experiences;
- Old practices of natural resources management should be enhanced because they are still useful in the current policies and techniques of conservation of water and soils;
- Inter groups' communication and discussions among stakeholders are determinant for the success of any development process at the local level.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Role and position of local stakeholders in the implementation of the National programme for forests management;
- Old methods for the reduction of water erosion;
- Old methods for the conservation of cereals;
- Production of medicinal plants and related illnesses;
- Transcription techniques in the local language of some aspects of the results of the research groups.

## NAME OF THE NGO/ASSOCIATION

Nong-Taaba Association of Dapoury (ANTD)



## CONTACT ADDRESS

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# REHABILITATION OF ABANDONED LANDS LOCATED BETWEEN PONTE SUL & RIBEIRA PRATA, PORTO NOVO, SANTO ANTÃO

## TECHNICAL AND FINANCIAL PARTNERS

- CILSS/IEM-LCD
- MINISTRY OF AGRICULTURE AND ENVIRONMENT
- ADAD

## COST AND FUNDING

TOTAL COST: 18 749 ESCUDOS 170 457 Euro

- CILSS : 10.997 ESCUDOS / 99 980 EURO
- ADAD/Population : 7 752 ESCUDOS / 70 476 EURO

## KEYWORDS

Rehabilitation of degraded lands, C.S.A. mechanical and biological measures, water catchment pool, water reservoir, concrete dike, water bowls, pasture management and enrichment, reforestation, capacity building.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The Porto Novo municipality area, in the Santo Antão Island, situated in between the Ribeira Fria, Chã de Gamboesa, Lagedos and Chã de Matos, is characterised by an annual low rainfall of short duration, irregular and unevenly distributed. The soil is poor and the whole area is exposed to heavy surface runoff because of the sloping nature of the Santo Antão Island. In addition to these basic constraints, are:

- The low capacity (technical and organisational) of direct and indirect beneficiaries towards environmental protection and rational use of natural resources (water and lands);
- The lack of infrastructures for water catchment and low technical capacity for a good management of available water in the long term (wastage of water resources through unsuitable methods of watering);

## AREA OF INTERVENTION

SANTO ANTAO (RIBEIRA DOS BODES & RIBEIRA FRIA)



## ACTIONS TAKEN

**Mechanical and biological measures for the conservation of soil and water.**

- Construction of water bowls with a view to making water easily accessible to animals;
- Construction of dikes in order to facilitate the conservation of rain water, which will be used for irrigation.
- Construction of water catchment pool, which serves as link for the supply of the reservoir;

**Integration of silviculture and animal breeding within a stable, integrated and more productive system.**

- Construction of infrastructures suitable for the nature of the area;
- Harvest promotion techniques;
- Conservation techniques;
- Processing of animal products.

**Capacity building of the population through the sensitisation and training of technicians and direct and indirect beneficiaries in order to educate and provide them with the means of managing and integrating new technologies in their activities on a daily basis.**

- Sensitisation and training of livestock breeders and farmers in target communities in order to strengthen their training mechanisms for the application of new methods;
- Training and capacity building of livestock breeders in silviculture production and animal breeding, animal nutrition, mobilisation of water resources, agricultural engineering and forests, etc;
- Training and capacity building of local Associations' members in the "Management and organisation of Associations", "Accounting" and "Management of floriferous fields";
- Training and capacity building of livestock breeders and technicians in harvest management and pasture conservation techniques;
- Training and capacity building of communities on various topics related to participatory methodology



## END RESULTS

### Adopted CSA mechanical and biological measures

- Construction of two concrete, mortar and dry masonry dikes with a view to correcting water surface profiles;
- Construction of a 100m<sup>3</sup> water reservoir;
- Construction of a water catchment pool;
- Plantation of an orchard around the 100m<sup>3</sup> reservoir;

### Silvo-Pastoral resources used in a more sustainable way

- Construction of an animal product processing unit;
- Rehabilitation of 2 ha of land and livestock breeding farms;
- Construction of four improved enclosures in the Ribeira Fria and Ribeira dos Bodes areas respectively;
- Construction of ten water bowls for goats and cows in the Ribeira Fria and Ribeira dos Bodes areas.

Training and capacity building of technicians and beneficiaries in the rehabilitation and sustainable management of natural resources and in modern techniques of silvo-pastoral production.

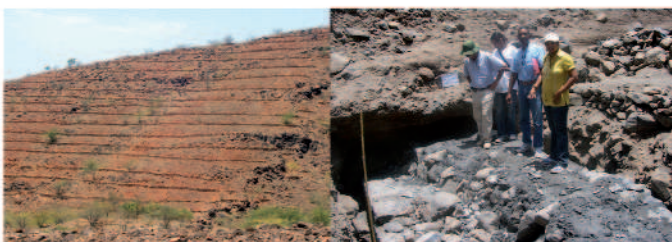
- Training of 50 farmers and livestock breeders;
- Involvement of four local associations;
- DGASP commitment (Department of Agriculture, Silviculture and Animal Breeding) to support local associations in the management of natural resources.

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

The revitalisation of local associations achieved through a participatory methodology enabled the beneficiary population to participate maximally in these new activities and to take possession of the project.

Great interest and massive participation of civil society in these topical issues enabled to attain the objective of promoting the well being of rural families through the diversification of an ecological and sustainable product.

The results were also optimised in the implementation of this project with multidisciplinary impacts due to the fact that on-going development actions in the community were taken into account (that is, schools) by the Delegation of the Ministry of Agriculture, local Associations and the Porto Novo Municipal area.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Measures to be adopted for the exploitation of renewable energy source, for example solar energy to power boreholes.
- Continuous and professional training with a view to strengthening the gains achieved during the period of the project.
- Gradual development of this people oriented micro-economy for women. This will enable them to organise themselves with a view to generating more revenues through micro-credit.

## NAME OF THE NGO/ASSOCIATION

ADAD – ENVIRONMENTAL PROTECTION AND DEVELOPMENT ASSOCIATION



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## AGRO-SYLVO-PASTORAL DEVELOPMENT PROJECT

### FINANCIAL AND TECHNICAL PARTNERS

Delegation MADRRM-SC, OASIS, CMSC<sup>a</sup>; ASTBAL, CILSS/IREMLCD

### COST AND FUNDING

Project budget: 221 148 EURO

- CILSS/FEM : 100 427 EURO
- Other contribution (ASTBAL, OASIS, MADRRM) : 120 717 EURO

### KEYWORDS

Borehole, solar panels, water supply and distribution networks, reservoir, drip irrigation system, animal production, water retention dike, water catchment dike, protection wall, reforestation, earth bunds, desertification control, poverty reduction, capacity building.

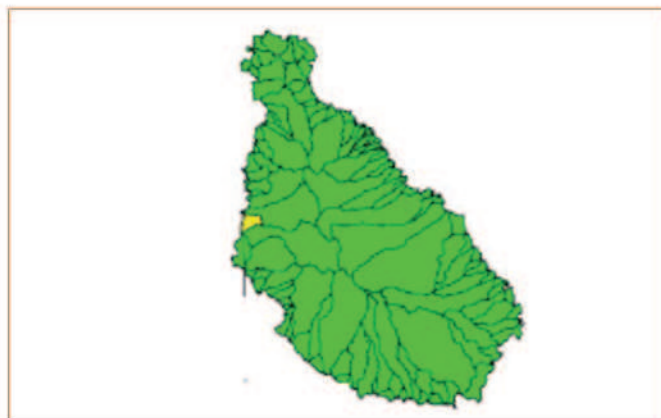
### LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The sub-canarian dry climate of Cape Verde is generally characterised by an average rainfall of 230 mm per year, irregular and unevenly distributed in space and in time. This is aggravated by a frequent and increasing dry spells, which spread over several years.

The area of intervention of the project is characterised by an annual low rainfall of about 120 mm per year, of short duration, irregular and unevenly distributed during the rainy season (3 months – July to October). This low and erratic rainfall is responsible for the low productivity of rain-fed farming characterised, even in vintage year, by an increasing frequency of reseeding and complete crops' failure. The extensive family traditional breeding of livestock constitutes a source of income and savings, which are used to cushion the effects of climatic conditions on agricultural productions. Finally, there have been forest plants' species suitable for the agro-ecological conditions of the area.

### AREA OF INTERVENTION

Bacia Hidrográfica de Achada Leite - Administrative area of Ribeira da Ribeira da Barca- Concelho de Santa Catarina



### ACTIONS TAKEN

- Organisation of a basic socio-economic survey;
- Mobilisation of water: construction of reservoir, retention and water catchment dike, solar pumping system;
- Reforestation and rehabilitation of degraded lands;
- Improvement of the irrigation system (drip irrigation system);
- Improvement in animal production through the introduction of improved breed and improvement of pasture;
- Capacity building.

### END RESULTS

- Increase in the availability of water from 120 to 280 m<sup>3</sup>/day;
- The irrigated area increased from 3.1 to 7.4 hectares with the application of the drip irrigation system;
- Reforestation and rehabilitation of 60ha of degraded lands;
- Increase and diversification of agricultural production for the benefit of the economy of producers of sugar beets, sugar cane and cassava who have started to grow tomatoes, Irish potatoes, sweet potatoes, carrots, cabbages, onions and cocozeles;
- Introduction of improved breeds (4 bovines, 25 goats) and rehabilitation of 50ha of pasture;
- Training of about 50 members of the Achade Leite community



## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- Partnership: A number of partnerships were concluded with various organisations during the planning stage of the project. These partnerships did not work with the same motivation and responsibilities during the implementation stage and this created a difficult situation for the project.
- Capacity building: this organisational, associative and technical capacity building was very determinant in the involvement and accountability of beneficiaries in the conduct of activities.
- The role played by women in the association and their effort in the community for the acquisition of the project.
- The flexibility of RIGEDC's programme: this flexibility had enabled the reorientation of some activities, which facilitated the attainment of the objectives in the social, economic and cultural context of Achada Leite.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Institutional capacity building of ASTBAL;
- The training of livestock breeders in the management of their family's economic entities;
- Improvement of fruits production within the farm;
- Improvement of pastoral production of forests, collection and conservation of pasture;
- Exploration potential of rural areas and ecological tourism in the Achada Leite area.

## NAME OF THE NGO/ASSOCIATION

OASIS / ASTBAL



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# NATURAL RESOURCES MANAGEMENT PROJECT IN THE NIUMI AREA

## TECHNICAL AND FINANCIAL PARTNERS

- CILSS (IREMLCD)
- National Agency for the environment
- United States Embassy
- STAY GREEN FOUNDATION

## COST AND FUNDING

Total cost: 166,560 Euros  
 CILSS's contribution: 100,000 Euros  
 Beneficiaries' contribution: 33,360 Euros  
 Other contributions: 33,200 Euros

## KEYWORDS

Desertification  
 Biodiversity  
 Conservation  
 Adjustment to climate change  
 AGR

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION AND NATURAL RESOURCES MANAGENT

The northern part of the Gambia frequently experiences bushfire. This fire occurred annually between the months of January and May leading to the destruction of forest, pasture and agricultural resources (arable lands and food crops). This bushfire also influences very negatively the migration of animals and the biodiversity.

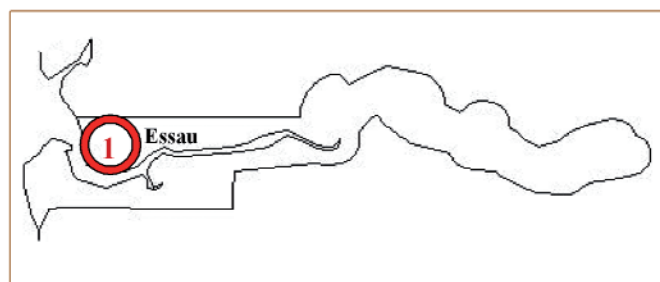
Unfortunately, structures responsible for combating bushfire are obsolete or characterised by the lack of intervention equipments, which accelerate the occurrence, size of fire and devastating impacts on human beings and animals.

In the same way, the illegal felling of trees, non sustainable agricultural practices and the continuous extension of agricultural areas have seriously contributed to the degradation of natural resources.

Besides, the lack of a functional system or mechanism of alert, of capacity building and awareness of the rural population on natural resources management, and the high demand for domestic energy and rural poverty have exacerbated the level of degradation of the environmental resources.

## AREA OF INTERVENTION

The upper and lower regions of Niumi in the northern part of the Gambia



## ACTIONS TAKEN

- **Market gardens**  
 They constitute an economic alternative to the exploitation of natural resources and are in line with the diversification of production activities and income generation sources.
- **Reforestation/schools and communities' orchards**  
 These are communities' plantations, which cover an average of 2ha of land. Their quality vary from one village to another. The cashew orchards are better maintained (effective protection system, weeding, fire break, joint cultivation, etc.) compared to other communities' orchards.
- **Decentralised plant nurseries and central plant nursery**  
 They provide orchards and schools with seedlings. The central nursery is located in the Ndofan village. This nursery of 2ha is equipped with a borehole connected to a pipe powered by solar energy (solar panel). This nursery provides the seedlings needs of 25 villages and 12 schools in 3 districts.
- **Environmental education**  
 The project highly relies on the educational system for the protection and restoration strategies of the environment. This aims at promoting among the young generation some attitudes, actions, capacity and behaviours that contribute to the present and future protection of natural resources.
- **Creation of committees for bush fire control**  
 About 15 committees for bush fire control were set up. These committees are well organised with rules and technical capacity for bush fire control and for the preparation of farm lands in order to avoid unwanted fire. The committees are also equipped (bicycles, cutlasses, boots, water spray projector, megaphones, etc.).



## END RESULTS

- **Concerning market gardening**

Market gardening have generated financial incomes and thus became an economic alternative to the exploitation of natural resources. Four (4) market gardens were set up and they are managed by women groups. A market garden area of 3.5ha is being exploited by about 500 women in the Kanuma village. Each garden generates the sum of 90,000 Dalasis (1,875,000 FCFA) per quarter.

- **Concerning reforestation/communities and schools' orchards** : 50ha of land were reforested especially with cashew trees. Cashew orchards are well maintained (effective protection system, weeding, fire break, joint plantation, etc.).

- **Concerning plant nurseries**

There are about 20 orchards in the village and about 15 are found in primary schools.

- **Concerning the setting up of committees for bush fire control**

About fifteen committees responsible for bush fire control were set up and ten persons were trained per village in the bush fire control techniques and in farm land preparation methods in order to prevent bush fire. These committees have produced some very positive effects with a net reduction in bush fire cases. For example, an average of ten bush fire were recorded annually in Samba Kalla village before the creation of these committees. The setting up of committees brought the average of bush fire occurrences to one bush fire per year. Besides, the populations are strongly mobilising themselves for the activity because it enables them to conserve their natural resources.

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- It is really possible to carry out some bush fire control actions through the creation of bush fire control committees. This is a good practice with innovating aspects that can be transferred or promoted. The activity enables stakeholders involved in the project to produce good results.

- Also, it is possible to protect forests through market gardening activities and ensure the organisation of women through the creation and management of a working capital.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Strengthening the development of women's groups,
- The central plant nursery of Ndo fan should be a training/demonstration tool and should cover the entire northern part of the Gambia.

## NAME OF THE NGO

STAY-GREEN FOUNDATION (SGF)



## CONTACT ADDRESS

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# INTEGRATED PROJECT FOR THE DEVELOPMENT OF THE MAFANCO AREA

## TECHNICAL AND FINANCIAL PARTNERS

IREMLCD, ADCTAL, Department of Water, Forest and Agriculture

## COST AND FUNDING

Total cost: 74 280, 783 EURO

- CILSS's contribution : 33 836,059 EURO
- ADCTAL/Beneficiaries' contribution : 40 444, 724 EURO

## KEYWORDS

Community development, community forest, improved fire pot, stone dike, income generation, information-education-communication

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

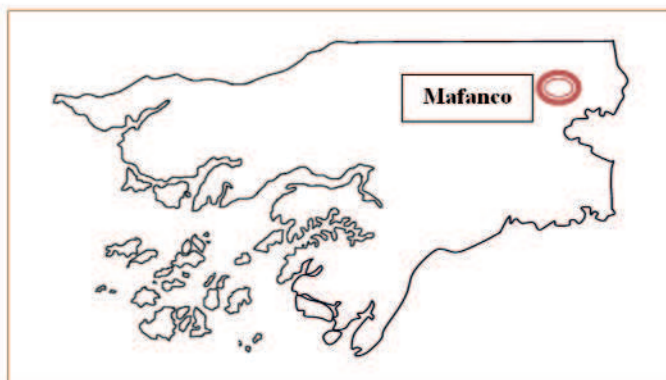
Guinea Bissau is situated in an agro-ecological zone generally characterised by heavy rainfall and vegetation cover. However, forest stands have been dwindling for some years now due to human activities: (i) deforestation and abusive felling of trees, (ii) bush fire, (iii) extension of the cashew tree plantation areas, etc.... These factors have affected forest resources (to the extent that some species are endangered) and resulted to the degradation of the ecosystem through the erosion of watersheds and rice fields.

## ACTIONS TAKEN

Creation of community forests, production of the improved fire pots, market gardening, rehabilitation of dikes, capacity building

## AREA OF INTERVENTION

Gabou Region,  
Sonako Area,  
Mafanco Area



## END RESULTS

- Demarcation and restriction of four (4) community/inter-villages forests (about 100ha): Boriel's forest (25ha), Tchewal's forest (45ha), Mafanco's forest (15ha) and Sintcha Bacari Sama's forest (15ha);
- Construction of firebreaks;
- Rehabilitation of a rice field (10ha);
- About 100 fire pots were produced;
- Training sessions were organised for 35 villages to build up their technical and organisational capacity.





## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- The conservation of part of the forest resources of the area: The restriction of areas contributes to the protection of natural forest (amendment of traditional rules for forest management with a view to defining conservation rules);
- The "improved fire pot" activity was innovative for the population of the area whose main fuel source is wood and charcoal;
- The organisation of the "market gardening" activity, which is an alternative source of income as against coal carbonisation which contributes to deforestation;
- The management of the project was difficult due to lack of skills;
- Trainings/ knowledge acquired: ADCTAL technical capacity was enhanced (in the same way as those of beneficiaries), including its organisational capacity, which enables it to intervene effectively in a group of villages, and also to implement and manage resources and development programme.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Process for the official registration of these forests (legal recognition);
- Specific support to projects supervising organisations (PSO), which are less organised, in terms of programme and financial management.

## NAME OF THE NGO/ASSOCIATION

Association for the Development of Eastern villages (ADCTAL)



## CONTACT ADDRESS

Guinea Bissau

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# PROJECT FOR THE DEVELOPMENT OF THE "BOLANHA" AGRICULTURAL SYSTEM

## TECHNICAL AND FINANCIAL PARTNERS

Lay Volunteers International Association (LVIA) Guinea Bissau, Ministry of Agriculture and Rural Development of Guinea Bissau, Regional Department of Agriculture of the Cacheu Region

## COST AND FUNDING

Total cost of the Project : 259.050 Euros

- Amount requested: 99.650 Euros
- Contribution of other donors (LVIA): 130.350 Euros
- Contribution of beneficiaries: 29.050 Euros

## KEYWORDS

Forest resources; deforestation , saline or acidified lands "bolanhas"

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION /NRM

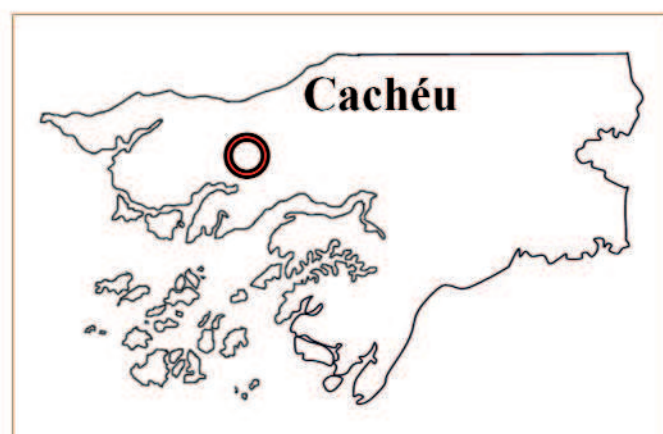
Beyond the abandonment of rice cultivation and the economic risks associated with an agricultural system based on monoculture, another highly negative effect directly responsible for desertification is the deforestation of highlands (planato) for the creation of new plantations. In addition, the deforestation caused by these two types of plantation not only increasingly encourages the desertification phenomenon for many years but also the sedimentation of the mangrove areas. During the rainy season, leached matters are freely carried down from the planalto and accumulate at the bottom from where they undergo a chemical process, which causes the acidification of farm lands.

Besides, since there is no alternative, valid and sustainable source of income, a lot of people are compelled to sell charcoal in order to survive. This also contributes to deforestation process. In fact, very vast areas are deforested in order to obtain wood for the production of coal.

The effect of the destruction of vegetation, even if it is for survival reason, is sadly known in other parts of the world and Africa. For example, we can recall what happened in the Dodoma region of Tanzania where LVIA has been working for many years and where an area with abundant trees has turned into an arid savannah within twenty years because of voluntary fire setting and felling of trees.

## AREA OF INTERVENTION

Guinea-Bissau, Cacheu Region



## ACTIONS TAKEN

The objectives targeted by the project:

- Reduce the exploitation of the forest area in the Cacheu region;
- Improved the exploitation of non-forest areas, especially the "bolanha" rice fields and market gardening areas in the Cacheu region;
- Replace the sale of charcoal with the sale of market gardening produce in the areas of intervention of the project.

The activities planned by the project were centred on 3 sectors of intervention: rice cultivation, market gardening and capacity building of associations.





## END RESULTS

- 560ha of land were rehabilitated/desalinated in 9 locations for the benefit of 16 villages. The areas were calculated with the means of a GPS;
- 9 stores were constructed;
- 2 rice cultivation cycles was realised: 5 tons of seeds were distributed for about 72ha of rice fields during the 2007-2008 farming season. The expected production is estimated at 1.5 tons per hectare;
- 14 wells were dug;
- 14 gardens (35ha) were set up and 3 production cycles realised (2006, 2007, 2008) for the benefit of about 400 persons;
- Three management committees were also set up;
- Various trainings were organised.



## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

One of the obstacles in the development of activities planned by the project was the lack of labour, caused by the emigration of youths who leave the rural areas for the capital. This explains why most of the beneficiaries that contributed to the rehabilitation works of the mangrove "bolanhas" were constituted of aged persons.

In the first year, the intervention of WFP to support villages through the food-for-work programme had mobilised more than 500 persons (by bringing the youths back from the capital); but the programme, which was funded by WFP did not continue in subsequent years. Some reconstruction works on dikes will require the use of machines, which are not available in the country.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Difficulty related to the maintenance of dikes can be a source of de-motivation in the mid-term
- The NGO will carry out a study on best-practices/lessons drawn from the thematic of the rehabilitation of the bolanhas mangrove.

## NAME OF NGO/ASSOCIATION

LVIA –Lay Volunteers International Association

## CONTACT ADDRESS

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Italie : M. Giovanni Armando  
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# REHABILITATION AND MANAGEMENT OF NATURAL RESOURCES IN THE TIMBAGOUM ISLAND

## TECHNICAL AND FINANCIAL PARTNERS

Regional Initiative "Global Environment and Desertification Control" (RIGEDC) and beneficiary community (APHN)

## COST AND FUNDING

**Total cost: 27 912 500 FCFA, (42 552,331 Euros)**

- CILSS's contribution :  
19 448 500F CFA/ 42 615Euros) (69,68%)
- Beneficiaries' contribution:  
8 464 000F CFA / 12903 Euros (30,32 %)

## KEYWORDS

Plant nursery, reforestation, market gardening, river bank fixation, construction of erosion control structures, collection of water hyacinths.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The effect of drought on the ecosystem of the Island has been characterised by a serious reduction in the flood level, which in the past facilitated the cultivation of rice and trees in the area, and provided a spawning ground and an area for a substantial fishing activities. What is remarkable on the Island is that in some cases during flooding, three crops (rice, fruits and trees) could simultaneously be grown on a farm land in addition to fishing. Drought has brought about a depletion of spawning grounds through the degradation of the aquatic vegetation, the reduction in the number of captured fishes due to inadequate flooding, the mortality of fruit trees (mangnifera indica, citrus fruits and even some forest species) and reduction of the rice growing and market gardening areas.

## AREA OF INTERVENTION

Timbagoun Island, Sans fil area, bank of river Niger in the Commune II of the department of Bamako



## ACTIONS TAKEN

Fixation of river banks, creation of plants' nursery, reforestation, market gardening, collection and transportation of water hyacinths, composting, construction of erosion control dikes.

## END RESULTS

- 1000 m of banks fixed, 10ha of land reforested with eucalyptus and neem;
- 5ha of citrus fruits, orange trees, guava trees, lemon trees, tangerine trees, (1,200 trees);
- 486 mango trees' seedlings;
- Construction of an erosion control dike;
- Construction of 90 compost pits for the processing of water hyacinths into humus.





## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- The building of technical and organisation skills of the NGO whose organisation at the local level in relation to beneficiaries, had encourage an effective acquisition of the project (activities);
- The implementation of such project in an urban periphery in an environment, which is often fragile and subjected to various interests;
- The form of mixed farming concerning the growing of condiments, vegetables, market gardening produce and also the off-season cultivation due to flood recession;
- An example of diversification of activities for fishing communities who focalise a lot on fishing (ecological and economic efficiency including an effective use of farm lands);
- The management of the project should always be done with adequate skills and be strictly monitored.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Mechanical fixation of banks should further be considered;
- Rehabilitation of spawning ground and fishing area;
- The local agreement that was drafted is only operational within the Association; it is necessary to follow up the agreement in order to establish a legal text governing the management of resources by appropriate authorities.

## NAME OF THE NGO/ASSOCIATION

ASSOCIATION OF FISHERMEN OF UPPER NIGER (AFUN)



## CONTACT ADDRESS

Président Gaoussou DJIRE pêcheur  
Siège : Niarela rue 145 porte 270  
Commune II District de Bamako Face  
Bank of Africa  
Tél : 00223 2021-53-25 / 00223 66898284



# PRODUCTION OF FIREWOOD AND RESTORATION OF DUNE PASTURE IN TIMBUKTU, MALI

## TECHNICAL AND FINANCIAL PARTNERS

IREM/LCD/CILSS

- Permanent Technical Secretariat //Ministry of the Environment of Mali (ME)
- Urban township (Timbuktu township)
- Rural township of ALAFIA (TIMBUKTU Region)
- NGO AMEN, local associations and farming groups of Timbuktu
  - Association LINGO (12 women/2 men)
  - Association LELINDA (45 women/2 men)
  - Association ANNOURA (17 women/2 men)
  - Economic Interest Group ESPERANCE (23 women/4 men)
  - Touareg nomadic group of INFAZOUANE (248 inhabitants)

## COST AND FUNDING

**TOTAL BUDGET: 99.750 Euros (100%)**

- Contribution - IREMLCD: 58.175,13 Euros (58,3%)
- Contribution - NGO AMEN : 28.113,54 Euros (28,2%)
- Contribution - Populations : 13.461,32 Euros (13,5%)

## KEYWORD

Dry spell, land degradation, reforestation, lack of water, desertification, gender issue, environment, sand silting, dune pasture, animal wandering.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

- Very low rainfall (300mm/year), which is unevenly distributed (duration: less than 2 months);
- Degraded lands
- Very deep water table and water with excessive mineral content (less capillary rise of soil moisture);
- Frequent and high speed wind with temperatures closed to 45 degree Celsius.

## AREA OF INTERVENTION

Timbuktu Township and Alafia rural township, Timbuktu Region, Mali



## ACTIONS TAKEN

- 1st component: production of firewood and timber;
- 2nd component: restoration of dune pasture;
- 3rd component: market gardening

## END RESULTS VERSUS DELIVERABLES

- Result 1: 10/30 ha reforested (with Eucalyptus 90% and Prosopis 10%)
- Result 2: 2/20 ha sown (with Cenchrus 70%, Panicum 25% and 5% Balanites)
- Result 3: 1.5/6 ha of market garden (Irish potatoes 70%, onions 20% and tomatoes 10%)





## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- Transfer of skills from AMEN to beneficiary associations and groups, on social intermediation concerning water points' management (Hygiene and sanitation, financial and accounting management, population's participation, etc.).
- Transfer of capacity concerning project supervision, from AMEN to beneficiary associations and groups (project supervision, plans and estimates, choice and order of appropriate water-lifting equipments and materials, trickle methods, reforestation and hydraulic structures maintenance techniques, etc.).
- Initiation of local stakeholders, by AMEN, into the management of resources and coordination of project activities (planning, implementation, monitoring and evaluation), development of new partnership, initiation of women entrepreneurship in the production and management of the sale of wood, etc.).
- Support to technical and technological training (methods of reforestation and growing of crops in dune areas, trickle method, operation and maintenance of motor pumps, water-supply system and well boring, etc.).
- The lesson drawn from this project is based on the capacity to integrate an extreme environmental context in which WATER MANAGEMENT determines any progress or development. In fact, water issues constitute a critical condition that needs to be solved first for any project to be sited in the Timbuktu Region.
- Finally, sowing on dune pastures has not always been an appropriate answer to the demand for livestock fodder in this desert environment, which characterises the Timbuktu area. The dune pasture restoration approach should be spread at least over 03 years. The failure of the restoration of dune pastures is due to its complexity in northern sahelian area.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- In spite of the very low success rate obtained in reforestation (33%) and almost nothing in the case of growing of crops on dune pastures (highly dependent on rainfall) and in market gardening, the motivation and commitment of stakeholders have not dwindled.
- The project is still on with 02 out of the 04 associations including the Infazouane group owing to the technical support of the NGO AMEN,.
- What about the resumption of the intervention of RIGEDC/CILSS? It has been suspended since July 2007.

## NAME OF THE NGO/ASSOCIATION

NGO AMEN (Alliance in Mali for the Environment)



## CONTACT ADRESS

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• Contact : M. Ibrahima BA  
Director - NGO AMEN  
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# SUPPORT TO REFORESTATION AND REHABILITATION OF THE GUM ARABIC STAND IN THE FASSOUDÉBÉ AND GUÉTÉMA TOWNSHIPS

## TECHNICAL AND FINANCIAL PARTNERS

IREMLCD, Woiyo Kondeye, District department for the conservation of nature, Fassoudébé and Guetéma townships

## COST AND FUNDING

Total cost: 38 284 730 FCFA / 58 450 Euros  
 IREMLCD/ CILSS: 19 918 800 F CFA / 30 410 Euros  
 NGO Kondeye : 6 521 930 FCFA / 9 957 Euros  
 Beneficiaries : 11 844 000 FCFA / 18 082 Euros

## KEYWORDS

Gum Arabic tree, creation of nurseries, training, improvement of water points, reforestation.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The Nioro area of the sahel is situated in the North-West of Mali. The desertification process, which appeared in the area since the major drought that occurred in the 1970s had resulted into the reduction of rainfall and an increasing deterioration of the climate, which has had adverse impact on the economy, vegetation and animals. Concerning vegetation, the recurrent dry episodes, which are almost endemic in the zone, have led to the depletion of almost all the forest stands. Today, a lot of species like the gum arabic have practically disappeared, whereas these species contribute to the maintenance of soil fertility and protection, and can also reduce dry episodes by creating a micro-climate favourable for socio-economic environment through the harvest and sale of gum arabic.

## ACTIONS TAKEN

Trainings/sensitisation, study on the gum arabic sector, setting up of plants' nurseries, reforestation, provision of infrastructures (wells, training centres)

## AREA OF INTERVENTION

The Fassoudebe, Guetema and Nioro townships, (Nioro area)



## END RESULTS

- A study was carried out on the gum arabic sector in 14 villages of the area of intervention of the project,
- A centre was constructed and equipped,
- Four communities plants' nurseries were created in the villages of: Nioro, Fassoudébé, Dioba and Haoudia,
- 3008 seedlings were produced in nurseries: gum, baobab, jujube, moringa, eucalyptus, forage crops and pride of Barbados,
- 8ha reforested by direct seeding in 8 villages,
- 14 management committees were created in each village,
- 28 persons including 15 women were trained in: seedlings production, self organisation, nurseries management, fire break production techniques, compost production and in planting pit techniques,
- 2 open wells were dug in Nioro and Fassoudébé,
- Change in people's perception in relation to desertification control considered as men's activities with the involvement of women,
- Improvement of status of women who participated in the project through acquisition of new skills and improvement in their incomes,
- Availability of nursery farmers (men and women) in the area of intervention of the project.



## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- Low project conceptual level: In fact, the reference and analysis study did not enable to situate the reality of the social dynamics in terms of natural resources management (NRM) and rehabilitation of gum arabic stands (the gum arabic is neither an objective nor a concern of villages selected and which are mainly inhabited by pastoral communities);
- The technical choice (direct sowing of the acacia Senegal seeds) was not appropriate because of the nature of the terrain and the wandering effects of animals;
- The difficult relationship with the local department in charge of the conservation of nature had a negative effect on the implementation of the project;
- Initiation of local stakeholders in natural resources management: The project contributed a lot to the awareness of villagers (who are mainly transhumant livestock breeders) on the problematic of NRM and DC and to the identification of persons and groups that are involved in poverty reduction and food security activities.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- The technique of direct sowing of the acacia senegal requires further consideration

## NAME OF THE NGO/ASSOCIATION

Woïyo Kondeye



## CONTACT ADRESS

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Porte : 590  
Tél : 762 24 68



# INTEGRATED PROJECT FOR THE REHABILITATION OF THE MAHMOUDA'S POND

## TECHNICAL AND FINANCIAL PARTNERS

ASEAV, local population and IREMLCD

## COST AND FUNDING

### First phase :

- Total cost of the Project : 59,546.33 Euros
- CILSS's contribution : 41,326.66 Euros
- Population's contribution: 5 523.33 Euros
- ASEAV's contribution: 12,696.33 Euros

### Second phase :

- Total cost of Project: 114,666 Euros
- CILSS's contribution: 77,302 Euros
- Population's contribution: 23,518 Euros
- ASEAV's contribution: 13,846 Euros

## KEYWORDS

Sustainability of the pond, rehabilitation of a humid area, capacity building of the population, sustainable management of shared natural resources, irrigation scheme, construction of erosion control structures, dune fixation, local agreement.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The Mahmouda's pond is a big flood plain, bordered in the west by sloping rocky hills, which extend towards the pond and in the north by an extensive continental dunes area located on less hilly plains.

The pond receives its water from four directions:

- One south-east direction, which takes its source in Mali; the wadi that carries this water flows through Bougadoum, situated 100 km away;
- One south direction, which flows through Bou Messaouda situated 137 km away; this water also takes its source in Mali;
- One north-east direction, which flows through Maghta Teichtayé, situated 80 km away and which takes its source in the highlands of Dahr Nema and supply the highest rate of water flow;
- One east direction, which flows through Oum El Bez (Moughataa d'Amouri) located 150 km away; this wadi also takes its source in Mali.

Besides its surface area (16,200 ha), Mahmouda is the largest district of all the humid areas of the eastern part Mauritania. Aquatic plants like the typha sp and nymphaea lotus grow within the pond, bordered by four villages.

The Mahmouda's pond shelters an exceptional biodiversity and is consequently a favourable area of reproduction for numerous animal and vegetation species. It also plays a vital economic role in the life of the surrounding or resident rural populations. In fact, two hundred (200) households practise agriculture in the area, which also provides watering place for more than twelve thousand (12,000) head of livestock.

These are the reasons that explain why the survival of the pond is seriously threatened by anthropogenic and physical factors (especially recurrent dry episodes). In fact, the management "mining" of resources by the population and the lack of local development and joint management strategy for the pond have resulted into a gradual depletion of woody and herbaceous vegetation and the invasion of soil by *calotropis procera* (an indication of the magnitude of desertification). This situation is growing with worsening climatic conditions (recurrence of dry spells), unregulated felling of existing forest trees for the construction of fences, enclosures, tents, sheds, production of charcoal, and also with the non implementation of the transfer of natural resources management to communities and the lack of organisation of producers and overgrazing in the surroundings of the pond.

## ACTIONS TAKEN

The following actions were carried out during the first phase of the project between December 2005 and March 2007:

- Mechanical and biological fixation of dunes ;
- Construction of dikes;
- Protection of the pond's mouth;
- Creation of management committees;
- Drafting of rules for the management of natural resources. The following actions were taken during the consolidation phase (2008 – 2009):
- Strengthening of dune fixation;
- Construction of erosion control structures (weirs to slow down water runoff speed);
- Enrichment of the vegetation cover and reinforcement of restricted areas;
- Construction of new dikes with draining outlet structures.

## AREA OF INTERVENTION

Mahmouda's pond

It is situated 20 km away in the western part of Néma (16°18' - 16°31' N; 7°31' - 7°44' west).

It is located in the Wilaya of Hodh Chargui (Moughataa of Néma, Bériveva) township in eastern part of Mauritania.





## END RESULTS

- 45ha of dunes were mechanically and biologically fixed ;
- 20ha were fenced for the protection of the wadi's mouth and put under surveillance;
- 06 dikes were constructed including 03 with outlet structures;
- Creation of management committees in 03 village;
- Management rules were drafted and submitted to appropriate authorities for approval;
- 03 weirs were constructed in order to reduce the speed of water runoff;
- Rehabilitation and reinforcement of 02 dikes (Djegré 1 and Djegré 2), equipped with outlet structures, and construction of a new dike at Aweinat. The flood area of the 02 rehabilitated dikes is 100ha and that of Aweinat is 128ha;
- 01 well was rehabilitated;
- 300 persons were sensitised on the actions undertaken by the project within the pond's area;
- Improvement of animal biodiversity (west Palearctic and afro-tropical ducks, garganeys, northern shoveler, dendrocynes ducks) and ichthyological fauna (reproduction of *Protopterus annectens*).

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- The structures, which were implemented within the framework of the project, enable to control gully erosion and reduce the speed of flowing water towards the pond and cultivable lands of the three villages. These structures effectively protect soils and dikes located downstream and prevent the erosion of village lands.
- The three (03) dikes (Djegre 1, Djegre 2 and Aweinat) together with their outlet structures protect flood areas (about 228 hectares). This allows the growing of crops (millet, sorghum, beans, squash) with very high yields. In other words, all the poverty reduction and desertification control actions were successfully carried out through irrigation scheme.
- The sensitisation and training of the populations enable to construct the structures in a better way (weirs for slowing down water runoff and dikes) and to undertake dune fixation activities;
- The strengthening of the pond increased fishing activities in the area. In fact, the number of fishermen has increased from three (03), before the implementation of the project, to about hundred (100) today. This means that the fishing opportunity has highly increased.

## POINTS REQUIRING FURTHER CONSIDERATION AND PENDING QUESTIONS

- Strengthen the development of village committees by putting emphasis on organisational capacity building;

- Target areas, which are to be rehabilitated and the type of equipments required for dune fixation;
- Sensitise, inform and involve stakeholders of the local agreement in the definition of roles and responsibilities in order to ensure a good conduct of this component and sustainability of pond protection actions. The social base of the local agreement should also be extended to include herdsmen who regularly stay in the area;
- Enhance the resources of the pond by supporting women and youths' groups in surrounding villages;
- Jointly manage the resources of the pond;
- Initiate sustainable tourism activities around the pond area in relationship with surrounding historical sites (Koumbi Saleh, Aoudagost, Walata, etc.).

## NAME OF THE NGO/ASSOCIATION

Association for the protection of endangered animal and vegetation species in Mauritania (ASEAV)



## CONTACT ADDRESS

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# PILOT PROJECT FOR DESERTIFICATION CONTROL AND POVERTY REDUCTION IN THE WILAYA OF BRAKNA, MOUGHATAA D'ALEG, MALE DISTRICT

## TECHNICAL AND FINANCIAL PARTNERS

ANDS, local population, MDRE, FLM and IREMLCD

## COUT ET FINANCEMENT

TOTAL COST: 193 169.9 EURO

- CILSS's contribution: 81, 837.67 EURO
- ANDS/Beneficiaries' contribution: 43, 333.33 EURO
- MDRE/DEAR's contribution: 5 500 EURO
- FLM : 16, 666.6 EURO

## KEYWORDS

mechanical and biological fixation of dunes, sand removal/protection of infrastructures, reforestation, restricted area, rehabilitation of dikes, poverty reduction

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The Brakna area is characterised by a desert climate (50 to 200mm of rainfall/year). Based on the available climatic data covering a period of 30 years (1971 – 2000) the Wilaya of Brakna is faced with worsening climatic conditions, which translate into:

- A reduction of the quantity of rainfall.
- An increase in the frequency of dry periods
- An increase in water evaporation...

This climatic condition is accompanied by other phenomena such as:

- Sanding-up of socio-economic infrastructures.
- Land degradation.
- Low agricultural yields
- Depletion of the flora and wildlife.

## ACTIONS TAKEN

- Restriction of a gum arabic stand.
- Dune fixation.
- Rehabilitation of dikes
- Removal of sand from infrastructures
- Promotion of income generation activities.
- Construction of absorbing well
- Capacity building

## AREA OF INTERVENTION

Wilaya of Brakna



## END RESULTS

- Dune fixation (6,000 linear metres of mechanical fixation of dunes)
- Removal of 6,000 m3 of sand (from schools and social infrastructures that are now accessible in the village of Blekhtair)
- 63 dikes were constructed; and this enabled to increase and diversify crop farming
- Restriction of 6ha of gum arabic
- 20ha of income generation forest was restricted and managed
- 4 absorbing wells
- 6ha of market gardens
- An AGR identification study was carried out and 13 out of the 16 micro-projects, which were initially financed are effectively on course after two years
- Creation of 6 village committees and an inter-village management committee
- Organisation of a seminar and 4 inter-village meetings
- 255 persons were trained including 130 women in sanding control techniques and taught how to read and write.





# REHABILITATION PROJECT OF A DEGRADED COMMUNITY LAND IN BAREINA

## TECHNICAL AND FINANCIAL PARTNERS

ADD  
Local population  
MDRE  
WFP  
IREMLCD

## COST AND FUNDING

Total cost: 188 664 Euros

- CILSS's contribution: 92 540 Euros
- ADD 's contribution: 17 750 Euros
- Beneficiaries' contribution: 44 800 Euros
- MDRE/WFP's contribution: 33.574 Euros

## KEYWORDS

Mechanical and biological fixation of dunes, protection of infrastructures, reforestation, gum arabic

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

Just like most of the sahelian countries, Mauritania has been seriously affected by the consequences that resulted from the drought that occurred in the 70s and 80s and which led to serious changes in the form of organisation and management of land. Among these consequences is the environmental degradation, which led to a substantial reduction in the agricultural production potentials and erosion of the biodiversity. The Bareina township is one of the regions, which have been hardly hit by the effects of this phenomenon. The historical profile of Bareina has been marked, in the 70s and 80s, by a major drought during which the community was invaded by sand dunes that destroyed a lot of houses.

## AREA OF INTERVENTION

Bareina



## ACTIONS TAKEN

- Restriction on a gum plantation;
- Fixation of sand dunes;
- Reforestation;
- Capacity building.

## END RESULTS

- Setting up of a local management committee and training of the committee (organisation of a three day workshop for about thirty persons);
- 1 nursery
- 80 000 seedlings were produced
- 2 main dunes extending over the village were fixed including the plantation of 40,000 seedlings on the dune situated in the eastern part of the area,
- Restriction on a 65ha of gum plantation, which is to be rehabilitated including 40ha fenced.





## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- An area characterised by a complete stabilisation of dunes and the resurgence of vegetation;
- A restriction, which contributed to the rapid reconstitution of the protected area;
- The building of technical and organisational capacity of beneficiaries - a guaranty for an acquisition of the investment by the community;
- The interest manifested in the biological fixation is due to the fact that the choice of plants species enable to generate incomes as a result of the production of gum arabic;
- The rehabilitation of the green belt is an opportunity for the development of market gardening in the area protected by this new vegetation cover;
- In such an environment (2 months of rainfall and less than 200mm of rainfall per year), the management (availability) of water determines the success of any action of this magnitude.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Finding a lasting solution to the issue of water supply.

## NAME OF THE NGO/ASSOCIATION

Association for a Sustainable Development (ASD)



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## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- The impact is great in terms of CES DRS: the retention of water has facilitated the diversification of crops farming as against the traditional system, which until then encouraged the cultivation of millet alone. With the rehabilitation carried out by the project, farmers can now grow millet on the periphery, maize in more moistened area as well as squash and niébé.
- The emergence of an income generating restricted area, which is self-managed: jujubes are sold at 200 UM (0,6?) per litre, cloves for leather work at 400 UM (1,2?) a kilogram and gum arabic between 500 and 1000 UM (1,5 to 3?) a kilogram.
- Sand removal is a very expensive operation because of the need to move a bulldozer to isolated villages. Also, if the area, which had been clear off is surrounded by dunes, which have not been fixed, the impact will be limited in time.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- A study evaluating the economic production of the Erredh village's forest and analysing the management system, which had been adopted.

## NAME OF THE NGO/ASSOCIATION

National Development and Relief Association (NDRA)



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# IMPROVEMENT OF THE WATERSHEDS AND KORIS OF YOURI, KAHÉ, BOYANGA, BOTARÉ AND GUILLÉHEL

## TECHNICAL AND FINANCIAL PARTNERS

IREMLCD / CILSS, Beneficiaries : Youri Rural Township,  
CONA – CILSS, CNEDD

## COST AND FUNDING

Total cost of projects : 150 307 187 FCFA, financed in two (2) phases of (2) years each

- Agreement n°13 /FFEM/IREMLCD/2005 of a sum of fifty millions six hundred and thirty seven thousand two hundred and seventy two (50 637 272) francs CFA, and twenty two million seven hundred and fifty seven thousand and two hundred (22 757 200) francs CFA by beneficiaries.
- Agreement n°35 /FFEM/IREMLCD/2007 of a sum of fifty three million four hundred and fifty four thousand two hundred and seventy five (53 454 275) francs CFA and twenty three million four hundred and fifty eight thousand one hundred and forty (23 458 140) francs CFA by beneficiaries and the federation. That is to say a total of : 104 091 847 FCFA financed by IREMLCD/CILSS and 46 215 340 FCFA by beneficiaries and the federation

## KEYWORDS

Improvement of watersheds and koris, earth bunds; forest trenches; plantation of trees; reseeding of graminaceous plants; nursery; reforestation; market gardening; bank fixation; construction of erosion control structures; collection of water hyacinth

## LOCAL CONSTRAINTS CONCERNING DE DÉSERTIFICATION/NRM

Formerly occupied by lush vegetation, the area of intervention of the project was exposed to the combine actions of natural and human phenomena, responsible for the heavy degradation of the ecosystem. These combine actions gave rise to the rapid propagation of wind and water erosion and the lost of thousand of tons of arable soils every year, removed and carried away by winds and water flow, which are drained off through gullies and koris and threaten houses and productive lands in shallows and valleys. The direct consequences were the glazing of plateaux, degradation of lands situated in watershed areas and sand silting of shallows, hence the reduction in production, which resulted into food and fodder deficit. Economic lost due to erosion are manifested in several ways: lost of soil fertility, depletion of farm lands and degradation of water balance (lack of recharge of underground water, flooding of shallows...). Erosion also has some indirect effects on social life.

## AREA OF INTERVENTION

Youri Rural Township (Tillabéry Region / Niger)



## ACTIONS TAKEN

Construction of earth bunds and forest trenches, cribbed and dry masonry weirs and plantation of trees.

## END RESULTS (QUANTITATIVE FACTORS AND CONCRET EFFECTS)

- 400ha of earth bunds were constructed;
- 47ha of trenches were dug;
- 60 cribbed weirs constructed enabled to reduce the speed of water runoff;
- 40 000 trees were planted;
- 50 farmers were trained in plant nursery techniques;
- A village nursery of 82,616 plants was set up.





## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

The implementation of this project enabled to draw a certain number of lessons:

- Techniques: Application of the desertification control techniques through the combination of several erosion control methods, and the watershed approach whose network starts upstream and goes downward.
- Concerning institutional and organisational capacity: ensure producers' understanding and commitment to effectively manage project structures in a sustainable way. Therefore, the approaches that were adopted are: the training and education of fields officers on a suitable approach to the rural world; sensitisation, which aims at encouraging people to appreciate their environment at different time scale in connection with agricultural activities; incentive "cash for work" taking into account the priority needs of the population.
- Also, the erosion control mechanisms must meet the following requirements: rehabilitation should not be instantaneous and restricted to only erosion control devices; avoid transpositions that are not suitable to the physical and socio-economic conditions of the milieu, and finally, human being must be placed at the centre of all development actions, which will be undertaken.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Rehabilitation of banks of koris
- Continuation and sustenance of the actions
- Management of trees planted



## NAME OF THE NGO/ASSOCIATION

FEDERATION - MARHABA



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# REHABILITATION OF THE WATERSHED AND POND OF TAFAGOU

## TECHNICAL AND FINANCIAL PARTNERS

(IREM/LCD /CILSS - Beneficiary Communities)

## COST AND FUNDING

Total cost : 97 762 530 F CFA, (149 038 Euros) based on two financial agreements that is:

- the CF N° 32/ FFEM/IREM LCD/CILSS of a total amount (31 880 392) F CFA, (48 601 Euros) and
- the CF N° 38/ FFEM/IREM LCD/CILSS of consolidation and taking into account of the watershed with remaining balance of (29 974 741) F CFA, (45 696 Euros)

### Financial contribution

- CILSS's contribution: 61.852 105 F CFA, (94 297 Euros) (63.23%)
- Beneficiaries' contribution: 35 910 425 F CFA (36.77 %)

## KEYWORDS

Rehabilitation (CES/DRS: big earth bunds, half-moons, stone bunds, stone dikes, cribs), annual re-growing of graminaceous plants, in-depth digging of the minor bed, construction of stone weir and reforestation.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The recurrent droughts of 1974, 1984 ... had compelled local sedentary communities to engage in livestock breeding and nomadic shepherds who were formerly and exclusively livestock breeders to practise agriculture. These two modes of adjustment to nature combined with a high population increase and an increasing number of livestock had generally accentuated pressure on natural resources, more specifically on Tafagou land (the only pastoral enclave shared by several villages Songhoy and nomadic tribes).

The high pressure resulted into a heavy and abnormal burden, massive deforestation of the pond's watershed and its forest gallery. This led to heavy water and wind erosion, which stripped the topsoil and resulted into soil crusting and a massive silting of the pond's bed whose flood water feed the Gorouol tributary of the river Niger.

## ACTIONS TAKEN

construction of half-moons, earth bunds, cribs, stone bunds, in-depth digging of the minor bed of the pond, construction of weirs, stone dikes, re-growing, reforestation and drafting of a local agreement.

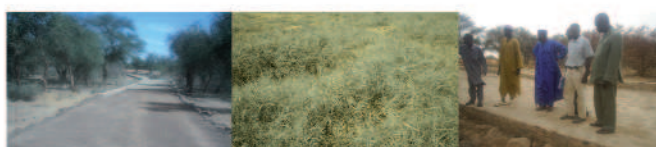
## AREA OF INTERVENTION

TAFAGOU-GOROUOL/TERA/TILLABERI/NIGER



## END RESULTS (QUANTITATIVE FACTORS AND CONCRETE EFFECTS)

- Half-moons combined with earth bunds: 55 ha, regeneration of vegetation cover;
- Earth bunds: 189 ha, regeneration of vegetation cover and improvement of the herbaceous biodiversity;
- 20 ha of stone bunds, reduction in the speed of water runoff from hills towards the remaining part of the watershed;
- In-depth digging of the pond's bed by 1m and an increase in the water retention capacity of the pond;
- 1 weir, easy passage of road users and an improvement in the water retention capacity of the pond; about 20,000 m3 of flood water and an increase visit of some species of migratory birds to the area;
- 2 cribbed weirs, sedimentation at the base of the structure;
- 22 stone dikes, sedimentation and prevention of sand silting
- 1 Management Committee (MACO) was formed, acquisition of structures begins;





- One local agreement was drafted and validated but not yet adopted and popularised by appropriate authorities (Mayor, Prefect) but it has already been unanimously accepted by users of the resources of the area.
- Other concrete effect: increase in incomes and reduction of rural urban migration (cash for work approach). In fact, in the past the able-bodied of the concerned communities were obliged to immigrate to Nigeria, Ghana, Côte d'Ivoire, or elsewhere in big towns in order to complement the family budget but with the structures put in place, nearly all of them stayed back. Besides, during the various assessments, they all affirmed that owing to the project they were all able to meet some expenses and sometimes made some savings.

### **CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT**

- Intercalated earth bunds and half-moons techniques and the combination of several CES/DRS structures based on the topography of the terrain. Preference must be given to watershed approach in the context of the rehabilitation of a pond or any other water body;
- Inter relationship between desertification control, migration and poverty reduction, that is to say that some minor actions at the local level will not only be seen as adjustment strategies but also as means to maintain local communities in place in order to reverse the trend;
- The local agreement is a means of promoting local management of natural resources;
- Delegating the supervision of projects to target groups should be encouraged as a means of acquiring the CES/DRS techniques by local beneficiaries;
- The duration of projects should be increased (4 years) in order to enable the population to acquire the techniques and the entire sustainability measures;
- The watershed approach is a suitable answer to the rehabilitation of degraded lands;
- Positive appreciation of the cash for work approach by beneficiaries;
- Difficulty associated with the carrying out of an afforestation operation on a grassland;
- Improvement of the herbaceous and wildlife diversity (cases of birds, some gazelles, small rodents);
- Application of results requires some supports in terms of capacity building of beneficiaries at the end of the project.

### **POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS**

- Mark out the travel distance defined by the local agreement;
- Support the implementation of the local agreement;
- Integration of the local agreement into the laws and legal texts governing natural resources, especially land issue;
- Reconsider the co-financing modalities by fixing the contribution of communities at 25%.

### **NAME OF THE NGO/ASSOCIATION**

NGO\_BOGOU



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# RESTORATION AND INTEGRATED MANAGEMENT OF THE AUSTRALIAN PINE BELT OF THE NORTHERN COAST OF SENEGAL

## FINANCIAL AND TECHNICAL PARTNERS

Association of Market Gardening Unions of Niayes (AMGUN), Forestry Department, SOS Sahel International Senegal-CILSS/FFEM

## COST AND FUNDING

Amount budgeted for the project :

229 071 843 Fcfa / 349 218 EURO

- CILSS/FEM : 32 961 770 FCFA / 50 250 EURO
- SOS Sahel International Sénégal : 50 803 770 FCFA / 77 450 EURO
- AUMN : 22 279 400 FCFA / 33 965 EURO
- Foundation ensemble : 112 988 639 FCFA / 172 250 EURO

## KEYWORDS

Restoration of soils and integrated management of the Australian pine belt

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

In Senegal, the existence of a massive plantation of the Australian pine "*Casuarina equisetifolia*" along the northern coast called "Australian pine belt", constitutes the main condition of survival of the population of the eco-geographical area of Niayes.

In fact, the establishment of this belt along the northern coastal area had enabled the settlement of 150,000 persons, the development of large scale economic activities (market gardening) and urbanisation.

Established by the government of Senegal through its forestry department in the 70s with the support of development partners such as CRDI and USAID and the contribution of surrounding populations, the Australian pine belt stretches over 182 km from Dakar to Saint Louis with 200m to 500m breadth. After about 50 years of existence, the belt has attained, today, its ageing phase and the end of its life cycle, which poses the problem of its renewal and exploitation. The main constraints in the area can be summarised as follow:

- Sand dunes mobility and silting of market gardening basins, being the only area of production in the Niayes region ;
- Threat of extinction of the Australian pine belt because of its advanced ageing condition and difficulties encountered in the correct implementation of the project;
- Over exploitation of ground water and pollution threat (irrational use of water and pesticides).

## AREA OF INTERVENTION

The project site is situated at an equal distance between Dakar and Saint Louis; it stretches over 89 km and covers the following localities:



- Mboro (in the south-west, of the Thiès region)
- Lompoul / Mer (in the central part of the Louga region)
- Thieppe (in the mid-north of the Louga region)
- Sag Sayéro (in the nord of the Louga region).

## ACTIONS TAKEN

- Renewal of the Australian pine belt,
- Dune fixation,
- Restoration of soil,
- Capacity building.





## END RESULTS

- 6 equipped plants' nurseries were built;
- 200 hectares of land renewed in the Australian pine belt with 300,000 trees planted;
- 174 compost pits constructed;
- 746 producers received technical trainings;
- 757 teaching aids/media were developed;
- 9.5 hectares of dunes were fixed;
- 30,000,000 FCFA profit were made from the sale of wood obtained from the renewal operation of the Australian pine belt.

## CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- The management method of the Australian pine belt can be a capitalisation factor for other forests (inclusion of the entrustment of project supervision to target groups involved in the rehabilitation plan of the belt);
- The duration of the project did not allow for a good assessment of the environmental effects;
- The volume of funding did not enable to take into account some structures.



## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- The renewal of the belt (4 out of 18 unions were trained);
- The reforestation of bare lands or fixation of sand dunes;
- Pollution threats to water table due to the use of pesticides

## NAME OF THE NGO/ASSOCIATION

SOS SAHEL INTERNATIONAL SENEGAL / Association of Market Gardening Unions of Niayes (AMGUN)



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## REGENERATION AND PROTECTION OF NATURAL RESOURCES AND ENHANCEMENT OF LOCAL PRODUCTS IN THE DIOULOLOU DISTRICT

### TECHNICAL AND FINANCIAL PARTNERS

NGO COSPE (Cooperation for the development of Emerging Nations), IREMLCD/CILSS, APAD (Planters Association of the Diouloulou District), Local Department of Water and Forest.

### COST AND FUNDING

TOTAL COST OF PROJECT :  
138 631 264 FCFA / 211 342,00 Euros

- CONTRIBUTION OF CILSS / IREMLCD :  
63 931 537 FCFA / 97 463,00 Euros
- COSPE : 26 158 909 FCFA / 39 879,00 Euros
- CONTRIBUTION OF THE POPULATION:  
48 540 818 FCFA / 74 000 Euros

### KEYWORDS

Community orchard, Reforestation, Mangrove, Salinisation/acidification, Coastal erosion, Bush fire, Bee-keeping, Market gardening, Fruits' processing.

### LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

Soil degradation has become a major constraint to an optimal development of land. This phenomenon is due to: the salinity/acidification of soils of shallows and belong, to infertility caused by repeated bush fire, to surface runoff erosion of plateaux and terrace, to silting of rice fields, regression of coastal banks, marine erosion accompanied in some areas by silting phenomena, wild exploitation of sand and gravels' quarries, which causes excavation and accentuates deforestation of new areas for farming purpose (mountain rice), illegal exploitation (carbonisation, felling of trees) accentuated by unstable social situation and the porousness of borders resulting into systematic deforestation especially of the northern part of the region, aggravated by the situation of insecurity, which constitutes a big obstacle to the rational management of forest resources in the region.

The mangrove, palm grove and borassus stand form part of the woody vegetation of the region but they are regressing in area and qualitatively depreciating (from the point of view of floristic composition of the technological qualities of wood and economic value) as a result of the various pressures exercise on them (illegal exploitation, dry episodes, bush fire).

### AREA OF INTERVENTION

Diouloulou District,  
Department of Bignona, Ziguinchor Region, Senegal



### ACTIONS TAKEN

Creation of plant nurseries, reforestation, construction of modern beehives, sensitisation on natural resources management, conservation of the environment, harmonisation of farming and forest operations, production of information :material, creation and operation of a fruits processing unit, training in fruit processing, creation of a honey production unit, rehabilitation of market gardening areas for the benefit of women.

### END RESULTS

- 2 plants' nurseries,
- 16,000 seedlings produced in nurseries,
- 22ha of land reforested with various forest species,
- 29ha of mangroves restored (70,000 mangrove seedlings planted through propagules),
- about 5,276 young trees protected by ANR,
- 300 improved beehives (kenyane type) and fixed in the areas concerned by the environmental restoration activities,
- 58 bee-keepers were trained,
- Sensitisation of the population through theatre forum methodology/discussion (6 sensitisation sessions were held),



- 40 information sign-boards were produced and located in villages,
- A fruit processing unit was set up,
- A fruit drying unit was put in place,
- A honey production unit was created,
- One extractor and a cashew nuts drying oven were put in place,
- 6 small processing units were set up in the village for the production of palm oil and lemon juice,
- One store was constructed,
- 5 market gardens were rehabilitated.

### CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT

- The reforestation activity was full of lessons in this very ecologically favourable area, rich in biodiversity and where the cultivation of forest species is low (plantation of local species with high economic value: baobab, ditah and madd);
- The itinerant show (theatre forum) was a very effective tool for sensitisation (increased awareness, behavioural change and development of new attitudes of respect and protection of natural resource);
- The promotion and enhancement of forest non-woody products enable to lay a sustainable foundation for a development and protection strategy of natural resources at the local level;
- The environmental commitment of APAD (extension of its area of intervention and an effective taking into account of the environmental aspect) is a very important point in the APAD's programme either for the commercialisation activity of mangoes, which is already in place or for the processing activity of forest non-woody products;
- The existence of an internal financing mechanism (commission generated from the commercialisation of citrus fruits) is a favourable factor for sustainability. About 2,000,000 FCFA was allocated for the protection of the environment for the year 2009.

### POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

It is important to support the Association in order to obtain certification for the different products meant for local, regional and international markets. APAD must undertake to obtain the FRA authorisation for the commercialisation of food products in Senegal. This should be done with the technical support of ITA of Dakar.

### NAME OF THE NGO/ASSOCIATION

NGO COSPE



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Capitalisation of the experiences RIGE/DC  
Catalogue of Projects





# SUPPORT PROGRAMME FOR DESERTIFICATION CONTROL (SPFDC)

## TECHNICAL AND FINANCIAL PARTNERS

GREEN SENEGAL AND IREMLCD/CILSS

## COST AND FUNDING

Total cost : (phase 1 and 2) 126 025 151 FCFA that is (192 124 euros)

- CILSS's contribution: 54 252 447 FCFA that is (82 739 euros)
- NGO's contributions: 22 140 000 FCFA that is (33 752 euros)
- FCD's contributions: 49 612 400 FCFA that is (75 633 euros)

## KEY WORDS

Capacity building, natural resources management, hennas production, restricted areas and land rehabilitation, composting, food security, impact.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The area of intervention of the project is the peanut transition basin characterised by an extensive monoculture of peanut. The area is exposed to unfavourable climatic conditions and a heavy demographic pressure, which has led to serious degradation of natural resources, especially the depopulation of forest highlands. The socio-economic conditions worsened resulting into pauperisation and rural-urban migration.

## ACTIONS TAKEN

The actions that were taken concern food security and natural resources management, building of organisational and technical capacity of producers, information and communication and the creation of a computerised monitoring and evaluation system. The operation framework is based on a decentralised management of resources involving the participation of local stakeholders especially local policy makers.

The food security and natural resources management actions are centred on the prevention of land degradation through restricted areas and land rehabilitation, reforestation, improvement of soil fertility through composting and production of seeds. Also, strategies for the improvement of producers' incomes were developed through the production of henna, fruit-trees farming, market gardening and loan.

## AREA OF INTERVENTION

The rural communities of Ndiéyène Sirakh, Ngoundiane (Thiès region), Ngoye and Ndangalma (Diourbel region) located in the Mid-West of the peanut basin of Senegal.



## END RESULTS

The results obtained in the field of natural resources management involve the reforestation of 74ha of land, the production of 60,591 nursery plants, tree-census taking and management of natural regeneration of local species with 2,500 suckers of *Faidherbia albida* and other marked species. Areas that were exposed to serious water erosion were rehabilitated by the construction of stone bunds of about 2,000 linear metres. The agro-forestry activities were strengthened by the construction of live fences around farm lands. As a result, 950 linear metres of live fences were built.

Concerning agricultural production, a seed reproduction programme was developed. The quantity of seeds produced and areas cultivated based on crops are:

- 533 kg of Suna 3 millet of short harvesting cycle, which enabled the cultivation of 143 ha by 552 producers ;
- 1105 kg of beans distributed to 693 producers and sown on 234.5 ha of farm lands.

This strategy of agricultural yield improvement per hectare was supported by composting activities with the creation of 210 compost pits. The combination of the factors of production in areas rehabilitated with stone bunds had allowed for the increase of the Suna 3 millet yields per hectare by more than a ton contrary to non-rehabilitated farm lands where yields don't exceed 800 kg/ha.



In order to promote the participation of the various social categories in the activities, a fund for the support of natural resources management was created. The different cycles of credit provided had increased the credit portfolio to 3,440,000 Fcfa for 420 beneficiaries including 58% of women and 42% of men.

Natural resources management is a State jurisdiction transferred to local communities; therefore, in order to ensure a better understanding of texts related to this issue, the project had organised 15 radio programmes to inform and sensitise a maximum of producers.

### **CAPITALISATION FACTORS AND LESSONS DRAWN FROM THE PROJECT**

The capitalisation studies carried out have shown that the stone bund technology is very effective in the rehabilitation of degraded agro-forestry lands. Important lessons were drawn from the rehabilitation process of those degraded lands with the introduction of agricultural crops that are suitable for each aspect. The types of crops were also based on social category, women or men.

Climatic changes had disrupted production systems in the area. The CILSS's project, in initiating the development of market gardening and the production of henna, had created new sources of incomes for families and especially for women and youths. Consequently, a return of youths to rural areas has been noticed in the areas of intervention.

Besides, local facilitators, apart from their role in the building of organisational and technical capacity of producers, have contributed to the development of social cohesion among project beneficiary communities and fostering of social and family relationships.



### **POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS**

- Type of partnership between local policy makers and people for a better management of natural resources (NRM);
- Environmental communication;
- Renewal of agricultural equipments;
- Assisted natural regeneration on collective lands or land management;
- Rehabilitation process and enhancement of the use of stone bunds with cross utilisation of stone blocks;
- Striga hermontica proliferation control (knowing the causes and effective methods of controlling its proliferation);
- Improvement of the henna production sector;
- Improvement in water accessibility for domestic and agricultural needs.

### **NAME OF THE NGO/ASSOCIATION**

GREEN SENEGAL



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# ENHANCEMENT OF FOREST NON-WOODY BY-PRODUCTS IN THE MADIAGO DISTRICT, CHAD

## TECHNICAL AND FINANCIAL PARTNERS

IREM/LCD/CILSS, NGO ACRA, beneficiary community

## COST AND FUNDING

**Phase 1 (CF N° 22/ FFEM/IREM LCD/CILSS) :**

TOTAL COST: 115 534 Euros ,the breakdown is as follow:

- IREMLCD / CILSS : 82 414 Euros
- CONTRIBUTION OF THE NGO /ACRA : 25 020 Euros
- CONTRIBUTUION OF BENEFICIARIES: 8 100 Euros

**Phase 2 (CF N° 36/ FFEM/IREM LCD/CILSS) :**

TOTAL COST: 129 683Euros ,the breakdown is as follow:

- IRM LCD / CILSS: 97 500 Euros
- CONTRIBUTION OF THE NGO/ ACRA : 25 813 Euros
- CONTRIBUTUION OF BENEFICIARIES : 7 280 Euros

## KEYWORD

Enhancement, Participation, Rational Management, Neem, Poverty reduction, Organisation, Training, Commercialisation.

## LOCAL CONSTRAINTS CONCERNING DESERTIFICATION/NRM

The agricultural production of Tchad is characterised by low yields and low productivity of labour. The yields of most of the cultivated farm crops are low considering the agricultural yields in countries with similar agro-ecological conditions (ECOSIT 1, 1995). Furthermore, the growth rate is continuously being affected year in year out by external factors such as the world market price and rainfall.

It has generally been observed that the natural environment in the Chadian sahelian belt is deteriorating at an alarming rate. In spite of the various measures adopted by appropriate authorities and supported by the International community, "minerals" exploitation is continuously being carried out and existing natural resources are not renewed either. This is particularly true of the area of intervention where ecological conditions have drastically deteriorated over the years.

The immediate effects are noticeable on the material comfort (general depletion of resources) of poor people without substantial means. This state of poverty engenders new degradation, which in turn, worsens the state of destitution and results into population migration with telling effects on receiving regions. These phenomena contribute to general impoverishment of the population and further increase pressure on natural resources. This is often responsible for social tension among the different categories of the population.

## AREA OF INTERVENTION

MADIAGO DISTRICT



## ACTIONS TAKEN

Training in management and accounting, agro-forestry, plants production and reforestation, processing of neem grains into oil, soap and pomade, peasant surveillance. Community reforestation, promotion of energy sources (improved fire-pot), support in the commercialisation of by-products and equipping beneficiaries with processing equipments of by-products of Neem.





## END RESULTS

- 27ha of land reforested,
- 2800m of live fences were planted,
- 35 Environmental aids were trained and equipped (bicycles, torch lights, uniforms, etc.),
- 3 inter villages management committees were created,
- 2 joint committees composed of sedentary producers and nomadic livestock breeders/transhumant were also created,
- 7 permanent plants nursery sites,
- 12 processing groups of by-products of Neem,
- Construction of 5 stores and 5 sheds,
- Equipment of 10 producers' groups in the field of processing,
- 702 litres of Neem oil and 5,522 pieces of soap produced in three (3) years. The total incomes amount to about 2,155,925 FCFA,
- 700 of the Centrafrican type of improved fire-pots were produced.



## CAPITALISATION FACTORS

- Supervision of trainings organised for target groups,
- Improvement in the living standard of beneficiaries,
- High demand for by-products of Neem,
- Availability of sales outlets in the capital,
- Enhancement of the Neem tree by the population,
- Working capital to launch the production and sale of by-products of Neem.



## LESSONS DRAWN FROM THE PROJECT

- Awareness on the virtue of Neem,
- Mobilisation of beneficiaries in the Neem sector,
- Research actions on the quality of soap,
- Contracts award among groups operating in the Neem sector,
- Discussion workshop between producers and sellers of by-products of Neem.

## POINTS REQUIRING FURTHER CONSIDERATION OR PENDING QUESTIONS

- Diversification of by-products of Neem,
- Extension of the market,
- Packaging and adequate presentation.

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