



**WORKSHOP ON FORESTRY, RANGELANDS AND
CLIMATE CHANGE ADAPTATION IN SOUTHERN AFRICA**

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I- INTRODUCTION

Madagascar is a Large island located in the West Southern part of the Indian Ocean, in the South Eastern of Africa, between latitude 11°57' South - 25°35' and longitude 43°14' -50°27 ' East. It extends on an area from 590,000 km² and has 6,603 km of coasts.

Madagascar has a tropical climate with some variations within regions: The annual temperature varies between 23 to 27°C and precipitations are different from East (hot and wet) to the West and South-west (semi-arid and hot) of 3,700 mm to 400 mm. The cyclonic period and the large floods is between December and April. Each year, ten tropical depressions pass in the area of Madagascar from which 3 can reach the stage of cyclone tropical and striking the Large Island.

The Madagascar forests contain high rate of endemic species and occupy 12,291,052 Ha including the degraded forests. This space corresponds to 18.5 % of total area of Madagascar (IEFN, 2000). Great spaces 98.2% of this area is composed by natural and degraded forests, new forestations are represented by 1.8%. The Eastern slope is occupied by a tropical rain forest, the Western slope by the dry forests while the central highlands by the mountain forests and savannas. The south and South-west parts are constituted by the fields of the thorny bush and the extraordinary didieracea with endemic plants. These forests resources are constantly threatened by the environmental degradation. The forests are the great areas of strong entropic pressures.

Regarding the socio-economic, Madagascar count currently 22 million inhabitant of which more than 73% live in the rural area. The economy of the country is based on Agriculture, the Livestock, Fishing, Textile Industry, the Mining extraction and ecological tourism.

The major part of the Malagasy population uses the forest resources like the single source of the energy in its everyday life.

The major vulnerability of Madagascar due to its poverty is characterized by the following factors (SNC):

- Weakness for standard of living,
- High rate of illiteracies
- High rate of birth
- Insufficiency of control of the natural resources
- High rate of prevalence of the infectious diseases,
- Heaviness of administrative function,
- Weakness of the intervention of the Private sector in the socio-economic and industrial system.

Concerning the littoral zone (Western and Southern North and Western Coasts), the speed of erosion of these coast lines are estimated between 3 to 4 meters per annum. Large part of some cities will be under water for the coming years.

According to the Meteorology Department, the average temperatures of the air of the Southern part of Madagascar are increased about 21.5°C to 22.4°C while in the Northern half, they increase 23.3°C to 23.5°C since about thirty years. According to the prediction, the East coast, the North and part of the North western areas and Central high land would know reduction of precipitations from 5% to 30% compared to the period of 1961-1990, the remainder of the country, would see the increase which would reach 20%.

The warming will generate the increase of the evaporation and transpiration, the demand for water and the modification of the hydrological regime of the lakes and the rivers.

The variation of precipitations will equally modify the distribution of water, the agricultural calendar, and the agricultural productions.

These trends generate the modification of the vegetal coverage in a long-term (certain species could disappear and others could appear). Certain animal species could disappear (their habitats has been destroyed) while other species would come to replace them.

II-NATIONAL PRIORITY ACTIONS FOR ADDRESSING CLIMATE CHANGE IN FORESTRY

The adaptation strategy of the Forest/biodiversity sector is summarized in following actions:

- To maintain the cover forest
- To delimit the zones of conservation of the biodiversity
- To encourage the use of other sources of Energies (part from fuel wood)
- To improve the living conditions of population around the forest (incentives)
- To reinforce the application of the legislative texts on the conservation of the biodiversity
- To improve the technical capacity building of forest management
- to reinforce the monitoring and the protection of the forests and to give some responsibilities to rural populations.

III-BARRIERS AND CONSTRAINTS

The barriers and constraints to the adaptation to the climate change are numerous. They may be cultural, socio-economic, technical, administrative and political issues. Among these, one can highlight:

- the insufficiency of motivation of the Peasants to adopt the new techniques,
- the weight of the traditions and habits in the life of the population
- low intellectual level of the majority of the population in rural area
- inexistence of the database for the follow-up of the climate change impacts,
- the insufficiency of investment in favor of the adaptation to the climatic change.

IV-ASSITANCE REQUIRED FOR CLIMATE CHANGE ACTIONS

Generally, Madagascar, like the other developing countries, needs to enhance the technical and financial capacity in order to face the several impact of climatic change. These needs will be required so that the country can solve these obstacles and difficulties quoted above. These supports should last because the struggle against the climate change is considered as a long-term fight.

V-ACTIVITES AND PROJECTS RELATED TO FORESTRY

- Project of forestation of the Cashew trees (Clean Mechanism of Development)
- Project of forestation with Paulownia spice (Clean Mechanism of Development)
- Project for the extension of the Protected Areas in Madagascar to 6,000,000 hectares after Durban International Conference on 2003
- Elaboration of RPP (Redd+)
- Elaboration of National Action Plan on Climate Change (including the Reducing Emissions from Deforestation and Forest Degradation: Redd+) like in Makira Natural Park around 380,000 hectares for example, for sailing at least 35 million metric tons of CO². A new project have been presented CIRAD and World Bank there is two weeks ago about Redd+ subject in Zahamena Natural Forest and will be financed by GEF.

VI-FINANCIAL OPPORTUNITIES

Some Projects according international support are mentioned below:

- The Swiss Government, through Association Inter Madagascar cooperation brought its collaboration while contributing in the implementation of the Pilot Project Redd - Foreca with the GIZ (German Integrated Program for Development) in the various areas.
- The World Bank through the project Track II : " systematic integration of the reduction of the catastrophes for the reduction of the poverty " financed by the fund for diminution of catastrophes risks or GFDDR
- The Adaptation Funds related to United Nations Framework for Climate Change Convention support the Project on Resilience of rice cultivation around the Alaotra lake.
- Least Development Countries Funds related to United Nations Framework for Climate Change Convention (UNFCCC) also brings its financial support for the Project on the Management of the coastal zones.

VII-RECOMMENDATIONS AND CONCLUSIONS

The Forestry, in developing country like in Africa, is a sector which does not profit easily from the international supports or the advantages within international framework for climate change. This situation is already proved during the first commitment period of the Kyoto Protocol (the Clean Mechanism of Development).

To fight effectively against the adverse impacts due to the climate changes, it is necessary urgent to support technically and financially in a constant way the forestry sector in the African countries because the forest is the water tank which irrigates their economies based in particularly on Agriculture.

The forestation on a large scale must be one of the priority projects in Madagascar and this orientation have been started there is two years ago in the eastern, the high level of natural forest and biodiversity.