



The Study on Community-Based Integrated Watershed Management in Laclo and Comoro River Basins in the Democratic Republic of Timor-Leste



Diak Lae!!

This is the second issue of the official newsletter from the JICA Study for Community-Based Integrated Watershed Management in Laclo and Comoro River Basins. This issue is aimed at briefing the draft watershed management plan prepared in March 2007.

Causes of Watershed Degradation

After a series of literature reviews and field observations, the Study identified the following causes of watershed degradation.

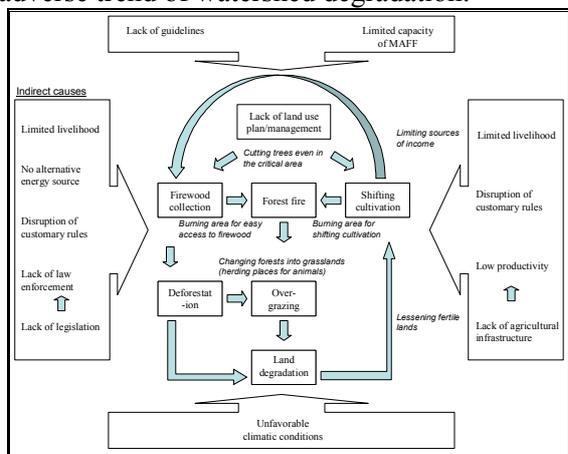
Direct causes

1. Intensive firewood collection;
2. Frequent forest fire;
3. Over-grazing;
4. Unfavorable climatic conditions;
5. Shifting cultivation; and
6. Poor land management and planning.

Indirect (Root) causes

1. Limited livelihoods;
2. No alternative energy source;
3. Lack of law enforcement;
4. Lack of legislation; and
5. Limited capacity of MAFF

The Study found that the above-listed causes are inter-related with one another. Hence, holistic approach is requisite for reversing the current adverse trend of watershed degradation.



Overall Picture of Forest Degradation

Basic Concepts of the Watershed Management Plan

Based on the assessment of the current situation of the target watersheds, the Study set the goal and basic approaches of the draft watershed management plan, to wit:

Goal:

to protect and improve watershed environment of the target watersheds

Objective:

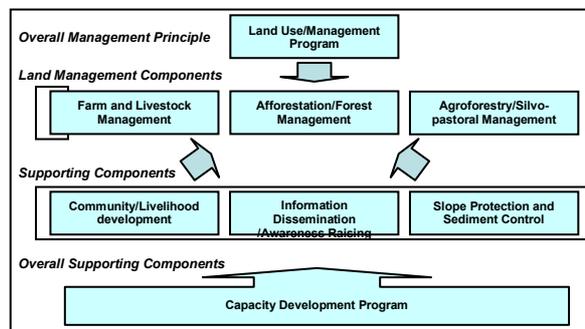
to attain sustainable and integrated watershed management by balancing proper land and forest management with poverty alleviation in the target watersheds

Basic Approaches:

1. Maintaining the functions of the watersheds
2. Improving livelihoods of local people
3. Promoting community-based natural resource management for Timor-Leste
4. Establishing an institutional framework model

Programs proposed in the Draft Watershed Management Plan

The draft watershed management plan was composed of eight (8) management/supporting programs.



Structure of the Watershed Management Plan

(1) Land Use / Management Program

The Land Use/Management Program gives the principles in designing land use in the watersheds. The main aim of the program is "to promote proper land use to maintain and improve the functions of watershed while securing livelihoods of local communities." To this end, the Study classified the watersheds into the following four (4) zones in accordance with the respective environmental functions and identified recommendable land use and management practices for each zone.

Protection zone (P-Zone)

Areas that shall be managed as protected forests

Special management zone (SM-Zone):

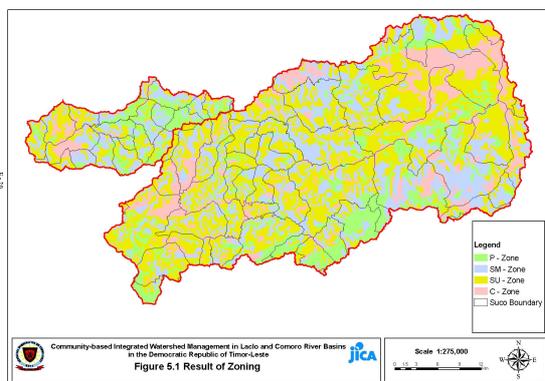
Areas that can be used for production purposes but should be managed as forests or orchards

Sustainable use zone (SU-Zone):

Areas that can be used for crop production with application of soil conservation measures

Production/Community zone (C-Zone):

Areas that can be used for economic and social development purposes by local communities with a few restrictions



Results of Zoning

Under the Land Use and Management Program, the Participatory Land Use Planning (PLUP) Sub-program is also proposed to put the concepts of zoning into practice in the field. The aim of the PLUP Sub-program is to assist local villages/communities in the preparation of a future land use plan of the respective localities in accordance with the concepts used for zoning.

(2) Reforestation/Forest Management Program

This program focuses on improving existing forests resources and rehabilitating forest covers in the watersheds. Under the program, the following sub-programs are proposed.

- a. Timber Plantation Sub-program
- b. Protection Zone Reforestation Sub-program
- c. Tree Planting Promotion Sub-program
- d. Forest Management Planning Sub-program
- e. Forest Protection Sub-program
- f. Forest Improvement/Management Sub-program

(3) Farm and Livestock Management Program

This program is aimed to:

- a. improve livelihoods of local people through either increasing farm productivity or improving food quality; and
- b. minimize risks of malnutrition and/or diseases of animals by improving the animal raising practices.

A total of five (5) sub-programs are proposed under this program, to wit:

- a. Community-based Seed Extension Sub-program;
- b. Improved Farming Technology Training Sub-program;
- c. Integrated Livestock-Paddy System Sub-program;
- d. Home Garden Sub-program; and
- e. Feed Preservation Sub-program.

(4) Agroforestry and Silvo-pastoral Management Program

The main focus of the program is put on sustainable management of upland/sloping lands in the watersheds. Specifically, the program aims to:

- a. introduce sloping agricultural land management practices so that local households can continuously use the same upland farms while maintaining soil fertility; and
- b. introduce pasture management practices suitable for sloping lands in the watersheds.

A total of five (5) sub-programs are proposed under this program, to wit:

- a. Sustainable Upland Farming Promotion Sub-program;

- b. Coffee Plantation Rehabilitation Sub-program;
- c. Marketable Tree/Industrial Crops Promotion Sub-program;
- d. Grazing Control with Protein Banks Program; and
- e. Wasted Pasture Rehabilitation Program.



(5) Slope Protection and Sediment Control Program

The principal objective of the Slope Protection and Sediment Control Program is to prevent the progress of landslides/slope failures and to control the sediment flow in the upper part of the watersheds so as to minimize the inflow of sediment in the mainstreams of the Laclo and Comoro rivers. The sub-programs proposed are:

- a. Slope Protection Works along Roads and Hillsides Sub-program;
- b. Check dams for Sediment Flow Control Sub-program; and
- c. Riverbank Protection Works Sub-program.

(6) Community Development/Livelihood Development Program

The program primarily focuses on the improvement and development of livelihoods of local communities in the watersheds while maintaining natural environment/resources in the respective localities. The specific objectives of the program are to:

- a. improve the quality of life and sustain benefit derived from natural resources through the promotion of alternative rural energy technologies; and
- b. diversify sources of income through the provision of income generating opportunities.

In line with the objectives mentioned above, a) Alternative Rural Energy Development Sub-program and b) Income Generation/Cost-saving Sub-program are proposed under the program.

(7) Information Dissemination and Raising Awareness Program

The program envisages increasing the level of environmental awareness and understanding of the functions of watershed among local communities in the watershed as well as those who live in Dili and Manatuto through the provision of information. In the circumstances where there is no legal base to control illegal activities at present, the enhancement of public awareness is the sole means to motivate local communities to mend or adjust their manners of using/managing resources. Under the program, there are:

- a. Information Dissemination Sub-program;
- b. Public Awareness Campaign Sub-program;
- c. Environmental Education Sub-program; and
- d. Technical Handbook / Guidebook Development Sub-program.

(8) Capacity Development Program

The program is an essential program for the watershed management plan, since the success of the plan ultimately depends on how the implementing agencies fulfill the respective responsibilities. Hence, the main objective of the program is to lay the foundation of the capacities of the stakeholders in the watershed-related sectors so that they can perform their duties and roles necessary for the implementation of the watershed management plan. Four (4) sub-programs are proposed to strengthen the capacity of the stakeholders.

- a. Watershed-related Institutional Development Sub-program;
- b. Capacity Development Sub-program for Government Staff;
- c. Capacity Development Sub-program for Local NGOs and Facilitators; and
- d. Mobility/Communication System Improvement Sub-program.

Implementation Mechanism

(1) Concepts

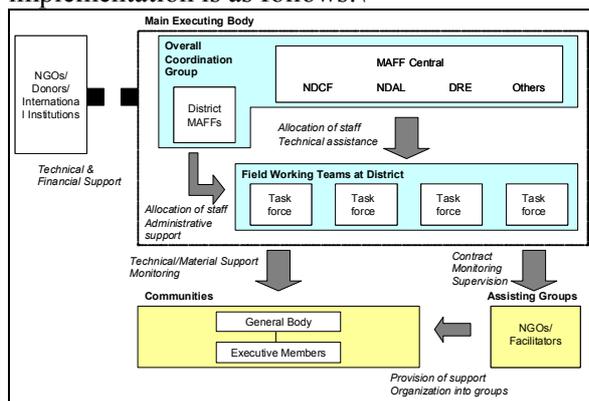
Given the current context of Timor-Leste, where necessary legislative set-ups are lacking and the capacity of MAFF are still very weak, it would not be easy for MAFF to implement the programs/sub-programs proposed in the watershed management plan. Therefore, the Study proposes that this management plan be implemented in “phased”, “participatory” and “flexible” manners, so that MAFF and other stakeholders (communities, NGOs, and other governmental organizations) could maximize their own resources and capacities to implement the management plan by their respective ways.

(2) Institutional Framework for Implementation

Since MAFF or NDCF unlikely has experience in the implementation of “community-based natural resource management project”, the Study took the following aspects into account in conceptualization of a proposed institutional framework.

- a. Involvement of communities in project implementation;
- b. Development of a core/implementing unit in MAFF; and
- c. Involvement of external resources in project implementation as a main player.

The proposed institutional framework for implementation is as follows:



Proposed Institutional Framework

(2) Identification of Priority Sub-programs

As stated above, a total of 30 sub-programs were proposed in the draft watershed management plan. The Study further evaluated the 30 sub-programs to identify the priority sub-programs.

- a. Participatory Land Use Planning
- b. Tree Planting Promotion

- c. Forest Management Planning
- d. Community-based Seed Extension
- e. Sustainable Upland Farming Promotion
- f. Coffee Plantation Rehabilitation
- g. Grazing Control with Protein Bank
- h. Alternative Rural Energy Development
- i. Public Awareness Campaign

(3) Implementation Methods

Some of the sub-programs likely produce a synergy when they are implemented with other sub-programs. Hence, the Study recommends two (2) modes of implementation, i) single more and compound/package mode. The former is to implement the sub-program separately, while the latter is to implement several sub-program in a compound manner. The following are some of the possible and recommendable combinations.

Main Sub-program	Supporting/Combined Sub-programs
Forest Management Planning	Participatory land use planning Forest Protection Alternative rural energy development Capacity development for government staff
Sustainable Upland Farming	Participatory land use planning Tree planting promotion Community-based seed extension Capacity development for government staff
Community-based seed extension	Improved Farming Technologies Training Home gardening Sustainable upland farming promotion Capacity development for government staff
Grazing control with protein banks	Participatory land use planning Feed preservation Waste Pasture Rehabilitation Sub-program Capacity development for government staff
Alternative rural energy development	Tree planting promotion Income generation/cost-saving Public awareness campaign

From Now On...

The watershed management plan outlined above is still in draft. This will be further revised and refined in the course of the Study, especially through the implementation of the pilot project, which will begin in January 2008. Hence, we always welcome your valuable comments and suggestions.

For more information or any valuable comments, please contact us at:

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