



REPUBLIC OF INDONESIA

NATIONAL REPORT

COMBATING LAND DEGRADATION IN INDONESIA

*Progress report on the implementation of the United Nations
Convention to Combat Desertification (CCD)*

SUMMARY

Several laws, guidelines, and manuals regulate the forest and land resources management including the implementation of forest and rehabilitation are newly released and being prepared. Those are MPR (People Consultative Assembly), Presidential, Ministerial, and Directorate General decrees.

Communication and coordination forum(s) will be formed at national (policy), provincial (coordination), and district/city levels (implementation) to implement the Convention. At the village level, community/farmers group will be the principal actors. To be more actively participate in the Convention, Indonesian experts from different institutions and various backgrounds are willing to contribute their expertise and experiences in several UNCCD forum including Science and Technology Committee.

Linkages and synergies with other environmental convention are indicated by forest rehabilitation and plantation development, which is one of the current five Indonesian forest priority programmes. Promotion of indigenous species in plantation development is closely related to both UNCBD and UNFCCC and is also included in the implementation programmes of UNCCD.

Strategies and activities that have been undertaken in order to accommodate community participation in combating land degradation in Indonesia are the establishment of community communication forum (*i.e.*

carrying out village discussion groups), empowerment of local institutions (*i.e.* farmer's group), development of human resources (*i.e.* motivator and environmental facilitator's training), empowerment of optional economic source (*i.e.* small business management and post harvest processing' training), and environmental awareness training.

Conservation techniques developed by indigenous knowledge and modern technology are simultaneously employed to accelerate forest and land rehabilitation programmes such as upland/dry land management project in the form of action plan in West Nusa Tenggara Province.

- I. Introduction
- II. The institutional measures taken to implement the Convention;
- III. The development of the participatory process
- IV. The progress of the consultative process
- V. The measures taken or planned within the framework of the national action programmes.

Appendices

PREFACE

The Government of Indonesia has ratified the UNCCD by Presidential Decree No. 135/1998. By ratifying the Convention Indonesia will do her best to fulfill obligation as party of the Convention including submitting a national report.

This report is prepared to fulfill one of party's obligations in the convention for providing information on the progress of CCD implementation in Indonesia. The report describes an activities progress of UNCCD in Indonesia mainly derived from the result of the Workshop on The Assessment of CCD Implementation conducted in Bogor at 29-30 April 2002. Participation of the experts, scientists, practitioners from government and private sectors and NGO have enriched the substance of the report. Results obtained through implementation of land degradation control for the last decade is presented in the report as the main substance. Project proposals to be implemented in dry province areas have been submitted by various stakeholders. List of the project proposals together with list of experts and scientists are enclosed in appendices.

The format of this report followed the headings of decision 11/COP.1, paragraph 10, whereas it is expected to provide updates with respect to all headings. It is sincerely hope that this report is creating a concerted effort on overcoming constrains and enhancing the achievement of CCD objectives. The secretariat of the

National Focal Point for the UNCCD under the Ministry of Forestry, Indonesia welcomes constructive inputs and suggestions for the improvement of the report presentation during the evaluation process.

Jakarta, April 2002
Indonesia National Focal Point of the UNCCD,
Ministry of Forestry.

This report is basically formulated through workshop, which is obviously pictured the activities carried out and project proposed by all stakeholders showed that the strategies and priorities established in NAP are critical and need to be applied. The strategies were established within the framework of sustainable development plan and policies by accommodating community participation and traditional knowledge and wisdom. Local communities have valuable experiences and a special understanding of their own environment.

Local communities were reported active in designing and carrying out the projects, therefore programmes is sufficiently flexible to accommodate new initiative and local adaptations as circumstances change. In this case technical experts, researchers, NGO, and voluntary associations are needed for their invaluable skills and expertise. It is hope after project is completed community willing to involve in evaluating project outcome and deciding on the next step.

I. THE INSTITUTIONAL MEASURES TAKEN TO IMPLEMENT THE CONVENTION

2.1. Legislative

The following are newly released regulations on forest and land resources issued by Government of Indonesia:

- Decree of MPR (People's Consultative Assembly) No IX/2001 concerning Agrarian Reform and Natural Resource Management.
- Decree of Minister of Forestry No. 020/2001 concerning Guidelines, Standard and Criteria of Forest and Land Rehabilitation.
- Decree of Minister of Forestry No. 052/2001 concerning Guidelines on Implementation of Watershed Management.

The following are regulations on forest and land resources being prepared and will be released shortly by GOI:

- Draft of Government Regulation on Forest Landuse, Planning, and Utilization
- Draft of Government Regulation on Reforestation Fund
- Draft of Soil and Water Conservation Act
- Draft of Natural Resource Management Act
- Draft of Water Resources Act
- Draft of Forest Rehabilitation and Reclamation Regulation
- Draft of Urban Forest Regulation
- Draft of NAP of UNCCD Presidential Decree
- Draft of Master Plan on National and Provincial Forest and Land Rehabilitation (Ministerial Decree).

2.2. Organization /institution

Forest and land rehabilitation activities are implemented through two basic principles *i.e.* government (central and local) as an enabling environment, Local community as main player, local NGO as accelerator/motivator, and related experts whose provide a series of technical assistances and technologies and its development.

There are 36 Watershed Management Centres (BP DAS) assigned for planning, monitoring, evaluating, strengthening the local institution and supervising forest and land rehabilitation in Indonesia. Three of them are located in dry province areas *i.e.* Palu (Central Sulawesi), Kupang (East Nusa Tenggara), and Mataram (West Nusa Tenggara). Several NGO's, such as Indonesia Soil and Water Conservation Society (MKTI) in Jakarta, Indonesia Agricultural Meteorology Association (PERHIMPI) in Bogor, Katopasa Foundation in Palu, Abdi Insani Foundation in Mataram, have shown their significant support of the activities at the local level.

To implement the convention, communication and coordination forum(s) will be formed at national (policy), provincial (coordination), and district/city levels (implementation). At the village level, community/farmers group will be the principal actors.

At the central (national) level, a National Coordinating Body (NCB) consisting of representatives of all related bodies has been

formed. The NCB headquarters is located at the office of the Ministry of Forestry. Director of Watershed Management and Land Rehabilitation, and Director, Bureau of Foreign Cooperation and Investment have been assigned as national focal points (NFP's).

It is also important to note that the convention should be in harmony and synergy with other UN conventions, especially which are related to environment and sustainable development such as UNCBD, UNFCCC, and Ramsar Convention. It is reasonable, therefore, to form a special organization at the national level, which is legalised by law.

2.3. Human Resources/Experts

In average, every Watershed Management Centres in Indonesia (BP DAS) have 5 professionals and approximately 45 technical staffs. The professionals are skilled government officer under the Ministry of Forestry responsible in conducting forest and land rehabilitation activities. In carrying their duties out they are assisted by various background of technical staffs. When dealing with local community, local staffs are strongly backing up professional staffs especially in solving the problem from grass root.

Experts with various backgrounds in *i.e.* forestry, agriculture, land-use, socio-economic, animal husbandry, estates, climatologic, sociology, anthropology, geology, conservation, environment, and hydrology are available to support the implementation of this convention. The experts may come from different institutions such as government and non-government organization as well as universities. These experts are willing to participate and contribute their expertise through a forum such as Science and Technology commission, which could be formed later on. The commission will be in charge of providing advice and recommendation to NFP.

2.4. Linkages and synergies with other environmental convention

Focal Points for UN environmental conventions in Indonesia are in different institutions, UNFCCC in State Ministry of Environment (LH), UNCBD-UNCCD- Ramsar in Ministry of Forestry, CITES in Indonesia Institute of Science (LIPI) and Ministry of Forestry. These conventions are closely linked to each other. Therefore, to achieve a synergy among of them there is a need to establish coordination forum, which is supported by secretariat of the conventions.

Forest rehabilitation and plantation as one of the current five Indonesian forest priority programmes

are relevant to the scope of CCD, CBD and CCC. Promotion and large-scale plantation of indigenous tree species is closely related to the goal and strongly linked to both UNCBD and UNFCCC.

II. THE DEVELOPMENT OF THE PARTICIPATORY PROCESS

3.1. Participatory processes involving civil society, NGO and community- based organization.

Community participation is approached by means of Participatory Rapid Appraisal (PRA) in the framework of the environmental impact analysis (locally called AMDAL). The AMDAL includes direct participation of the community in valuing the early environmental performance, planning of environmental management, environmental monitoring, and environmental impact analysis. All of these activities are directed towards improvement of land capability and suitability.

Community participatory is also accommodated through many of Government programmes. Community Forest Programme, for instance, has been carried out for many years. The programme allows the community to extract non-timber forest products (NTFP) without encroaching the forest or doing some other forest disturbances. Another programme such as private forest programme

provide facilitation to the community to develop their-own forests stand in selecting tree species and other relevant treatments of silvicultural aspects.

This participatory process has been carried out during the formulation process of the National Action Programmes (NAP) and of the National Report.

3.2. Strategy and Activities

Based on forest and land rehabilitation inventory GOI has decided to rehabilitate 54.36 million hectares of degraded forest and land of which 11.3 million hectares area is the highest priority to be rehabilitated by involving local community. This area is consists of bare land, bush, upland, and woodland.

The following are activities that have been undertaken in order to accommodate community participation:

- Establishment of a community communication forum (*i.e.* carrying out village discussion groups).
- Empowerment of local institutions (*i.e.* farmer's group)
- Development of human resources (*i.e.* motivator and environmental facilitator's training)

- Empowerment of optional economic source (*i.e.* small business management and post harvest processing' training)
- Environmental awareness training.

IV. THE PROGRESS OF THE CONSULTATIVE PROCESS

Resource mobilization and coordination, both domestic and international, including conclusions of partnership agreements.

Financial resources to implement the convention in Indonesia are obtained from international organisation, reforestation fund, and partnership initiatives. Technical assistant extended by ICRAF, CIFOR, ASOCON, ITTO and others have contributed for the success of the rehabilitation. However, considering to the magnitudes of land degradation problem in the country more international assistant and support are urgently needed.

Coordinated national action programmes to implement UNFCCC, UNCBD, UNCCD and Ramsar Convention will be discussed with parliament and subject to approval for further promotion and socialisation the convention objectives to local authorities. This consultative process is intended to promote synergism among conventions.

V. THE MEASURES TAKEN WITHIN FRAMEWORK OF NAP

5.1. Measures for the rehabilitation of degraded land and for early warning systems for mitigating the effects of drought.

Plantation forest, community forestry, private forest, 'embung' (small reservoir) management and agroforestry development in East and West Nusa Tenggara are efforts that have been made to rehabilitate degraded land. Irrigation system development is also another effort that has been done in Palu valley, Central Sulawesi.

Measures taken to mitigate effect of drought, weather forecast is one of activities carried out by BMG (Meteorological and Geophysical Agency) and LAPAN (National Aeronautic and Space Institute).

Natural Resource Accounting is another activities undertaken by BAKOSURTANAL (National Survey and Mapping Coordinating Agency). The agency is responsible to support activities in providing related data and information on rehabilitation of degraded land and mitigation the effect of drought.

5.2. Drought and desertification monitoring and assessment

Weather forecast (daily, monthly, yearly) has been reported regularly by BMG. Ministry of Forestry in cooperation with State Ministry of Environment use the data and information to predict hot spot and drought.

Local government of West Nusa Tenggara and University of Mataram in cooperation with ACIAR (Australian Centre for International Agricultural Research) are doing activities on weather forecast for crop plantation planning.

5.3. Access by affected country Parties, particularly affected developing country Parties, to appropriate technology, knowledge and know how.

Conservation techniques developed by indigenous knowledge and modern technology is simultaneously employed to accelerate land rehabilitation programmes. The following projects are examples of the activities:

- Upland/dry land management project in cooperation between CIDA (Canadian International Development Agency) and Pusat Pengkajian Lahan Kering dan Rehabilitasi Lahan (Dry land and Land Rehabilitation Assessment Centre), Faculty of Agriculture, University of Mataram. The project is actualised in the form of action plan in Kateng village,

Pujud Sub district, Central Lombok district, West Nusa Tenggara.

- National Overview on Conservation Approach and Technology project in cooperation with Bogor Agricultural University (IPB) and ASOCON (Asia Soil Conservation Network for the Humid Tropics).

APPENDICES 1.

List of Experts and Scientists

No.	National Experts / Scientists	Fields of Expertise
1	Adi, Abrurrahman; Dr	Soil Science
2	Agus, Fachmudin; Dr. Ir.	Soil Science
3	Ahmad, Tauhid; SP	Socio Economic
4	Ambar, Supriyo; Dr. Ir.	Rural and Regional Development
5	Anwar, Syaiful; Dr. Ir. MSc.	Forest Hydrology
6	Aspartian, Ihma; Ir.	Agro-Sociology
7	Atmanto, Sudar D.; Ir. MM.Agr.	Agricultural Economic
8	Djuwansah, M.; Dr.	Geo-technology
9	Goenadi, Sunarto; Dr. Ir.	Hydrology
10	Gintings, A. Ngaloken; Dr. Ir.	Soil Conservation
11	Hardjono, Ir. M.Eng.	Soil and Water Engineering
12	Harisetijono, Ir, MSc.	Social Forestry
13	Harris Herman S, MSi.	Soil Chemical Analysis
14	Hartoyo As, Ir.	Computer Science
15	Haryadi, Drs.	Social-Institution
16	Haryanto As, Ir.	Agriculture Meteorology
17	Haryanto, Mung; Drs. MSc.	Climatologic
18	Hero, Bambang; Dr. Ir.	Forest Fire
19	Hendra, Billy; Ir. MSc.	Soil Conservation
20	Iskandar, Untung. Dr. Ir.	Forest Economic
21	Kardono, Priyadi; Dr.	Remote Sensing and GIS
22	Karyana, Apik; Ir. MSc.	Natural Resources Management

23	Kuswanto S.A.; Ir. MS.	Agriculture Economy
24	Mudida, Wayan; Ir. MSc.	Environment Science
25	Mulyono, Agus; Drs, MSc.	GIS
26	Pasaribu, Hadi S.; Dr. Ir. MSc.	Natural Resources Policy
27	Poniman, Aris; Dr.	Remote Sensing
28	Pratiwi; Dr. Ir.	Soil Science
29	Purwanto, Edi; Dr. Ir.	Hydrology
30	Rushayati, Siti Badriah; Ir. MSi.	Climatologic
31	Rusmanto, Adi; Drs. MTP	Regional Planning
32	Salim, Syafril; Drs.	Irrigation
33	Santoso, Erdy; Dr. MSc.	Pest and Disease
34	Santoso, Harry; Dr. Ir.	Rural and Regional Development
35	Santoso, Nyoto; Ir. MSi.	Mangrove Rehabilitation
36	Sarwoko, Adi	Water resources
37	Siagian, Odjak; Drs.	Soil Conservation Training
38	Sinukaban, Naik; Prof. Dr. Ir.	Soil Conservation Management
39	Siswomartono, Dwiatmo.; Ir. MSc.	Soil and Water Conservation
40	Siregar, Chairil Anwar; Dr. Ir. MSc.	Soil Chemistry
41	Soedarisman, Hoesodo; Ir.	Soil Conservation
42	Soepyan, Yacob.	Forest Management
43	Soetedjo, Prijo; Ir. MSc., PhD	Plant and Soil Science
44	Subektiyo, Wahyu; Drs. MST.	Satellite Meteorology
46	Sukadri, Doddy S.; Dr. Ir. MSc.	Forest Economic
47	Sukandi, Taulana; Dr.	Agro-forestry
48	Sumardjo; Ir.	Soil and Water Conservation
49	Sumoyono; Ir.	Forestry
50	Surata, Komang; Ir.	Silviculture & Soil Science

51	Sutadi, Ir. MSc.	Soil Conservation
52	Teguh Hardi TW, Drs.	Pest and Disease
53	T. Rameyo AD; Ir. MST	Geophysics/Meteorology
54	Wibowo, Cahyo; Ir. MScF.	Soil Conservation
55	Winarno, Paulus Agus; Dr	Climatologic
56	Widiyatmoko, Didik; Dr. MScF.	Biology
57	Yuliarsana, I Nyoman; Dr. Ir. M.Agr.	Forest Resource Economics
58	Yusan, Made; Ir.	Agro-Sociology

APPENDICES 2.

List of Project Proposals

No.	Title and background	Location
1.	<p>Prabu Hill Forest Rehabilitation</p> <p>Forest area (464 hectares) of Prabu Hill, stipulated as a protection forest in 1996, located in the southern part of central district is in degraded condition. As a Water regulator, sanctuary area, bio-diversity protection, non-timber forest product and tourist attraction Prabu Hill forest, need to be rehabilitated to recover its function. This forest rehabilitation programme should be carried out in integrated and comprehensive way.</p>	Lombok, West Nusa Tenggara.
2.	<p>Management of land degradation to increase the income of community around the buffer forest areas through agroforestry</p> <p>Rinjani mountain, about 5 million hectares in Lombok West Nusa Tenggara Province has been stated as National Park since 1990 to protect its flora, fauna and water resources. Forest destruction has happened at the forest edge due to irresponsible activities. Regulation and information programme held by governmental officer to solve the root of the problem at buffer area is not sufficient. In order to persist the damage in one hand and to increase the people's economic standard and their participation in environmental preservation in another hand a wise way should be arranged effectively. Based on the importance increasing community's income in the buffer areas and decreasing the pressure in the forest area, this project is proposed.</p>	Lombok, West Nusa Tenggara.

3.	<p>Integrated Participation Project of Dry Land culture development to increase food production and prevent land degradation.</p> <p>Dry land in West Nusa Tenggara province is approximately 2 million hectares or about 84% of total land. Lack of attention in utilizing dry land causes low productivity of land besides increasing dry land degradation and spreading critical land. Based on enormous dry land potency in West Nusa Tenggara, developing conservation farming practices is one of solution, not only to fulfill the needs of food in the future but also to solve the problem that tend to increase each year.</p>	West Nusa Tenggara.
4.	<p>Combating Land degradation by using social forestry approachment and based on community empowerment in district of Kupang East Nusa Tenggara.</p> <p>Land degradation is the major environmental problem in East Nusa Tenggara. Land degradation occurs when the environment is intrinsically vulnerable and the people lose control of their own resources. Land degradation tends to increase every year indicated by increasing in grassland and shrubs cover on forest area. This is mainly due to shifting cultivation, expanding population, wild burning practices and overgrazing of Savannah land. Some problems can be minimized, but other problems persist and will, constantly challenge the success of land degradation in the future. Among those problems socio-culture and socio-economy take a key role in combating land degradation in East Nusa Tenggara and District of Kupang particularly. Therefore, social forestry approachment based on community empowerment could be a promising implementation in combating land degradation.</p>	Kupang, East Nusa Tenggara.

5.	<p>Land Rehabilitation through improving environment (reforestation) and community strengthening in Palu Valley, Central Sulawesi Province.</p> <p>At present there are about 13.000 hectares out of 60.000 hectares of Palu Valley is said to be critical/bare land. This area is known for its lowest level of rainfall in Indonesia (519,6 mm/year) and very sloppy with about 36% area have more than 40% slope level. Most people who depend on the surrounding field live in that critical land. To retain the worsening condition of the land there had been a reforestation programme, however this programme was unsuccessful because of wrong approach and lack of community support to suppress the degradation process. A community modal approach is needed to be developed.</p>	Palu, Central Sulawesi.
6.	<p>Application on strata unit system in the development of sustainable slope land agroforestry in Sumbawa.</p> <p>Recently, new dry land are of Sumbawa, West Nusatenggara, tends to increase continuously and leads to the creation of critical land as a result of land degradation which is strongly related to the local people behavior in practicing agriculture and forestry activities.</p> <p>Land that originally allocated for grazing has been changed for agriculture crop. This change causes the livestock tend to move towards hilly and forest area and conflict between livestock owner and the farmers. The conflict emerge due to soil and crops damages by livestock that substantially lead to the lost of crops yield or production in the agriculture lands.</p> <p>In order to solve the problem it is proposed to apply Strata Unit System (SUS) consist of three-development zone: modern grazing zone, buffer zone, and core (nucleus) zone. By applying this system, land degradation and environmental, economic infrastructure, culture and institution damage will be minimized.</p>	Sumbawa, West Nusa Tenggara.

APPENDICES 3.

**DRAFT
NATIONAL ACTION PROGRAMME (NAP)
FOR COMBATING LAND DEGRADATION IN
INDONESIA
for
VALIDATION**

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I. INTRODUCTION

The Convention to Combat Desertification/Land Degradation (CCD) is implemented through a set of (focus) action programmes. These programmes are the core of the Convention at the national level. National Action Programmes (NAP) addresses the underlying causes of land degradation and drought and identify measures to prevent and rehabilitate it.

This NAP is considered as the focus of the actions, consolidation of projects and activities identified for an integrated solution in combating land degradation in Indonesia. In line with the scope of the convention focus of the programmes is directed to solve degradation of lands in the most driest provinces in Indonesia namely Nusa Tenggara Timur (NTT), Nusa Tenggara Barat (NTB) and Sulawesi Tengah (Sulteng).

Action Programme strive to bring together stakeholders at all levels (district, provincial, national and regional) in a joint effort to achieve sustainable land management. Implementation of the NAP involves all partners including politicians, government institutions, community-based organizations, local communities, NGOs, professionals organization, academy communities, private groups and associations.

The National Action Programme for combating land degradation is part of the National Development

Plan, and compatible with provincial and district development plans and strategies.

All stakeholders, from both the public and private sectors, should be committed to implement the measures mutually agreed upon listed in the NAP. Stakeholders should be willing to dedicated their efforts and resources, according to their respective capacities, for the successful implementation of the programme.

II. DEFINITIONS

The National Action Programme to combat desertification in Indonesia is measures to prevent land degradation and rehabilitate degraded land with special emphasize on dry land.

III. BASIC PRINCIPLES

A. Framework Principles

1. Sustainability

The essence and main purpose of the NAP for Combating Land Degradation are to undertake consistently sustainable management (social, economic, environment) of land resources.

2. National Commitment

The National Action Programme-CLD must be backed up by the long-term commitment of all parties concerned, particularly at political and decision-making levels, as well as bottom-up planning and local community based undertaking in the process of NAP-CLD. Programme planning and implementation will be undertaken by local community.

3. Integrated Approach and Consistent with National Development Objectives and Priorities

This NAP approaches land degradation control comprising several inter-dependent elements | a dynamic equilibrium within the context of sustainable land resource management, social and economic development particularly poverty alleviation and environmental stability. Mitigation of drought impact is also part of the programmes.

B. Action Principles

1. Partnership

The NAP-CLD strive to bring together all stakeholders and interested parties, in a partnership approach through a process for which they will fully concerned and committed to combat land degradation.

2. Participation

Issues, options and the resulting policies, strategies and actions are agreed upon through a participatory decision-making and consensus process building among all interested partners.

3. Decentralization and Institutional Reforms

One of the priorities of the NAP-CLD is to ensure that decentralization and institutional reform is conducive to sustainable land resource management.

IV. FORMULATION PROCESS

1. To draft the programme, suggestions will be gathered through a process of public consultation involving all related institutions, environmental organizations, academic communities, local communities, professionals at national, provincial and district levels.
2. Interdepartmental forum to discuss the content of the NAP includes representative from Ministry of Forestry, Ministry of Agriculture, State Ministry of Environment, Ministry of Infrastructure and Regional Development, Ministry of Finance, Ministry of Domestic and National Planning Board, and other related institutions.
3. Workshop on the formulation of NAP-CLD for combating land degradation held in Jakarta, 11-12 September 2001 will be followed by regional (provincial) workshop in Kupang in November 2001 participated by provincial and district level institutions, local NGOs, universities and private sectors from 3 provinces namely NTT, NTB and Sulteng.
4. Intensive consultation and discussion will be conducted at provincial and district level for mobilizing regional and local institutions participation in the formulation process.

5. The results from the workshops and consultations will be consolidated to form final draft, which will be presented to the high ranking policy makers in the Validation Workshop in year 2002.
6. The Ministry of Forestry, as Coordinating Body for the implementation of UNCCD in Indonesia, will request the Secretariat Cabinet for the issuance of Presidential Decree.
7. Launching of the NAP-CLD will be conducted in conjunction with the enactment of the Presidential Decree.

V. THEMATIC PROGRAMMES AND ALTERNATIVE PROJECTS

A. Thematic Programmes

1. PROVIDING ENABLING CONDITIONS

- a. Strengthening existing legislation
- b. Enacting new laws (if necessary)
- c. Human resources development
- d. Enhancing effective institutions
- e. Promoting public awareness

2. PROMOTING AGROFORESTRY

- a. Development of agroforestry demonstration areas for different soil fertility and land conservation
- b. Promoting local knowledge in agroforestry practice
- c. Provision of high quality seed and dry land farming inputs
- d. Promoting indigenous species for multi purpose plantations in dry lands

3. LAND DEGRADATION INVENTORY

- a. Inventory the extent of land degradation
- b. Land degradation mapping and classification
- c. Management of land degradation data and information system
- d. Identification of the root causes and impact of land degradation

4. MONITORING AND MITIGATING THE IMPACT OF DROUGHT

- a. Strengthening research activities in attaining drought-resistant crops, dry land farming techniques

- b. Improvement of early warning systems
- c. Formulation drought contingency plans

4. REHABILITATION OF DEGRADED LAND

- a. Rehabilitation of critical and degraded forests and lands
- b. Extension and strengthening local people participation
- c. Development of food crops under forest stands
- d. Improvement of pasture management and animal raising (husbandry) techniques
- e. Development of medicinal plants for critical land rehabilitation

5. IMPROVEMENT OF IRRIGATING FACILITIES AND CONSERVATION WATER

- a. Conservation and rehabilitation of watershed
- b. Construction of water reservoir
- c. Small irrigation improvement and maintenance
- d. Empowerment of local institution in dry land water management

7. SYLVOPASTORAL DEVELOPMENT
8. MONITORING, EVALUATION OF CLIMATIC VARIATIONS
9. EMPOWERMENT OF LOCAL COMMUNITIES AND LOCAL INSTITUTIONS
10. ESTABLISHMENT OF SUSTAINABLE LAND MANAGEMENT MODEL DEMONSTRATION AREAS
11. FORMULATION OF GUIDELINES

B. Alternative Projects

1. Water Conservation and Management Projects in Dry Land Areas of Palu and Poso Valleys, Central Sulawesi. This project will be located in poor community areas in marginal land with low soil fertility. Activities of the project consist of check dam construction, embung (water pond) construction, drip irrigation, and controlled sylvo pasture management.
2. Social forestry project in Benain Noelmina and Kambanero watersheds in Sumba Island. This project will be

located in very critical and steep dry land areas where forest fire occurred and uncontrolled grazing with high animal population density. Activities of the project include agroforestry, silvo pasture management, social forestry, and water pond construction.

VI. IMPLEMENTATION STRATEGY

1. Public support and participation is critical for applying and implementing methods of prevention and rehabilitation control.
2. Developing a partnership with local institutions and community and non-government organizations for an effective implementation of land degradation control.
3. Coordination with implementation of CCD and CBD for synergic and effectiveness of the needed supports and resources.
4. Strengthen cooperation with related regional institutions, regional CCD Thematic Programme Networks and international organizations.
5. Developing the capacity to be better consolidated, manage and deploy existing financial resources (APBN, APBD) and

strengthen the capacity to negotiate with international and national agencies for increased financial support.

6. Establishing priorities and development of action plans through active involvement in the decision-making by local communities in the implementation, monitoring and evaluation.
7. Full participation of representative community should be engaged in all level activities (planning, implementation, monitoring, and evaluation)
8. Use best practice knowledge and robust technologies including traditional knowledge and wisdom.
9. Awareness rising about good quality environment and sustainable agriculture development
10. Project should be holistically concern about the unique characteristic of the community in the respective degraded land (integrated and site special project)
11. Project should concern on long-term security investment through a good and attractive land tenure system.