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COMMITTEE FOR THE REVIEW OF THE IMPLEMENTATION OF THE CONVENTION

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**REVIEW OF THE IMPLEMENTATION OF THE CONVENTION AND OF
ITS INSTITUTIONAL ARRANGEMENTS, PURSUANT TO ARTICLE 22,
PARAGRAPH 2 (a) AND (b), AND ARTICLE 26 OF THE CONVENTION,
AS WELL AS DECISION 1/COP.5, PARAGRAPH 10**

**REVIEW OF THE REPORTS ON IMPLEMENTATION OF AFFECTED COUNTRY
PARTIES OF REGIONS OTHER THAN AFRICA, INCLUDING ON THE
PARTICIPATORY PROCESS, AND ON EXPERIENCE GAINED
AND RESULTS ACHIEVED IN THE PREPARATION AND
IMPLEMENTATION OF ACTION PROGRAMMES**

Compilation of summaries of reports submitted by affected Asian country Parties

1. In accordance with decision 9/COP.7, the Committee for the Review of the Implementation of the Convention at its fifth session will review the reports on implementation of the United Nations Convention to Combat Desertification by affected country Parties of regions other than Africa, including Asia and the Pacific. By its decision 11/COP.1, the Conference of the Parties requested the secretariat to compile summaries of such reports. Decision 11/COP.1 also defined the format and content of reports and, in particular, required summaries not to exceed six pages.

2. This document contains 31 narrative summaries of reports as submitted by affected Asian country Parties as at 17 November 2006, and document ICCD/CRIC(5)/MISC.1/Add.1 contains 26 tabular summaries; these are reproduced without formal editing. The secretariat has also made these reports available in their entirety on its website <www.unccd.int>.

ICCD/CRIC(5)/MISC.1

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AFGHANISTAN

Afghanistan has an area of 65.22 million ha. Great mountain ranges (Pamir and Hindukosh) divide the country with a high area of plains in the north, a mountainous central area, mountains and foot hills in the east and south east and low land to the south and west. According to DAI/EARTH Sat only 10 per cent of land area is agricultural. Half of this is rain-fed and half is irrigated.

Afghanistan has an extremely low level of forest cover. The conifer and oak forests in the south east and pistachio forests in the north cover 1.9 million ha of the total land area. Rangeland covers about 45 per cent of the territory.

Forest and woodlands, throughout Afghanistan are being cut down without consideration of their ecological, environmental, and economic worth. It is observed that entire plant covers are moved for fuel wood and the land is converted for dry land cultivation. Thus the process of deforestation combined with overgrazing and drought lead to increase soil erosion, landslide, watershed degradation, loss of biodiversity, loss of livelihood sources, desertification, land degradation and reduced ecosystem services.

Due to loss of stabilizing vegetation, sand dune movement has occurred (in the north and south west parts of the country). The sand dunes are presently moving onto agricultural land as well as into human settlements.

The above-mentioned environmental degradation has caused drought, floods, decrease in production, increase in prices, unemployment, and lack of access to health care, as well as internal displacement and depletion of wild life habitat. These are presently typical economic and environmental shocks in the country. People have lost their household assets, income generating opportunities and finally, the control over their normal living conditions.

The London Conference held on 31 January and 1 February 2006 provided an opportunity for the Government of Afghanistan to present the Interim National Development Strategy, which sets out its political and economic plans and priorities for the next five years. Thus, environment is under one of the three pillars “Economy and Social Development”. Afghanistan Compact states “... in line with Afghanistan’s MDGs, environmental regulatory frameworks and management services will be established for the protection of air and water quality, waste management and pollution control, and natural resource policies will be developed and implementation started at all levels of government as well as the community level”. This is given importance to sustainable land management.

To combat desertification the following effective (multi-actor) approaches are recommended:

1. Governmental institution shall focus on:
 - Issue and maintenance of law, order and social justice.
 - Preparing national programme concerning desertification and its prevention.
 - Creation of a policy/strategy framework such as legal system for allocation of user rights over forests and rangeland to communities, forestry law, etc.
 - Facilitating programmes and project implementation.
 - Attraction of international donor assistance for sustainable land management.

- Create a suitable mechanism among the relevant government and non-government organization to implement Afghanistan's obligation towards the United Nations Convention to Combat Desertification.
 - Establishment of an information system to address desertification and land degradation issues.
 - Establishing community-based institutions.
2. Strengthening the capacities of Provincial Councils for:
 - Establishing committees for the planning and organization of implementation.
 - Decision making concerning local strategy for combating desertification.
 - Provision of organization and labour for conducting field activities.
 - Local monitoring and evaluation
 3. Utilizing expertise of international agencies for:
 - Developing the capacity of the government and communities through exchange expertise.
 - Provision of support and funding for the implementation of programmes and projects.
 4. Supporting national non-governmental organizations:
 - Establishment of longer-term links with the communities.
 - Provision of technical services to communities.
 - Training of communities in various technical skills.
 5. Private sector development:
 - Provision of technical services.
 - Establishing entrepreneurial opportunities.

BANGLADESH

Bangladesh signed the United Nations Convention to Combat Desertification (UNCCD) on 14 October 1994 and ratified the same on 26 January 1996, and it came into force on 26 December 1996.

Bangladesh is a land-scarce country with a population of 142 million inhabiting a geographical area of 147,560 sq km, though land is the most important provider of economic and social security for the people of Bangladesh, and agriculture is the most important vocation of its population. The per capita land, particularly for agricultural production has been diminishing with the increase in population; the loss of agricultural land is taking place at the rate of approximately 1 percent per year. Land degradation in varying degrees is affecting about 6.0 million hectares or 43.0 percent of the total land area of Bangladesh. The recent estimate of degraded land points to about 33 percent of the total lands.

Agricultural intensification and the increase in irrigated area have led to a number of environmental problems, viz. loss of biodiversity through the conversion of forest land into agricultural land and abandonment of many indigenous crop varieties in favour of high yielding varieties leading to irreversible loss of the country's genetic resources. The continuous production of rice is resulting in declining yields and soil nutrient (sulphur and zinc) contents.

About 65 percent of the net cultivable area suffers a shortfall in organic matter contents. Similarly, depletion of organic carbon and total nitrogen was observed in different cropping areas. The increased use of agrochemicals caused pollution of surface and ground water.

Among many environmental issues that Bangladesh faces today, land degradation due to aridity and loss of crops due to droughts have been causing considerable economic losses and human suffering. It is thought that desertification process may have started in some of the most aridity prone areas.

Land degradation in the coastal areas is characterised by water logging and associated productivity decline. Salinisation caused by the expanding shrimp farming and sea level rise is affecting a considerable expanse of landmass along the coasts. The coastal belt is also severely affected by the destruction/disappearance of mangroves.

The ecosystem, both flora and fauna, are under threat due to loss of habitat. The loss of wetland habitats due to drainage and pumping of water results in the depletion of aquatic fauna and flora and reduction of water availability for the rural population. The current forest protection practices and trends must be reversed, or Bangladesh will not have any significant protected area system left by the year 2010.

The salinity level of the soil in some of the coastal areas has gradually gone up, due to the shrinking flow of water along the major rivers, with consequent reduction in crop yields. Moreover, due to frequent cyclones, tidal surges, floods, etc., there occurs serious deposition of coarse sand along with increasing soil salinity, resulting in severe land degradation in the coastal zones of the country. All these phenomena point to the inevitable fact that a slow but sure process of desertification is in progress in the country. If not checked in time, the exacerbating aridity along with the accompanying desertification process is destined to cause catastrophic situations leading to a severe environmental and socio-economic crisis along the coastal zones of the country.

River erosion is creating tremendous impacts on agriculture and human habitation. The reduced flow in the Ganges river due to flow diversion at Farakka during the dry season has changed the whole hydrological regime with upstream salinity intrusion in the south-western region of the country, degrading the soil and the ecosystem, leading to seriously decreased agricultural production.

Bangladesh comprises the floodplains of the Jamuna, the Padma, the Meghna and some smaller rivers. The Madhupur Tract, the Barind Tract, and the Akhaura Terrace stand slightly above the floodplain level and the hills lie along the eastern and the northern boundaries. The western-northwestern part of the country is generally considered as the comparatively drier region marked by lower rainfall.

Very severe spells of droughts hit the country in 1951, 1961, 1975, 1979, 1981, 1982, 1984, and 1989. The past droughts have typically affected about half of the country's area and population. An analysis of the relative effects of flood and drought revealed that drought has been more devastating compared with floods with regard to agricultural production.

Participation of Bangladesh as a Party to this Convention will assist the country in resolving many problems related to it.

The estimates of the extent of land degradation in Bangladesh are that over 6.0 million ha falls below the minimum threshold for sustainable cultivation. In drier parts of Bangladesh, low soil fertility is recognized to be at the root of the land degradation spiral leading to desertification. Land degradation in Bangladesh may be considered as temporary or permanent lowering of the productive capacity of land. Evidence of land degradation as shown in satellite imageries indicates a definite change in vegetation cover and soil moisture through the western and south-western regions including the Barind Tract covering Rajshahi, Pabna, western Bogra and southern Dinajpur, largely monocultural area with shrinking wetlands, notably the Chalan Beel wetlands. Human interventions in the densely populated adjoining regions (around the national average of 900 persons per km²) make these areas more vulnerable. The south-western region of Kushtia and north-western Jessore have also been known to be relatively more prone to aridity.

There are accounts of groundwater table levels going down in dry season in areas in the northwestern region of Bangladesh. This indicates that most of the shallow tube-wells go below the suction lift capacity in the peak irrigation period. The groundwater levels even beneath Dhaka City have been falling steadily over the last twenty-five years as a result of continuous extraction.

These accounts of lower water table levels, decreasing vegetative cover and decreased agricultural yields indicate disturbing trends of land degradation in many parts of western Bangladesh.

As a result, alternative practices to meet the demands for water, fuel and biomass have emerged, which are deemed to be unsustainable and which necessitate the emergent use of surface water for irrigation, where available.

With a view to undertaking measures for reversing the above trends of land degradation, Bangladesh has considered incorporating several activities as integral components of the national development strategies and environmental planning. The current programmes launched to combat land degradation also include strategies for alleviating poverty because these two goals are complementary. To combat land degradation and to attain sustainable land management and development, current government programmes have focused on field-oriented activities concerted with strengthening institutional capacity that would enable policymakers to make informed decisions on best practices and appropriate mitigation measures. In addition, the Government of Bangladesh (GoB) wants to build programmes where field level research and community participation is strong to allow application of research results through extension programmes.

Current and completed GoB programmes include:

- Afforestation programmes on denuded Forest Department lands, and marginal lands controlled by a variety of other government agencies
- Barind Integrated Area Development Project (BIADP) (later renamed as Barind Multipurpose Development Authority (BMDA)) under implementation aimed at mitigating the processes of land degradation of the Barind region
- Soil conservation and watershed management as a component of the current Three-Year Plan.

Some of the longer-term measures proposed and fielded under the National Environment Management Action Plan (NEMAP) had relevance to combating land degradation, viz. GoB-developed national plans or strategies in combating land degradation, prior to the Convention, including the National Environment Policy, NEMAP, the Bangladesh Forest Policy and the National Water Master Plan (NWMP), which had laid the foundation for promotion of homestead and social forestry, agro-forestry and reforestation of degraded sal forest regions as well as irrigation facilities to the vulnerable land; and annual afforestation and tree planting programmes between the Ministry of Environment and Forests (MoEF) and the Department of Agricultural Extension (DAE). These afforestation activities were taken up under various schemes and programmes of different ministries of the GoB. Under the Forestry Sector Project (FSP), plantation of 40,000 ha of sal forest had been planned during 1997-2003. Other programmes and projects included BIADP and the Sustainable Environmental Management Programme (SEMP). Ecosystem management in the Barind Area was designed to improve the ecosystem of the dry and degraded Barind land through community based sustainable environmental activities. The environment management action plan for the Barind area was aimed at combating desertification and environmental awareness; effecting social mobilization and conducting motivational activities should be ongoing; and the electronic database on agro-ecological and drought prone areas of the country has been created and is being managed by the Bangladesh Agricultural Research Council (BARC). The UNCCD Trust Fund has been mobilized through a partnership arrangement with MoEF providing funds to selected activities for implementing non-governmental organizations (NGOs).

The national workshop on the formulation of the National Action Programme (NAP) for Combating Desertification held in Dhaka on 2-3 March 2003 had recommended the following:

- Develop techniques for identification, and ingress of the desertification process using remote sensing and other modern techniques
- Identify regions and areas under stress and select priorities/locations for immediate actions
- Set up monitoring mechanisms in selected areas
- Set up early drought warning system using meteorological and hydrological data
- Synergize with national adaptation programmes of action (NAPAs) and the National Biodiversity Strategies and Action Plan (NBSAP)
- Undertake activities in priority areas identification of issues, problems and gaps
- Recommend priority action in the fields of afforestation and reforestation programme with suitable local species, excavation and re-excavation of canals and water bodies for water harvesting and water conservation, undertake research and pilot level activities in the development of appropriate cropping pattern; introduction of less water demanding and/or drought resistant crops; introduction of salinity resistant crops; prioritize provision of safe drinking water in drought prone areas; improve water management practices; introduce integrated water resource management practices, research and pilot activities for introduction of renewable energy as well as energy saving devices, improve soil quality through enhancement of organic contents of soil, prevent loss of top soil through integrated crop, land and forest management.

Besides the proposals under the above broad heads, the draft recommendations made other proposals as follows:

- Integrating the NAP with existing policy, plan and institutional regimes
- Linking up with the Poverty Reduction Strategy Paper (PRSP)

- Paying attention to regional issues
- Ensuring participatory approach in NAP formulation and implementation
- Completion of the NAP for presentation at the next Conference of the Parties, to be held in September 2003 in Cuba
- Mobilization of funds from the Global Environment Facility (GEF) and other sources
- Line Ministries/agencies to carry out all activities under the guidance of the proposed NSC.

Some donor assisted government programmes relevant to combat desertification include:

- SEMP, funded by the United Nations Development Programme (UNDP) as the follow-up implementation of the NEMAP, addresses the major environmental priorities identified by people through NEMAP
- Forest Resource Management Project (FRMP) Bangladesh Environmental Management Project (BEMP), Canadian International Development Agency-funded institutional strengthening project to assist the Department of Environment (DoE) in meeting its mandate as defined in the Economic Commission for Asia (ECA) 1997
- Water Sector Improvement Project (WSIP)
- Follow-up on River Bank Protection Project (RBPP)
- Bangladesh Arsenic Mitigation and Water Supply Project (BAMWSP)
- Coastal and Wetland Biodiversity Management at Cox's Bazar and Hakaluki Haor funded by the GEF
- NBSAP
- National Environmental Action Plan (NEAP) for Barind area.

The activities undertaken of late include the following:

- Bangladesh has prepared the NAP for implementation of the UNCCD in Bangladesh. The draft NAP was completed in April 2005 through a consultation process with 22 stakeholders that included three land related disciplines from two universities, four land related and agricultural research organizations, nine government departments, and three ministries of the government. In addition civil society was represented by major NGOs. The NAP has identified eight thematic areas for programme elaboration that included awareness raising, capacity building, institutional strengthening and cooperation, rehabilitation of degraded land and strategies for land degradation mitigation, integrating options for poverty alleviation. The NAP now awaits government approval before implementation.
- The Forest Department with the financial support from the Asian Development Bank has undertaken the Forestry Sector Project (FSP) for sustainable management of forest through community participation, and promotion of measures that include social forestry and agro-forestry to enhance forest resources while arresting degradation of forest land. The project covers all the 64 districts and involves 29 of the 43 Territorial and Social Forest Divisions of the country.
- The Government also initiated a new institutional focus as the Nishorgo Programme in February 2004 to continue until 2010 for conservation of the protected areas. A management team of the Forest Department should become established as a recognized institution of excellence for participatory management of the protected areas involving the local population and their culture. The Arannyak Foundation, that has been established by the joint initiative of the Government with support from the United States of America will play a catalytic role in the realization of the vision of the protected area management outlined in this project

providing financial and technical support, and by building people's awareness towards this vision.

- The MoEF has established a clearing house for the UNCCD within the ministry to follow up on the Convention that also includes the preparation of national reports.
- Bangladesh is in the process of establishing effective participation and linkages in the regional and subregional programmes under UNCCD and the Thematic Programme Network (TPN) for cooperation between affected countries.

BHUTAN

Country Overview

Bhutan is a small country both in size and population. It has a total area of 38,394 km² and a population of 634,982 people. Landlocked and mountainous, the country lies in the Eastern Himalayas with the Indian states of Arunachal Pradesh to its east, Assam and West Bengal to its south, Sikkim to its west and the Tibetan Autonomous Region of China to its north. The Bhutanese population is largely agrarian with 69 percent living in rural areas. However, the proportion of urban population has been growing rapidly in the recent years. Between 1997 and 2005, the urban population is estimated to have grown from 15 to 31 percent. The people in the rural areas subsist largely on an integrated livelihood system of crop agriculture, livestock rearing and use of forest products – collectively known as the renewable natural resources (RNR) sector.

Forest is by far the most dominant land cover, with 72.5 percent (including 8.1 percent scrub forest) of the country under forest cover – one of the highest in the world. Almost all of the forests are natural, with plantation forest being just about 0.2 per cent. The country's forests are presently managed as government reserved forests under the legal framework provided by the Forest and Nature Conservation Act 1995. Agricultural land makes up only 7.7 percent, mostly located in the central valleys and southern foothills. The main land uses for agriculture are kamzhing (dryland cultivation), chhuzhing (wetland cultivation), tseri (slash-and-burn cultivation), and mixed cultivation. Much of the northern part of the country is snow and glaciers, which account for 7.5 per cent of the country's land cover. Barren rocks cover 5 per cent and pastures 3.9 per cent of the country. Urban area is presently negligible but expanding rapidly especially in Thimphu and Phuentsholing.

Key Land Degradation Issues

Despite environment being at the center of development policies and plans, Bhutan faces several land degradation issues – some are longstanding and others are emerging. **Grazing** is one of the key issues. Livestock is maintained by the rural Bhutanese mainly for dairy and meat production, draught power and production of dung for farmyard manure. Despite consistent government efforts to reduce the livestock population through introduction of improved breeds, artificial insemination and sterilization, the livestock population has remained high. The cattle population has increased albeit slightly from 308,273 in 1990 to 320,509 in 2000. Similarly, the yak population has increased from about 33,035 to 34,928 during the same period. High livestock population has led to overgrazing in many instances. Over-grazing of pastures and forests, mainly in broadleaf forests, may lead to attrition or loss of species, reduction of land productivity and soil erosion.

Forest fires are a recurrent and widespread phenomenon despite strict penalties posed by the Forest and Nature Conservation Act 1995. Records maintained by the Department of Forestry reveal that from 1992/93 to 2004/05, 870 incidents of forest fires have occurred, affecting more than 128,000 hectares of forest land. All forest fires in the country are man-made, either set deliberately to invigorate the growth of pastures or commercially valuable grasses such as lemon grass, or occurring due to general public carelessness.

Unsustainable use of forest resources is also a major concern. A report of the Forest Resources Development Division mentions that the annual total consumption of timber at 190,000 m³ in the recent years exceeded the total annual allowable cut of about 149,000 m³ from all Forest Management Units. The excess demand was met from ad hoc sources, which is a cause for concern as these sources are not operated based on sustainable forest management planning. Fuelwood consumption is even higher at 1.27 tons or 1.8 m³ per person per annum. This works out to nearly 1.2 million m³ per annum. As a result of excessive forest use, localized deforestation has occurred in several places especially where population density is high, for example in parts of eastern and southern Bhutan.

Concomitant with modernization, the need for **infrastructure development** has grown. Socio-economic development objectives necessitate construction of roads and electrification among other things. Development of these infrastructures, when not carried out in an environmentally sensitive manner, can have serious adverse impacts especially in terms of slope destabilization and vegetation loss.

While 69 percent of the population depend primarily on agriculture, arable agriculture land is less than 8 percent mostly located in the central valleys and southern foothills. This limited area has also to support other development activities of a population which is currently growing at 1.3 percent each year. As a consequence, there is **intensive and competitive land use**, impacting on the productivity and stability of the land.

Pollution of land is emerging as an environmental problem in and around urban areas and industrial sites. Over the recent years, generation of solid waste has increased significantly in urban centers. According to data collected by the Royal Society for the Protection of Nature, Thimphu's solid waste generation has increased from eight tonnes a day in 1994 to 22 tonnes in 2003-04, and to 37 tonnes as of August 2005.

There is **rapid urbanization** taking place in the country. The urban population has grown from 15 percent of the country's total in the Eighth Five Year Plan (July 1997-June 2002) to 31 percent by 2005. Thimphu alone has more than 40 percent of the total urban population while Phuentsholing has more than 10 percent. In order to accommodate surplus population, these urban centers have consumed prime agricultural lands in the valleys and encroached on hill slopes which were once forested. Extraction of sand and stones from the river banks and harvesting of timber from adjacent forests have increased in frequency and volume in recent years to cater to the growing construction demands in the urban centers.

Multilateral Environmental Agreements, UNCCD and Bhutan

Bhutan's attendance at the United Nations Conference on Environment and Development in 1992 marked the nation's increasing participation in global environmental management efforts.

Subsequently, the country became Party to the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change, when its National Assembly ratified them in August 1995. It acceded to the United Nations Convention to Combat Desertification in August 2003. In addition to these three Conventions, the country is Party to seven other environment-related international conventions and treaties.

National Sustainable Development Policies and Plans

Environmental sustainability occupies a pivotal place in Bhutan's development policies and plans. **Bhutan 2020** provides overarching policy for development based on the concept of "Gross National Happiness", underscoring that economic, spiritual and environmental well-being are all equally important. It provides a 20-year perspective of development goals and objectives and features environmental conservation as one of the five main development objectives

The **National Environment Strategy** titled "The Middle Path" – launched in 1998 – was derived through an inter-sectoral and consultative process. The Strategy, which is equivalent to a National Sustainable Development Strategy in essence, enshrines the concept of sustainable development and identifies three main avenues for such development: hydropower development based on integrated watershed management; agricultural development based on sustainable practices; and industrial development based on effective pollution control measures and environmental legislation.

The **National Forest Policy 1974** places priority on conservation of forests and associated resources for their ecological values. Economic benefit from forest resources is considered secondary and is to be derived within sustainable limits. One of the guiding principles pertains to protection of forests to prevent or reduce land degradation.

Agricultural development is guided by the overall **renewable natural resources sector policy** which operates on the objectives of: people-centered development; economic development with prospects for long-term sustainability; balanced and equitable development of the country's renewable natural resources; and development that is environment friendly and ensures the integrity of the country's fragile ecosystem.

The **Five Year Plans** are the main implementation instruments for achievement of national policy objectives. The Five-Year Plans, which spell out programmes, activities and budget outlay, are formulated and implemented at three levels: central level, made up of sectoral plans; dzongkhag level; and geog level. The ongoing Ninth Five Year Plan, with a Cover Note on poverty reduction added to it, serves as the country's **Poverty Reduction Strategy Paper**. The Ninth Five Year Plan incorporates environmental objectives including those contributing to combating land degradation.

Institutional Setting for the Implementation of UNCCD

The **National Environment Commission** (NEC) acts as an inter-ministerial body for coordinating all cross-sectoral environmental matters, including those pertaining to international environmental agreements and treaties. The NEC was first established in 1989 by Royal Decree as a National Environment Committee under the Planning Commission. Subsequently, in September 1992, the NEC was delinked from the Planning Commission to serve as a more vigorous, autonomous government body. It was reconstituted on 29 September 1998 and serves

as high level body with inter-ministerial representation for policy decisions and guidance on matters related to environmentally sustainable development and institution of measures to integrate environmental management in overall development process. The Commission is currently chaired by the Honorable Minister of Agriculture and is served by an independent Secretariat, headed by the Honorable Deputy Minister of Environment.

The **Ministry of Agriculture** is the national focal agency for the UNCCD. Within the Ministry of Agriculture, the **National Soil Services Center** (NSSC) has been specifically assigned to coordinate the implementation of activities related to UNCCD with the Programme Director of the NSSC as the point person.

The Ministry of Agriculture was formed in 1985 and brought together the agriculture, livestock development and forestry sub-sectors, which are now collectively known as the renewable natural resources (RNR) sector. Apart from the Departments of Agriculture, Livestock and Forestry, the Ministry has four non-departmental agencies namely the National Biodiversity Center, Natural Resources Training Institute, Information and Communication Services, and Bhutan Agriculture and Food Regulatory Authority. The Ministry is directly supported by a Planning and Policy Division and an Administration and Finance Division. It has also instituted a Council for RNR Research in Bhutan to guide and coordinate the research programmes and activities implemented by the regional RNR research centers.

The National Soil Services Center, which is the **national focal agency** for UNCCD, is a part of the Department of Agriculture. The Center functions as a resource and referral facility dealing with soil survey, analysis and fertility management and is mandated to coordinate soil management research activities of the RNR sector and to provide analytical services. Of late, besides becoming the UNCCD focal agency, the Center has assumed two major responsibilities in the context of combating land degradation: of management of the Global Environment Facility-funded/World Bank-assisted Sustainable Land Management Project through a multi-sectoral approach involving stakeholders at the central, dzongkhag and geog levels; and of providing core technical advisory services to the Land Management Campaign launched about a year ago. The Center has a team of some 23 researchers and technicians, who function with oversight and guidance from the Programme Director and administrative support of eight general staff.

The implementation of programmes and activities to combat land degradation go beyond the realms of the National Environment Commission and Ministry of Agriculture. The following table lists various **key partner agencies** and their area of work in relation to combating land degradation.

Key Partner Agencies in the Context of Combating Land Degradation

Agency	Area of work
<i>Government agencies</i>	
Department of Geology and Mines, Ministry of Trade and Industry	Geological mapping, geologic hazard and risk assessments, geotechnical advisory service, mineral exploration, enforcement of Mines and Minerals Management Act 1995 and Mines and Minerals Management Act 2002
Department of Roads, Ministry of Works and	Promotion of environment-friendly road construction concept and techniques including the enforcement of environmental assessment

Agency	Area of work
Human Settlement	guidelines and environmental codes of practice for roads
Department of Urban Development and Engineering Services, Ministry of Works and Human Settlement	Enforcement of environmental assessment guidelines and environmental codes of practice for roads, planning and ensuring establishment of environmental management infrastructure such as storm water drainage, sewerage and municipal solid waste disposal systems
<i>Autonomous agencies</i>	
City Corporations	Implementing urban development plans entailing effective use of land for development of urban infrastructure and management of urban lands
<i>Dzongkhag/ Geog Institutions</i>	
Dzongkhag Administrations	Through the Dzongkhag Environmental Committees (DECs), the Dzongkhag Administrations have the responsibility to ensure integration of environmental concerns in dzongkhag plans and to implement environmental assessment and clearance procedures for dzongkhag and geog level projects and activities that are small-scale and unlikely to have any major adverse environmental impacts.
Dzongkhag Yargye Tshogdu	Implementation of Dzongkhag Yargye Tshogdu Chathrim 2002, which among other things provides for environmental management at the dzongkhag level
Geog Yargye Tshogchung	Implementation of Geog Yargye Tshogchung Chathrim 2002, which among other things provides for environmental management at the geog level
<i>Non-governmental organizations</i>	
Royal Society for the Protection of Nature	Environmental education and public awareness, conservation management of designated natural habitats outside the national protected areas system

Legal Framework for the Implementation of UNCCD

Existing laws and regulations provide a good legal framework for the implementation of activities pertaining to UNCCD obligations. The following are the key laws with specific provisions for land use, management and protection:

- Land Act 1979
- Environmental Assessment Act 2000, supported by Regulation for the Environmental Clearance of Projects and Regulation for Strategic Environmental Assessment 2002
- Forest and Nature Conservation Act 1995, supported by Forest and Nature Conservation Rules 2000
- Mines and Mineral Management Act 1995, supported by Mines and Mineral Management Regulations 2000

- Road Act 2004
- Dzongkhag Yargye Tshogdu Chathrim 2002
- Geog Yargye Tshogchung Chathrim 2002

However, a few gaps exist. One pertains to the absence of a Grazing Management Act which among other things would provide for sustainable management of grazing lands. Currently, in absence of such an Act, activities on grazing land are governed by the Land Act 1979 and the Forest and Nature Conservation Act 1995. Both these legislations do not specify any provisions for management of grazing lands. Secondly, land use and management regulations are presently lacking. In absence of such regulations, land use in several situations is not consistent with the local land capability conditions. Therefore, there is the need for land capability classification, land use inventory and consequent formulation of land use and management regulations so that land use and management is consistent with land capability.

Major Initiatives to Combat Land Degradation

While there are numerous programmes and activities of the Royal Government of Bhutan that directly or indirectly contribute to combating land degradation even if they are not specifically or inherently aimed to do so, there are two major initiatives that stand out for their exclusive focus on land degradation problems in the country. These are:

- Sustainable Land Management Project funded by the Global Environment Facility (GEF) through the World Bank;
- Land Management Campaign.

The Royal Government of Bhutan embarked on the **Sustainable Land Management Project** in 2006 with grant from the GEF through its Operational Programme 15 and co-financing from the Danish International Development Assistance (DANIDA). Facilitation and technical support for the project has been available from the World Bank. The project has been conceived with the development objective to strengthen institutional and community capacity in terms of human resource, policies, incentives, technologies and knowledge for anticipating and managing land degradation in the country. The Project has four complementary, mutually-reinforcing components:

- Component One – Pilot projects to demonstrate effective application of land degradation prevention approaches
- Component Two – Mainstreaming of practices for protection against land degradation
- Component Three – Policy support and guidance for mainstreaming land degradation prevention practices
- Component Four – National level support for coordination of implementation of land degradation prevention practices.

The other major initiative, the **National Land Management Campaign**, was launched in July 2005 by Lyonpo Sangay Ngedup, Honorable Minister of Agriculture, in response to the need to proactively address land degradation problems which had become increasingly visible and profound in terms of impacts on the local people and their livelihoods. The Campaign has been embarked upon as a continuous programme of the Ministry of Agriculture to instill in people the awareness and understanding of various land management techniques based on site-specific land degradation problems. It focuses on on-the-ground demonstrations using a broad-based

participatory approach bringing together local communities, dzongkhag staff as well as professionals from various disciplines.

In the first year, i.e. 2005, the Campaign was implemented in Trashigang dzongkhag. It covered eight locations in eight different geogs. The campaign established about 115 acres of demonstration sites, involving interventions such as contour hedgerows, brush layering, check dams, log dams, land terracing, edge trimming, and boundary plantings based on site-specific land degradation problems. Altogether, more than 3,100 people – farmers, local public volunteers, dzongkhag officials, RNR staff, school teachers, students and local community leaders – took part in the National Land Management Campaign in its first year.

In 2006, the Campaign will cover additional areas in other dzongkhags and carry out follow-up activities and rectification where necessary in the locations covered during 2005.

Status of National Action Programme to Combat Land Degradation

Bhutan has yet to develop a National Action Programme (NAP) to combat land degradation. A proposal has been prepared to formulate a NAP using a consultative, participatory process involving stakeholders at the national, regional, dzongkhag and geog levels. The proposed NAP will be a key part of the proposed medium-sized GEF project titled “Capacity Building in and Mainstreaming of Sustainable Land Management in Bhutan”.

The formulation of the NAP is expected to start in July 2006 and will be carried over period of one year.

CAMBODIA

About 80% of the 13.8 million Cambodian population are farmers. The agricultural sector has contributed about 39% of the total Gross Domestic Product (GDP). In this connection the third mandate of the Royal Government of Cambodia led by Samdach HUN SEN, Prime Minister, has taken agriculture as a core foundation for rehabilitation and reconstruction of the Cambodian economy in the Rectangular Strategy for Growth, Employment, Equity and Efficiency, because the agricultural sector provides the major source to development of other sectors.

However, the long period of time of land use, deforestation and soil erosion led to unfertilized and damaged soil, causing serious impacts to agricultural productivity and the environment such as irregular drought and floods, increasing temperature and irregular rainfall.

Land degradation will remain an important global issue for the 21st century because of its adverse impact on agronomic productivity and the environment, and its effect on food security and the quality of life. Productivity impacts of land degradation are due to a decline in land quality on site where degradation occurs (e.g. erosion) and off site where sediments are deposited. However, the on-site impacts of land degradation on productivity are easily masked due to use of additional inputs and adoption of improved technology and have led some to question the negative effects of desertification. The relative magnitude of economic losses due to productivity decline versus environmental deterioration also has created a debate. Some economists argue that the on-site impact of soil erosion and other degradative processes are not severe enough to warrant implementing any action plan at a national or an international level.

Land managers (farmers), they argue, should take care of the restorative inputs needed to enhance productivity. Agronomists and soil scientists, on the other hand, argue that land is a non-renewable resource at a human time-scale and some adverse effects of degradative processes on land quality are irreversible, e.g. reduction in effective rooting depth. The masking effect of improved technology provides a false sense of security.

The most important objective of the UNCCD is to combat desertification occurring in the dry land regions of the world and to mitigate the effects of drought. Desertification is due to complex interactions among physical, biological, social, cultural and economic factors. Desertification impacts the social and economic development not only the region, but also the countries as a whole.

Desertification and drought cause land degradation and affect sustainable development through their interrelationships with important social problems such as poverty, poor health and nutrition, lack of food security, and consequences arising from these such as migration, social conflicts and unrest. The convention emphasizes the need to address these in an integrated manner.

At the same time, the improvement of soil fertility and reforestation for protection of soil erosion will also contribute to the national environment as well as regional and international environment.

Cambodia became a signatory to the UNCCD on 15 October 1994, and ratified the Convention on 18 August 1997.

The year 2003, built upon the progress made in 1999-2002, is witness to Cambodia's decisive move towards a lasting peace, sustainable development and tangible progress, as manifest in the impressive economic growth and continuous efforts to strengthen democratic institutions and alleviate poverty. The Royal Government of Cambodia envisions that "before the first decade of this century ends, Cambodia would like to fully reclaim its destiny, be a real partner in regional and global affairs and be well on her way to becoming a truly free nation, free from want and poverty above all."

General indications are that many of Cambodia's soils are prone to drought. They tend to have low moisture-holding capacity and physical characteristics, such as low organic matter content, which restrict effective rooting depth and subsequent yields. Unfertilized rice yields vary widely depending on soil type. On poorer soils yields are as low as 600 to 900 kg/ha. Some good soils do exist in the active floodplain of the Mekong, but it is in these areas where development pressures are also most intense. Unfertilized yields on better soil types can reach as high as 2,000–2,500 kg/ha. In addition, Cambodia's fertilizer use is one of the lowest in the region.

The Royal Government of Cambodia especially for the Ministry of Agriculture, Forestry and Fisheries as the National Focal Point of UNCCD and international communities and/or donors to understand the Cambodia's past and current capacity for implementation of the obligation, the impacts and the current strategies takes toward and/or the future policy recommendations to target the sustainable development land use management and land improvement integrated with the other two conventions by cross cutting issues with an environmentally friendly manner.

The publication of the report will contribute greatly to improving our understanding of Cambodian capacity, and its improvement, towards our activities and identifying and/or

foreseeing the negative multiplier causes that affect the long-term sustainability of economic development, thus providing a basis for a comprehensive environmental protection strategy and policy framework.

There is growing concern in Cambodia over land degradation. Land clearing for agriculture and other development initiatives is increasingly exposing Cambodia's sandy soils to erosion forces, leading to significant problems in some areas. Of particular concern, there appears to be low potential for yield increases across approximately 50% of Cambodia's cultivated areas due to severe soil quality problems. Soil infertility has been recognized as one of the most serious constraints to crop yield improvement in Cambodia. The Cambodia-International Rice Research Institute--Australia Project has made significant contributions to the soil knowledge base, but much remains to be done to improve the understanding and productivity of soil management.

CHINA

China is one of the countries in the world suffering from severe desertification over a vast area. The area prone to desertification is 3.317 million km² accounting for 34.6% of the total territory. According to the findings of the national desertification and sandification monitoring operation in 2004, by the end of 2004, the area of desertification was projected to be 2.6362 million km²; this is 27.46% of the total territory and 79.48% of the area prone to desertification, which is higher than the world's average of 69%. The desertified land in China is mostly distributed in 498 counties in 18 provinces, including Xinjiang, Inner Mongolia, Tibet, Qinghai, Gansu, Hebei, Ningxia, Shaanxi and Shanxi. The area of desertified land as a result of wind erosion totals 1.839 million km², which is 19.16% of the total territory and 69.77% of desertified land, and it is distributed in 13 provinces in northwest, north and northeast China. It thus forms a sandified zone, which is 4,500 km long east-to-west and 600 km wide north-to-south and stretches from Tarim Basin in the west to the Songnen Plain in the east. The area of desertified land as a result of water erosion totals 259,300 km², distributed mostly in the Loess Plateau in the upper and middle reaches of the Yellow River. The area of desertified land as a result of freezing and thawing totals 363,600 km², distributed mostly in the alpine zone of the Qinghai-Tibet Plateau. The area of salinized desertification land totals 173,700 km², distributed mainly in the oasis around Tarim Basin, the alluvial plain at the north foot of the Tianshan Mountain, Hetao Plain and Huabei Plain. In addition, another 104,900 km² of rocky desertification affected land is mainly distributed in 3 provinces –Yunnan, Guizhou and Guangxi.

The Government of China has always attached great importance to combating desertification and has been paying more attention to it. Especially since the start of the 21st century, the Government has incorporated ecological improvement into the overall strategy of the national economic and social development, with combating desertification as main task. Consequently, several significant actions have been taken, including promulgation and execution of the Law on Combating Desertification, and implementation of a series of integrated ecological improvement programmes. The pace of prevention and control of desertification is speeding up, with historic breakthroughs being made. The tendency for desertification and sandification to expand has started to be restrained. The process of desertification has been reversed from an average annual expansion of 10,400 km² in late 20th century to an average annual contraction of 7,585 km² during 1999-2004.

However, because of the fragile ecological condition, poor stability of man-made plant community, poverty in the affected areas, existence of natural and social factors resulting in desertification, the possibility of climatic variation induced droughts, the elementary feature of the current achievements, the challenges ahead are still huge and the task still arduous.

The programme (2005-2010) has been worked out based on the present situation and the achievements and experiences gained in combating desertification over the past 5 decades, in accordance with the State Eco-environment Improvement Programme. The programme integrates programmes from relevant sectors, absorbing comments and suggestions from grass-root levels in the affected areas, in line with the principle of integrated ecosystem management. It has a focus on the major problems challenging desertification combating in China.

The programme maps out the guiding thought and management principles for combating desertification and defines a three-step strategic objective and measures up to 2050. The programme works out the zones and categories for combating desertification in China in accordance with the types of desertification and the practicalities of combating desertification. It divides the desertified land into 3 zones: a zone of integrated sandification prevention and control; a zone of serious soil and water erosion on the Loess Plateau; and a zone of degraded natural grassland rehabilitation in the north. The programme categorizes the project to combat desertification into 3 levels: key national projects; regional demonstration projects; and local, non-governmental and private projects. The programme defines a whole society participating desertification combating system, with the key national projects as core; establishes and improves a policy mechanism for combating desertification; develops a system for combating desertification on a sound legal basis; intensifies a scientific support framework for combating desertification; strengthens and builds the capacity for combating desertification; establishes and improves a monitoring and early warning system and a drought-relief system; introduces and promotes the desertified zones to establish such immediate priority programmes as sustainable industrial system; and develops supporting measures accordingly.

COOK ISLANDS

In 2004, the National Environment Service produced the National Environment Strategic Action Framework (NESAF) 2005-2009 to support the National Sustainable Development Plan (NSDP). The NESAF continues to provide and guide activities and strategies related to land degradation programmes.

The Cook Islands does not have a national UNCCD programme and coordinator. However, strong sectoral programmes on land degradation and drought related programmes are being implemented which fall within and address concerns of the UNCCD.

To further progress implementation of the UNCCD, government will need assistance to establish a National Land Degradation Programme with dedicated resources to effectively implement across all sectors.

The National Environment Service is preparing to formulate its National Action Plan (NAP). Having a NAP will further strengthen land degradation activities already suggested under the NESAF. The NAP will address priority areas such as biodiversity, climate change impacts and adaptation, agricultural land use, wetlands and drainages, coastal and foreshore development and protection, housing development, water catchment areas and streams, inland, makatea, and

coastal forests, aggregates mining and quarrying, as well as waste management, research and technology development, education, training and awareness, knowledge, data and information management, and financial mechanisms.

Land and resource use and management have emerged as principal issues due to competition to use the limited resources to support the growing national economy. Changes are also being seen in patterns of land areas being developed as development pressure increases. Between 2002 and 2004, 34% of developments on Rarotonga were concentrated around the foreshore areas and 37% were on sloping lands.¹ During the period 17% of these developments also required EIA considerations.² Diminishing agricultural or arable lands are recognisable on Rarotonga as there is a shift towards tourism type activities.

Cyclones in 2004 and 2005 caused major damage to coastlines and properties on Rarotonga and the outer islands. The Cook Islands is implementing several projects to lessen future disaster damage through institutional strengthening exercises, capacity building and policy changes.

Limited availability of land for waste disposal and management concerns and a growing awareness of negative impacts from pollution and contamination of resources have pushed the management of waste, chemicals and hazardous materials to the fore as priority issues for the Cook Islands.

Water security has emerged as a concern in the outer islands especially in the Northern Group. On Rarotonga, the biggest challenge facing government is the growing demand for water. It is also important that a national watershed and forestry management plan is developed to guide watershed development and forestry activities. There is need to develop and implement a community awareness and participation programme for maintaining healthy watersheds.

Since 2004, the Ministry of Marine Resources, the National Environment Service and the Ministry of Health have implemented programmes for conducting water quality tests and continuing monitoring of nutrient levels in Rarotonga's lagoon and waterways.

The key challenge for the Cook Islands biodiversity programmes is the implementation of the NBSAP. A recent national workshop on climate change awareness called for the development and implementation of a national climate change policy that will take into effect adaptation options and mitigation of land degradation.

The government, in conjunction with the Asian Development Bank, has commissioned the development and implementation of an integrated and sustainable 20 year preventive infrastructure master plan. Sub-sectors being considered include transport (roads, airports, ports and harbours), water, sanitation, solid wastes, electricity and energy, telecommunications, cyclone shelters and maintenance facilities.

There are gaps in terms of dedicated mechanisms or processes including policies for the monitoring the rate of development of resources and land use activities, even on Rarotonga.

The Cook Islands continues to collate baseline data and establish databases for future reference. This is a priority area and has been identified as a national constraint due to the lack of quality data and functional databases. Furthermore, the need to translate data into spatial information

¹ Nia (2006)

² Nia (2006)

context (i.e. geographic information systems) to assist with decision making at all levels has been highlighted widely as a key component for alleviating land degradation.

The limited capacities in local technical personnel and support facilities combined with weak data and information management capabilities will hamper future progress in planning biodiversity, climate change and land degradation programmes, let alone meeting the obligations of all three Conventions.

Meanwhile, the Cook Islands is preparing to address some of its land use problems under the Portfolio project to implement a Medium Size Project on Capacity Building for Sustainable Land Management. It will enable the Cook Islands to strengthen the policy, regulatory and economic incentive frameworks to facilitate wider adoption of sustainable land management practices across sectors.

Preliminary results from the National Capacity Self Assessment thematic assessments suggested the following key areas of capacity constraints and needs: limited numbers of local technical personnel and researchers; limited enforcement capacities; identified key sectors lack appropriate legislations, policies and strategies; roles and responsibilities of stakeholders not always clear; weak institutional structures for forestry, water, land use and survey management; limited capabilities of laboratories and research facilities; lack of database on technologies and detailed assessment of technology needs and transfer processes; lack of quality data and poor data management; limited numbers of functioning computer networks and databases; limited trained staff in media educational programmes; and inconsistencies in the levels of resources committed by government and donors for UNCCD initiatives.

The amount of donor contributions to the Cook Islands environment sector was estimated at over NZ\$8.4 million for the period from 2002 to 2005. The Cook Islands Government would like to acknowledge the assistance to its environment and related sectors from New Zealand's International Aid & Development Agency (NZAID), the Australian Agency for International Development (AusAID), the Global Environment Fund (GEF) via the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the South Pacific Regional Environment Programme (SPREP), the Asian Development Bank (ADB) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), the South Pacific Applied Geoscience Commission (SOPAC), the World Meteorological Organization (WMO), the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO), the National Institute of Water and Atmospheric Research of New Zealand (NIWA), the University of the South Pacific (USP), the Secretariat of the Pacific Community (SPC), the Food and Agriculture Organization of the United Nations (FAO), Japan (the Japan International Cooperation Agency (JICA)), the European Union and the Canadian International Development Agency (CIDA).

INDIA

India has an area of about 228.3 m ha (29.6% of total land area of 328 m ha) comprising arid (50.8 m ha), semi-arid (123.4 m ha) and dry sub-humid (54.1 m ha). India is rich in biodiversity; Eastern Himalayas and Western Ghats are recognized internationally as two biodiversity hotspots. India's forests are classified into tropical, sub-tropical, temperate and alpine categories. Climate of the country is tropical monsoon and varies from 100 mm in arid areas to more than 3,600 mm in wet areas of North-Eastern States. Temperature varies from less than 10°C during winter to 45°C in summer. In arid and semi-arid regions, the temperature goes up to 45° to 48°C.

Large areas are susceptible to water and wind erosion, salinisation, water-logging, drought and desertification etc. Land degradation is aggravated by high biotic pressure - human population (1,027 m) and livestock population (470 m). Biotic pressure, and erratic and uncertain amount of rainfall are the major causes behind desertification. The dryland regions are more susceptible to frequent droughts which accelerate the process of desertification.

In India various steps have been taken to tackle the problem of land degradation. Many centres/stations were established to check wind erosion and aggravation of desert conditions. Systematic efforts were initiated way back in Second Five year Plan (1956-61) to contain the problem. In 1959, central Arid Zone Research Institute was established at Jodhpur which was strengthened in subsequent years to deal and provide solutions of major problems related to desertification. The projects and schemes started during Second Five Year Plan were further expanded during Fourth Five year Plan (1969-74) India has been making constant efforts to develop short-term and long-term strategies in its Five Year Plans for tackling the problems of drought, desertification, land degradation and deforestation.

- 2.1. Focal Point Institution: Ministry of Environment and Forests
- 2.2. Status of NAP: prepared and submitted to UNCCD Secretariat
- 2.3. Member of SRAP/AP:

Name of Sub Regional and/or Regional Cooperation Framework: Joined South Africa Sub-Regional Action plan in August. 2004.

Six thematic programme components from Asian Regional Action Programme have been included and implemented.

I TPN-1

Desertification Monitoring and Assessment. Space Application Centre is the National Task Manager.

II TPN-2

Agroforestry and Soil Conservation in Arid, Semi-arid and Dry Sub-humid Areas. CAZRI is the National Task Manager and the Host Institute.

III TPN-3

Range and Pasture Management.

IV TPN-4

Water Resources Management for Agriculture in Arid, Semi-arid, Dry sub-humid areas. Ministry of Water Resources is the National Task Manager

V TPN-5

Drought preparedness and Mitigation in the context of climate change.

VI TPN-6

Strengthening Planning Capacities for Drought management and controlling Desertification.

2.4. Composition of the National Coordinating Bodies (NCB):

Various Ministries under Government of India have been identified and included in the composition of the National Coordinating Bodies (NCB) as given below:

1. Ministry of Environment and Forests, New Delhi (MoEF).
2. Ministry of Agriculture (MoA).
3. Ministry of Rural Development (MoRD).
4. Planning Commission.
5. Ministry of Water Resources (MoWR).
6. Ministry of Panchayat Raj.
7. Ministry of Non-conventional Energy Sources (MNES).
8. Ministry of Law and Justice.

2.5 Total number of NGOs accredited to the process: 47

An NGO National Coordinating Committee on desertification has been established.

A large number of NGOs support (47 No) and participate in the programme. About 10 million ha of wastelands in the common property regimes have been regenerated through the efforts of NGOs and people. National RIOD-INDIA set up in 1995, is a wide network of NGOs from all States divided into 5 regions-Northern, Eastern, Western, North-Eastern and Southern. It has large number of NGOs from these regions as its members. RIOD-INDIA is actively involved in issues such as empowerment of women, assisting in providing micro-credits for alternate employment, generating/assisting with seed money for taking up eco-regeneration programmes, promoting awareness on issues concerning desertification etc. Names of major NGOs involved in the programme are given below:

1. Adarsha Seva Sangathana (ASS), Bhubaneswar, Orissa.
2. Agha Khan Rural Support Programme, Gujrat.
3. BAIF Development Research Foundation.
4. Bhoruka Charitable Trust (BCT), Churu, Rajasthan.
5. Development Group, Pune.
6. Disasster Mitigation Institute, Ahmedbad.
7. Good Social Work Centre, Maduari.
8. Jana Vikas Samiti, Andhra Pradesh.
9. Kalensar Vikas Samiti Jodhpur.
10. MYRDADA, Bangalore.

11. National Tree Growers Cooperative Federation.
12. Rajasthan Pradesh Bharat Sewak Samaj, Jaipur.
13. Shanti Maitri Mission Sansthan, Rajasthan.
14. Society for Promotion of Wastelands Development, New Delhi.
15. Tamilnadu Environment Council, Ceda Trust,
16. Tata Energy and Resource Institute (TERI), New Delhi.
17. Watershed Support Services and Activities Newtwork (WASSAN).

Besides RIOD-NGOs, Capacity Building Organization (CBO) and Civil Societies are actively engaged in programmes aiming at empowering of the community in general and women in particular for ensuring sustainable livelihood and consumption.

2.6 Total number of acts and laws passed relating to the UNCCD:

A number of policies, acts and laws have been passed and adopted in India. In line with principles 16 and 17 of Agenda 21, the Government of India, Ministry of Environment and Forests adopted the national conservation strategy and policy statement on environment and development in June 1992. The strategy and policy statement lays down, inter-alia, comprehensive action points in respect of sectors such as agriculture, irrigation, animal husbandry, forestry, energy generation, industrial development, mining and quarrying, tourism, transportation and human settlements to ensure that conservation and enhancement of the environment is taken due care of, while achieving sustainable development.

Various acts and laws relating to UNCCD activities are given below:

1. Biodiversity Act, 2002.
2. Constitutional Amendments (73 Amendment) of 1992 and State Pachayat Raj Acts.
3. Disaster Management Act.
4. Environment Protection Act, 1986.
5. Forest Conservation Act, 1980.
6. Land Acquisition Act.
7. River Boards Act, 1956.
8. Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988.
9. Wildlife Protection Act.

2.7 The Consultative Process

1. Number of partnership agreements that have been concluded and/or are being initiated within the framework of the UNCCD – Nil
2. List of consultative meetings on UNCCD implementation – Nil
3. Name of country which has taken over the role of Chef de file- Nil

2.8 Name up to 10 projects currently under implementation which are directly or indirectly related to the UNCCD:

The Ministry of Environment and Forests, Government of India is the nodal agency and National Coordinating Body for participation in UNCCD as representative of Government of India. For major land use, the responsible Ministries and Departments are as under:

- Ministry of Agriculture and Cooperation - 142 mha.
- Ministry of Environment and Forests - 67 mha.
- Ministry of Rural Development.
- Ministry of Water Resources

Departments

- Indian Metrological Department (IMD).
- National Remote Sensing Agency (NRSA).

Research Support: -

- Ministry of Science and Technology.
- Indian Council of Agriculture Research (ICAR).
- Indian Council of Forestry Research and Education (ICFRE).
- Indian Council of Social Science Research (ICSSR).
- State Agriculture Universities.

Above-mentioned Ministries, Departments and institutions have been utilized for effective implementation of programmes and objectives of UNCCD in India.

National Policy and Coordination Committee (NPCC) under the chairmanship of Secretary, Ministry of Environment and Forests comprises representatives from related Ministries, departments, State Governments, institutions and NGOs etc.

Targets of Tenth Five Year Plan

1. Reduction of poverty ratio by 5% by 2007 and 15% by 2012.
2. Providing gainful employment.
3. All children in school by 2003, all children to complete 5 years of schooling by 2007.
4. Reduction in gender gaps in literacy and wage rates by at least 50% by 2007.
5. Reduction in the decadal rate of population growth to 16.2% (2001 to 2011).
6. Increase in literacy rate to 75% during the 10th Plan period (2002-07).
7. Infant mortality ratio to be reduced to 2 per 1000 live births by 2007 and 1 by 2012.
8. Increase in forest and tree cover to 25% by 2007 and 33% by 2012.
9. All villages to have sustained access to potable drinking water within the 10 Plan period (2002-07).
10. Cleaning of major polluted rivers by 2007 and other notified stretches by 2012.

Integration of UNCCD with long-term National strategies and priority

National Action Programme under CCD would be integrated with long term strategies and priorities of the country for sustainable natural resource management.

A Twenty Five Years Perspective Plan for Development of Rainfed Areas (1997-2022) has been developed in India.

The Working Group for formulation of 10th Five-Year Plan (2002-2007) recommended twenty year projections (2002-2022) for watershed development, rainfed farming and natural resource management.

A number of major programmes which have been developed and are being continued are as follows:

1. National Afforestation Programme.
2. Drought Prone Area Programme (DPAP).
3. Desert Development Programme (DDP).
4. National Watershed Development Programme for Rain-fed Areas (NWDPRRA).
5. Indira Gandhi Nahar (Canal Project).
6. Soil and water conservation in the catchment of River Valley Projects.
7. Development of Ravine areas.

Development of degraded lands:

Various watershed Development Programmes have been under implementation by mainly three Ministries-Ministry of Agriculture, Ministry of Rural Development and Ministry of Environment and Forests for development of degraded lands. These programmes are:

- National Watershed Development Project for Rainfed Areas (NWDPRRA).
- Soil conservation for enhancing productivity of degraded lands in the catchments of River Valley Project & Flood Prone Rivers (RVP & FPR).
- Reclamation of Alkali Soil (RAS).
- Watershed Development Project in Shifting Cultivation Areas (WDPRRA).
- Drought Prone Area Programme (DPAP).
- Integrated Wasteland Development Programme (IWDP).
- National Afforestation & Eco-development Project (NAEP).

In addition two externally aided projects (EAPs) are also taken up.

- Indo-German Bilateral Project on Watershed Management (IGBP-WM).
- World Bank assisted Project on Sodic Land Reclamation, Uttar Pradesh.

Scheme-wise achievements since inception up to march 2005 are as follows:

Ministry	Programme	Degraded lands developed	
		Area (lakh ha)	Expenditure (Rs. Crore)
Ministry of Agriculture	NWDPRRA	79.34	2397.56
	RVP & FPR	60.87	1894.17
	WDPRRA	3.18	226.43
	RAS	6.59	96.64
	EAPs	23.63	4756.26
Ministry of Rural	DPAP	26.29	1742.06
Development	DDP	14.70	1301.01
IWDP		61.96	1310.20
Ministry of Environment	NAP	8.77	852.89
	Grand total	285.33	14577.32

Thus since inception up to March 2005, an area of 28.533 million ha has been developed with an expenditure of Rs. 14577.32 crore.

The working group on Watershed Development, Rainfed Farming and Natural Resource Management for Tenth Plan constituted by Planning Commission has estimated that 88.5 million ha would need development {about 12.00 m ha during Tenth Plan (2002-07) and about 76.50 m ha in the Eleventh Plan (2007-12), Twelfth Plan (2012-17), and Thirteenth Plan (2017-22)}.

The main schemes and programmes implemented for the development of degraded lands and rainfed areas are:

Soil conservation for enhancing the Productivity of degraded lands in the catchments of River Valley Project & Flood Prone River.

The centrally sponsored project based scheme is being implemented through Macro Management of Agriculture since 2000. The scheme aims at (i) prevention of land degradation by adoption of a multi-disciplinary integrated approach of soil conservation and watershed management in catchment areas, (ii) Improvement of land capability and moisture regime in watersheds, (iii) promotion of land use match land capability, (iv) prevention of soil loss from the catchments and to reduce flood peaks and volume of runoff.

Presently, the programme is implemented in 53 catchments having total catchment area of 110.11 m ha falling in 27 States of India. In this programme, all types of land, viz, agriculture, waste and forest are treated in an integrated manner with suitable package of treatment.

Monitoring of the scheme:

There is a Standing Committee under the chairmanship of Additional Secretary MoEF to review the programme on regional basis annually. At State level, the progress is monitored by project level implementation committee and State level implementation committee.

The evaluation studies for 22 catchments have been evaluated by outside agencies like Administrative Staff College of India, Hyderabad, Agriculture Finance corporation, New Delhi, Centre for Management and Development, New Delhi, Institute of Resource Development and Social Management, Hyderabad, Institute of Economic Growth, Delhi and National Remote Sensing Agency, Hyderabad.

The evaluation studies covering 22 catchments revealed that watershed interventions under the programme have proved effective as given below:

- Yield of agricultural crops increased from 2.7 to 76% in Matatila, Nizamsagar and Ukai catchments.
- Cropping intensity increased ranging from 85% to 115% in Matatila, Nizamsagar and Ukai catchments.
- Sediment production rate has been reduced ranging from 17% to 94% in Matatila, Nizamsagar and Ukai catchments.

- Runoff peak reduced from 46.6 to 1.6% in Sahibi catchment.
- Due to ground water recharge, the water table in wells increased from 1 to 2.5 meter in Matatila, Nizamgarh and Ukai catchments.
- Employment generation was increased from 2.0 to 7.9 lakh man-days in Matatila, Nizamsagar and ukai catchments.

Since inception of programme and upto 2004-05, and area of 6.097 million ha has been treated with an expenditure of Rs. 1894.16 crores.

Reclamation of Alkali Soils:

The programme was launched in Seventh Five Year Plan. This programme is now implemented through Macro management of Agriculture. The programme objectives are; (i) reclamation of the lands affected by alkalinity and improvement in land productivity by growing salt tolerant crops and horticulture plantations, (ii) increasing the production of fuelwood and fodder, (iii) improving capacity of extension workers and beneficiaries and (iv) generating employment opportunities.

About 70.00 lakh ha (7.00 million ha) area is affected by salt problem and out of this about 35.81 lakh ha area suffers from alkalinity in the country. Such alkali affected areas are mainly located in 11 States:

The main components of the programme covered under the project are:

- (a) Isolated approach: (i) survey, planning and awareness campaign and training of beneficiaries and staff (ii) formulation of water user group, site implementation committee, (iii) providing soil amenders.
- (b) Projectized approach: (i) providing soil amenders, (ii) boring and installation of pump sets, (iii) providing inputs like seed, fertilizer, insecticides, pesticides, green manure seeds, (iv) plantation of fruit trees/fuelwood/fooder species and (v) maintenance of plantation area for three years.

The programme progress is reviewed in the meeting of Standing Committee (Government of India) besides periodic visit of regional, State and national level functionaries to project items.

Positive impact of the scheme was observed in areas of Haryana and Uttar Pradesh; ph decreased from 9.4-10.5 to 8.9-9.2, organic carbon increased from 0.15 to 0.38%, paddy yield increased from 19 to 41 quintals per ha, 76% farmers' income increased and additional employment was created for them.

Since inception and upto 2004-2005, an area of 6.59-lakh hectare has been reclaimed with expenditure of Rs. 96.64 crores.

All India Soil & Land use Survey:

The organization has been conducting Rapid Reconnaissance Survey (RRS) for catchments to be treated in the project area of River Valley Projects & Flood Prone Rivers. Detailed soil survey, Land Degradation Mapping and Evaluation of various Watershed Development Programmes of the country have also been conducted. Major achievements are as follows:

Programmes		Areas Surveyed (March 2005)	Area to be surveyed
1.	Rapid Reconnaissance Survey	195.50 m.ha	104.00 m.ha
2.	Detailed Soil Survey	13.50 m.ha	25.20 m.ha
3.	Land Degradation Mapping Development of Digital	64 districts	522 districts
4.	Watershed Atlas of India	Completed	to be published
5.	Short training courses on soil survey for user departments	11 courses	two courses every year

Soil Conservation Training Centre, Damodar Valley Corporation, Hazaribag, Harahan:

The major mandate of Soil conservation Training Centre, Damodar Valley Corporation, Hazaribagh is to organize training courses in different areas of soil and water conservation.

Since inception and upto March 2005, 1,685 farmers, Sarpanches, Gram Pradhans of village level institutions have been trained in the field of integrated watershed management. During the same period, 2,968 officials working in different States in soil conservation programmes have been trained covering various aspects of the subject.

Watershed Development Project for Shifting Cultivation Area:

The project is continuing in seven North Eastern States, viz, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura. The objectives of the project are: (i) to protect the hill slopes of Jhum areas through soil and water conservation measures on watershed basis and to reduce further land degradation, (ii) encourage relocation of Jhumia families by providing developed productive land and improved cultivation packages, (iii) to improve the socioeconomic status of Jhumia families through household/land based activities, and (iv) to mitigate the ill effects of shifting cultivation by introducing appropriate land use as per land capability and improved technologies.

The project is being implemented through government and non-government organizations, scientific and technical institutions in the watersheds where a minimum of 25% area is under shifting cultivation.

The programme implemented and evaluated in two States, viz, Nagaland and Tripura, revealed the following:

- 30% decrease in shifting cultivation area due to adoption of permanent/settled cultivation.
- About 27% Jhumias have abandoned jhum practice.
- Sustainable increase in productivity of agriculture crops, horticulture crops, livestock, inland fisheries etc was observed.

- Overall income of Jhum families increase by 25%.
- Cropping intensity increase by 40%.
- Active participation and contribution of the watershed community for development of watershed was found effective.
- Watershed Associations/Panchayats helped in promoting participatory approach.

Since inception and upto the end of 2004-05, an area of 3.18 lakh ha has been developed with an expenditure of Rs. 226.43 crores.

Indo-German Bilateral Project on watershed Management:

The Indo-German Bilateral Project was launched in 1989 as technical cooperation between Federal Republic Ministry, German Technical Cooperation, and Ministry of Agriculture in the GOI. The project continued for 16 years and closed on 30 June 2005.

Since inception, a total of 37 sediment monitoring stations (SMS) and 5 hi-tech weather stations have been established in 12 different States, i.e., Andhra Pradesh, Bihar, Gujarat, Himanchal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu, Uttaranchal and Uttar Pradesh. 345 staff members and 62 senior/junior staff working for soil and water conservation programmes have been trained.

Sodic Land Reclamation Project:

The World Bank assisted project was launched in April 1999 in Uttar Pradesh (State has about 11.00 lakh ha area with problem of alkalinity). The objectives of the project are: (i) to reverse the process of sodicity, (ii) development of sodic land through sustainable reclamation package, and (iii) prevention of further sodicity and contributing significantly towards poverty alleviation in selected areas.

The project is implemented in ten districts of Uttar Pradesh. The major components include: identification, survey and delineation of sodic soils, on farm development, provision of assured irrigation, application of soil amenders for reclamation of sodic lands, crop production and plantation, adaptive research, training and technology dissemination and people's participation for sustainability.

At national level, the progress is reviewed by holding quarterly and annual desk review.

Since inception and up to 2005, about 1.57 lakh ha area has been reclaimed under the scheme.

DPAP, DDP & IWDP: Watershed Development Programmes:

Sizable proportion of the total land area of the country falls under arid, semi-arid and dry sub-humid categories and is either subject to desertification, or identified as drought prone watersheds. Ministry of Rural Development is implementing special area development programmes as instruments of poverty alleviation in drought prone areas, and desert and rainfed areas in a participatory mode. Following programmes of the Ministry of Rural Development are being implemented in partnership with State Governments.

1. Drought Prone Areas Programme (DPAP).
2. Desert Development Programme (DDP).
3. Integrated Watershed Development Programme (IWDP).

Department of Land Resources (DOLR), Ministry of Rural Development has the mandate to develop degraded area of about 153 million hectares under these three programmes. These programmes aim to tackle: (i) continuous degradation of land, (ii) decreasing vegetative cover, (iii) soil erosion, (iv) depleting water resources, (v) decreasing productivity of crop (vi) livestock and human resources, (vii) and outmigration of both human and cattle populations in times of stress.

Guiding approach for DPAP, DDP and IWDP

Development of lands, water and vegetative resources on watershed basis.

Treatment of watershed to include all categories of lands including private, village commons, revenue and degraded forest lands.

- A micro-watershed with about 500 ha taken up as a basic unit for management and development with total watershed treatment approach.
- Planning and implementation of watershed development programme with the total participation of the beneficiaries through community based organizations for community empowerment.
- Women empowerment especially by creating alternative livelihood options.
- Developing sustainable production system, community based management of assets and equitable sharing thereof.
- Creating awareness including dissemination of information.
- State and district level committee to monitor the programmes with special emphasis on social audit.
- Capacity building and training at various levels of stakeholders.
- Independent evaluation studies on regular basis.

Role of Non-Government organizations (NGOs): Watershed Development Programmes underline an active role for NGOs in order to ensure implementation of programmes in a participatory mode.

The role of Panchayati Raj Institutions in watershed programmes has become pivotal in the implementation of developmental programmes at the grass root level.

Drought Prone Areas Programme (DPAP):

The Rural Works Programme (RWP) initiated in 1970-71 was redesignated as Drought Prone Areas Programme (DPAP) in 1973-74 to focus solely on problems of drought prone areas.

Since the adoption of watershed approach in the year 1995-96 and till 2005-2006, 24,363 projects have been sanctioned to treat 12.2 million hectares of drought prone area.

The Union Government sanctions new projects every year taking into consideration primarily the DPAP coverage in the States, performance of the on-going projects, socio-economic condition of the persons inhabiting the programme area, etc. During the Year 2005-06, 3,000 new watershed projects have been sanctioned under DPAP to treat an area of 1.5 m hectares at a total cost of about US\$ 200 million over a period of five years.

Treatment of Area: The area treated under DPAP is given below:

(i)	Under Sectoral approach	From inception till 31.3.1995 5.7 m ha.
(ii)	Under Watershed approach	Since 1995-96 to 2004-05, about 5.8 m.ha

Financial: The total committed outlay for these 24,363 projects (sanctioned from 1995-96 to 2004-05) was US\$ 1,250 million out of which nearly 40% has been spent.

Desert Development Programme (DDP)

DDP was launched in 1977-78 to tackle special problems of desert areas. The basic objective of the programme is to minimize the adverse effect of drought, and to control desertification through rejuvenation of natural resource base of the identified desert areas. The programme also aims at promoting overall economic development and improving the socioeconomic conditions of the resource poor and disadvantaged sections of people inhabiting the programme areas.

DDP is under implementation in 235 Blocks of 40 Districts of 7 States having coverage of about 45.7 m hectares.

Cost Norms and Funding Pattern: The Central share for treatment of areas under different types of eco-systems under DDP was as under up to 31.03.1999:

Hot Arid Non Sandy Areas	75%
Hot Arid Sandy Areas	100%
Cold Arid Areas	100%

With effect from 1 April 1999, the programme is being funded on the basis of 75:25. sharing pattern between Central and State Governments. From 1.4.1995 till 31.3.2000, the cost of each project ranged between Rs. 22.50 lakhs to Rs. 25 lakhs. With effect from 1.4.2000, a uniform rate of Rs. 30 lakh per project has been prescribed.

The Union Government sanctions new projects every year taking into consideration primarily the DDP coverage in the States, performance of the on-going projects, socio-economic conditions of the people inhabiting the programme area, etc. During the year 2005-06, 2,000 new watershed projects have been sanctioned under DDP to treat an area of 1 m ha at a total cost of US\$ 150 million over a period of five years.

Extent of area treated under DDP so far is given below:-

From inception till 31.3.1995	5.15 lakh ha.
From 1.4.1995 till 31.3.2005	29.30 lakh ha.
Total	29.45 lakh ha.

Financial: The total investment committed for 13,476 projects (sanctioned from 1995-96 to 2004-05) is about US\$ 910 million, out of which, an amount of US\$ 400 million has been spent.

Integrated Wasteland Development Programme (IWDP):

IWDP was launched in the year 1989-90 to develop the wastelands on watershed basis to strengthen the natural resource base, and to promote overall economic development of the resource poor and disadvantaged sections of people inhabiting the programme areas.

The programme has a treatable coverage of about 33 million hectares of wasteland. The IWDP is implemented in those degraded lands which are not identified under DPAP. The programme is being implemented in 403 districts of 28 States.

Since the adoption of watershed approach in the year 1995-96 and upto 2004-05, 885 projects have been sanctioned to treat 6.2 m ha of wasteland area.

Financial: The total investment committed for these 885 projects (sanctioned from 1995-96 to 2004-05) is about US\$ 935 million. Out of this an amount of US\$ 370 million has been spent.

Poverty Alleviation:

Rural Poverty alleviation: Policies and programmes have a direct bearing on improvement of employment and livelihood opportunities in rural areas. The Integrated Rural Development Programme (IRDP) started in 1978-79 for providing assistance to rural poor in the form of subsidised bank credit. In 1999, the IRDP and other allied programmes were merged, and a single programme, the Swarnajayanti Gram Swarozgar Jojana (Golden Jubilee Village Selfemployment Scheme) was launched. This programme aims at:

- Microenterprise development in rural areas, with emphasis on organizing the rural poor into self-held groups;
- Capacity building;
- Planning of activity clusters;
- Infrastructure development, technology;
- Credit and marketing linkages.

Jawahar Rozgar Yojna (Jawahar Employment Scheme) has been one of the important wage employment schemes for rural areas. Over 47 percent of the employment generated benefited the marginalized sections. The share of landless labourers among the beneficiaries was 36%. The Jawahar Rozgar Yojna (JRY) was renamed as Jawahar Gram Samridhi Yojna (JGSY) during 1999. In 2001, it was merged with other similar schemes like Employment Assurance Scheme (EAS) and Food for Work Programme and came to be known as Sampoorna Gramin Rozgar Yojna (Total Village Employment Scheme). The basic aim of the scheme remains the generation

of wage employment, creation of durable economic infrastructure, and provision of food and nutrition security to the poor.

Urban Poverty alleviation: Several schemes to generate employment opportunities in urban areas were launched, such as Nehru Rojgar Yojna (1985), Urban Basic Services for Poor (1990) and Prime Minister's Integrated Urban Poverty Eradication Programme (1995). In 1997, Swarna Jayanti Shahri Rozgar Yojna (SJSRY) (Golden Jubilee Urban Employment Scheme) was launched. This scheme aims to provide gainful employment to the urban unemployed or underemployed poor, by encouraging them to set up self-employment ventures or by providing wage employment by utilizing their labour for construction of socially and economically useful assets. Urban Self-Employment Programme (USEP) and the Urban Wage Employment Programme (UWEP) form the two major components of SJSRY with focus on women participation.

More than 5,11,000 persons have been provided employment (by March 2004) through setting up of micro enterprises and about 6,00,000 persons provided skill upgradation in various commercial activities. More than 30,000 women self-help groups have been formed and close to 1,00,000 women have benefited from the scheme.

The absolute numbers below the poverty line declined by 60 million heads between 1991-92 and 1999-2000.

Various programmes that deal directly with the poverty alleviation have to simultaneously cover a number of social sector issues such as health care, literacy, empowerment of women, and improved governance. Accordingly, the Government of India has launched a number of initiatives covering a range of sector subjects. Some of these are: -

- (i) **Rural water supply:** The major thrust under the Rural Drinking Water Programme is on water conservation, water harvesting, water recharge and sustainability of the drinking water sources. A comprehensive action plan for covering all rural habitations in the country with provision of potable drinking water has been prepared.
- (ii) **Sanitation and Hygiene:** The Restructured Central Rural Sanitation Programme (RCRSP), which is community led and people oriented, aims to provide adequate sanitation facilities to the rural poor, and generate awareness about health education. A Rural School Sanitation Programme has also been introduced. Total sanitation campaign with active NGO participation is being implemented.
- (iii) **Rural Infrastructure:** Jawahar Gram Samridhi Yojna (JGSY) provides demand driven rural infrastructure at the village level. It is implemented by Gram Panchayats to enable village community to create assets.
- (iv) **Education:** The Tenth Five-Year Plan envisages;
 - Provision of one teacher for every group of 40 children for primary and upper primary schools.
 - Opening of primary school/alternate schooling facility within 1 km of every habitation.
 - Provision of free text books to all SC/ST (Scheduled Caste and Scheduled Tribe) children and girls at primary and upper primary levels.

- (v) **Health:** In social development programmes, it is one of the important aspects. The Tenth Five Year Plan focuses on the reorganisation and re-structuring of existing health care infrastructure to facilitate adoption and delivery of indigenous system of medicine and healthcare services at primary, secondary and tertiary levels.

All the above-mentioned programmes are implemented in collaboration with State Governments, local self-governments and the civil society.

Being acutely aware of the challenges in addressing the task of combating poverty, the 10 Five Year Plan fixes enhanced targets for poverty alleviation, i.e., a reduction in the poverty ratio by 5% points by 2007, and 15% points by 2012.

Afforestation Programme:

National Forestry Action Programme (NFAP) emphasizes to take immediate steps for sustainable development of forests. It aims to rehabilitate and increase the productivity of degraded forest, and also to increase the area under forest and tree cover to make it 33% of the total area of the country. The degraded/open forests are to be rehabilitated to take crown density above 40%, and the status of scrub forests is to be improved. According to NFAP, forest area of about 60 mha will be brought under afforestation/plantation/regeneration in the next 20 years. This is intended to be achieved by:

- (a) Improvement in forest cover density: about 31 mha.
- (b) Plantation on non-forest and farm lands: about 29 mha.

About 64 mha area of the country is not available for plantation activity due to reasons of either being under habitation, industries, water bodies, snow etc. The land use categories of the remaining 264 mha are as follows:

Cultivated land	142 mha
Forest land	67 mha
Fallows	24 mha
Pastures	12 mha
Tree groves	3 mha
Cultivated wasteland	16 mha

The cultivable lands comprising fallows, pastures, groves and wastelands constitute 55 mha, of which about 44 mha is estimated to be in the degraded condition. About 60% of 44 million (25.4 mha or say 25 mha) may be available for tree plantation.

The area for plantations would also be available from the area under agriculture lands.

Agriculture land

Irrigated	40 mha
Un-irrigated	102 mha
Total 142 mha	142 mha

About 4 million ha agriculture land (notionally) may also be assumed to be available for tree planting activities. Thus following area will be available for planting activities outside forest areas.

Non forest land	25.00 m.ha.
Agriculture land	4.00 m.ha.

Of the total degraded forest land (31 mha) and non-forest land (29 mha), NFAP has given the following estimates:

	Degraded Forest Land	
	Target for 20 year (mha)	Annual target of plantation (mha)
(a) with natural rootstock	15.5	0.775
(b) with depleted rootstock	15.5	0.775
(c) totally degraded and treeless	25.0	1.250
(d) tree planting under agroforestry/farm forestry	4.0	0.200

Agroforestry

Agroforestry system has been recognised as an important land use system in India where land whether for sustained essential production of goods, e.g., food, firewood, timber, fodder, oil seeds, industrial materials etc. on a sustained basis or for rural urban dwellings has been a big constraint. In India, various tree-based agroforestry models have been developed, for introduction into different agro-ecological situations. These models have been incorporated in the UNCCD publication entitled “Agroforestry Manual For Asia Pacific Region” by Jagdish Kishwan, K.K. Sharma and S.K. Ratho (Editors) 2005. Tree based agroforestry models for various climatic regions are as follows:

Arid Region:	<i>Acacia nilotica</i> , <i>Azadirachta indica</i> , <i>Ailanthus excelsa</i> , <i>Acacia tortilis</i> , <i>Faidherbia albida</i> , <i>Zizyphus mauritiana</i> and <i>Populus euphratica</i> (for cold desert).
Semi-Arid Region:	<i>Dalbergia sissoo</i> , <i>Eucalyptus spp</i> , <i>Albizia lebbek</i> , <i>Leucaena leucocephala</i> , <i>Mangifera indica</i> , <i>Psidium guajava</i> .
Dry Sub-humid Region:	<i>Tectona grandis</i> , <i>Bamboo</i> , <i>Sesbania spp</i> , <i>Populus deltoides</i> , <i>Gmelina arborea</i> .

INDONESIA

STRATEGIES AND PRIORITIES WITHIN THE FRAMEWORK OF SUSTAINABLE DEVELOPMENT

All strategies in the national action programme (NAP) have been formulated in the National Development Plan 2004. Strategy in forest sector that has been implemented to combat land degradation is sustainable forest management (SFM). One of the policies to achieve sustainable forest management is reflected through forest classification according to its functions: conservation forest, protection forest and production forest. Each forest function has its detailed regulation and it is homogenous throughout Indonesia

Indonesia has put a serious effort in rehabilitating degraded land through reforestation and aforestation, including the Forest and Land Rehabilitation Programme (RHL) and the National Movement on Forest and Land Rehabilitation (GNRHL) which was launched by the President of the Republic of Indonesia in Yogyakarta in 2003, a year after the NAP of Combating Land Degradation (CLD) in Indonesia was adopted. The strategy of combating land degradation in Indonesia is integrated into the sectoral strategies of agriculture, fishery, and forestry where its revitalization programme was re-iterated also by Indonesian President in June 2005.

The principles of the UNCCD, such as participatory processes and consultative mechanisms, have been put in priority and accommodated in GNRHL/Gerhan as one of the environmental frameworks in Indonesia through involving all stakeholders in all management processes started from planning, implementation, monitoring to evaluation. In this programme the involved stakeholders are central and local government, private sectors, non-governmental organizations (NGOs), community based organizations (CBOs), and key farmers.

1. INSTITUTIONAL MEASURES TAKEN TO IMPLEMENT THE CONVENTION

The Directorate General of Land Rehabilitation and Social Forestry (DG LRSF) is the National Coordination Body (NCB) in Indonesia which was established by the Ministry of Forestry in 2002. The NCB appointed the Directorate of Watershed Management as Indonesia National Focal Point (NFP) in December 2002.

The NCB provides the roles of NFP in combating land degradation and conducting meetings at least once a year before UNCCD sessions (Conference of the Parties, Committee for the Review of the Implementation of the Convention, Committee on Science and Technology) to prepare national report, determine Indonesia's position and carry out internal review of NAP. NCB initiate cooperation programme to combat degraded land at national scale including three target areas of UNCCD. Meanwhile, NFP roles include mobilizing resources, integrating cross-sectoral activities, providing guidelines, and coordinating the provincial and local stakeholders activities.

New initiatives that have been undertaken since the last report on integrating the NAP into the national economic, social development, and environmental protection planning system are implementation of national movements i.e. GNRHL; National Movement on Water Conservation Partnership (GNKPA); Agricultural, Fisheries, and Forestry Revitalization; and new and renewable energy (bio energy).

NFP has taken active role on NCSA (National Capacity Self Assessment) project, which has recommended the establishing of 'coordination forum' among the three Rio conventions (the United Nations Framework Convention on Climate Change, the Convention on Biodiversity and the UNCCD). The report of the NCSA Project has already been published and its action plan will be implemented by each convention.

Empowering of human resources and institutions has not been carried out specifically in regard to NAP both at national and local level due to lack of financial support and inexistence of independent UNCCD secretariat. However, training of human resources in terms of combating land degradation has been carried out occasionally both at national and local level before NAP was adapted.

2. PARTICIPATORY PROCESS IN IMPLEMENTATION OF THE NATIONAL ACTION PROGRAMMES

Participation process has been carried out during the formulation of the NAP and of the National Report through field visit, community meetings, workshops, discussion in the seminars, etc. Stakeholders involved in the NAP preparation process are government (central and local), NGOs, CBOs, universities, research institutions, and private sectors.

Measures to improve the capacity of community participation in land rehabilitation activities, such as social forestry, crop-livestock programme for upland conservation, have been put in top priority, either by Government, NGOs or CBOs.

In NAP implementation through the GNRHL programme, the Government involves the participation of NGOs, CBOs, and private sectors. One of the movement objectives is to generate rural people awareness on the danger of land degradation and in turn encourage them to rehabilitate degraded land. Target area of the movement is 3 million hectares of more than 70 million ha degraded land in Indonesia for the period of 2003 to 2007 and hopefully will generate multiplier effect to all degraded land over the country.

Mechanism of participative monitoring has been established through consultation, networking, field visits, workshop, direct intrapersonal communication, and electronic media. However, the consultation mechanism is not regularly conducted due to lack of scheduling and budgeting constraints

Participatory awareness campaigns that have been conducted dealing with the growing threat to ecosystem, poverty eradication, land degradation prevention, lessons learned and best practices are Planting One Million Trees, Greening Indonesia, Plant Today Harvest Tomorrow, No Forest No Life, Don't Export Smoke, and Combating Illegal Logging.

3. THE CONSULTATIVE PROCESS OF THE NATIONAL ACTION PROGRAMME

The UNCCD secretariat, through the Global Mechanism (GM), has assisted in facilitating the convening of a workshop on NAP formulation and validation, formulation of the South-East Asia subregional action programme (SRAP), preparation of the National Report, and Partnership Mobilisation. The activities have led to consultative process among stakeholders and agreements on combating land degradation cooperation mostly have been implemented, such as reforestation project in Nusa Tenggara Barat (NTB) province.

Some proposals on combating land degradation in the NAP have been submitted to UNCCD Secretariat and implementing agency such as the United Nations Development Programme (UNDP) and the World Bank in order to get Global Environment Facility (GEF) funding. However, none of them accepted by the respective implementing agency and donors.

Traditional and alternative source of finance has been generated for forest and land rehabilitation and land degradation prevention since the 1970s. The sources are not specifically for NAP implementation since adoption of the NAP is just four years ago (2002).

In order to maintain the exchange of information with regard to internal consultation, networking, trust building, and balance communication is needed to ensure the consultation process is moving ahead.

Although there is no difficulties in communication between the national focal points of GEF and UNCCD, financial support of GEF through its OP#15 has not been benefited to Indonesia due to requirement complexity such as: proposal format; priority of proponent and donor interest; indistinguishable cost standard, time frame, and assistance scheme; should be integrated; and limited information on the progress of submitted proposal.

4. MEASURES WITHIN THE FRAMEWORK OF NATIONAL ACTION PROGRAMMES

Plantation forest, community forestry, private forest, ‘embung’ (small reservoir) management and agroforestry development in East and West Nusatenggara are efforts that have been made to rehabilitate degraded land. Pipe and drip irrigation systems development is a significant investment that has been done in Palu valley, Central Sulawesi. However, the sustainability of these systems was facing a security problem due to high maintenance cost, and low willingness of farmers to pay for operational and maintenance cost.

Measures to mitigate effect of drought based on the weather forecast have also been carried out by Ministry of Agriculture and Public Work.

Natural Resources Database System in general is undertaken by BAKOSURTANAL (National Survey and Mapping Coordinating Agency). In term of forestry resource, Forest Planning Agency (BAPLAN) carried out Forest Resource Accounting (NSDH) as an input for sustainable forest management programme and Directorate General for Land Rehabilitation and Social Forestry (RLPS) identified related data and information on degraded forest and land to implement rehabilitation programme.

Water harvesting through the construction of ‘embungs’, infiltration wells, infiltration ditches (rorak), and application of mulch and organic matter are conducted to achieve a positive water balance (water surplus) in NTB, Nusa Tenggara Timur (NTT) and Central Sulawesi. This effort has to be combined with efficient water use.

Indonesia has a low capacity in developing early warning systems for food security and drought forecasting, particularly at the local level. It has been clearly indicated when starvation disaster occurred in most area of NTT Province for example Lembata. The occurrence of drought and the

failure of crops were not anticipated by the local government and as a consequence the government failed to allocate food at the right time when famine disaster occurred.

So far there is no significant finding to adjust the content of NAP; however, Indonesia has a commitment to review the NAP regularly every 5 years.

5. FINANCIAL ASSISTANCE AND TECHNICAL COOPERATION

Fund for forest and land rehabilitation measures, including afforestation, reforestation, and land rehabilitation, was provided and mobilized by the Government of Indonesia and coordinated by Ministry of Finance and Ministry of Forestry. Sources of these funds consisted of National Budget, Local Budget and Reforestation Fund (DR). A problem arises in budgeting system and fund allocation for related Ministries.

Measures have been taken to ensure access by local stakeholders to the source of fund by giving them information, for example a campaign on GNRHL and GNKPA. Through this campaign, people could get benefit to utilize source of funding by participating in the forest, land, and water rehabilitation and conservation activities.

In the GNRHL, the government played the key role in supplying planting materials while the community contributes in the form of making their land available for the programme, as well as taking the lead in planting. Meanwhile the NGOs and independent organizations, such as universities, participate in monitoring and evaluation of the conduct of GNRHL

Fund from Clean Development Mechanism (CDM) scheme has also been explored and promoted for reforestation in NTB since the eligible land is potentially available. This project is proposed by Provincial Forest Service and facilitated by the Japan International Forestry Promotion and Cooperation Center (JIFPRO); it is still in the stage of formulating Project Design Document (PDD).

Recent developments in the decision of the GEF to include land degradation as a new focal area, GEF's OP#15, were benefited to Indonesia. However, proposals submitted by Indonesia were still unsuccessful in getting funds from the GEF.

6. BENCHMARKS AND INDICATORS

Measures to assess land degradation in Indonesia are conducted by Ministry of Forestry through the inventory of degraded land using standardized and improved method and criteria, satellite images or aerial photograph, and geographic information system technique; the result was produced in the form of digital data and so called "critical land" map. This map is used for prioritizing rehabilitation programmes and carried out throughout the country since 2004.

Land degradation could also be evaluated in the field by inventory of natural springs. For example, in NTB province, the disappearance of natural springs from 726 to 256 remaining at present is likely due to land degradation. Mapping of land slide and flood prone areas and monitoring of land productivity has also been used for identifying land degradation in selected areas.

Based on the inventory, degraded land increased significantly and gives impact on drought and flood problem in most part of dry land in Indonesia. The rate of land degradation attributed to drought and climate change so far has not been evaluated quantitatively, except for isolated cases in research projects. In general, the rate of degradation has been identified qualitatively by increasing frequency of forest and bush fire, extensive area of dead plants due to drought, increasing rate of harvest failure, decreasing number and discharge of natural springs, increasing encroachment of livestock to forest, decreasing livestock population, and increasing areas of abandoned land.

Initial effort has been started by BMG and Ministry of Agriculture to set up early warning systems to mitigate the effect of drought and land degradation. Since the effort is still in the initial state; the process has only been used in the limited area to facilitate better policy.

Benchmarks and indicators for the assessment have been formulated and included in NAP. The Partnership Workshop of UNCCD held in Bogor, Indonesia, in June 2004 revised and produced a new indicative list of benchmark and indicators.

KAZAKHSTAN

1. Land degradation in Kazakhstan exerts serious social and economic influence. The condition of the environment has a direct impact on living standards and health of the population, especially on socially vulnerable segments of the population. Major impacts are:

- Decrease in productivity of agricultural crops as a result of arable lands degradation;
- Decrease in efficiency of and high risk for livestock production caused by pasture degradation and lack of emergency fodder;
- Loss of the individual and national income generating capacity of wildlife management and fisheries in connection with population reduction of target species caused by over-harvesting and habitat destruction;
- Deterioration of drinking water quality and resulting in health problems;
- Shortage of timber and non-timber forest products, especially for local vulnerable groups, and loss of environmental services from forests.

The impacts of land degradation on rural populations increase their vulnerability and drive pressure to further exploit land resources for short-term benefit. At present the process of desertification is marked nearly in all administrative areas of Kazakhstan.

2. Prevention and where feasible reversal of land degradation plays an important role for Kazakhstan's sustainable development. About 43% of the overall population of roughly 15.1 million inhabitants are living in rural areas and the majority of them are dependent on incomes directly or indirectly related to the agrarian sector. The nominal cash incomes of rural citizens are about half of that of urban people. Thus the majority of rural people not only rely on cash incomes from agricultural production, but on in-kind income from household plots' and household flocks' as well as on utilization of natural resources as fish, game and fuel wood. Processes of land degradation and desertification negatively affect productivity and overall crop production, livestock and cattle-breeding productivity. The comparably severe social situation in rural areas is also indicated by the low standard and extent of social and technical infrastructure as well as limited access to secure drinking water.

3. Land degradation gives rise to a series of life-supporting problems of the affected lands. Example are the harmful influence on health and decrease in efficiency of cattle pastured on the degraded pastures, reduction of productivity, and also high vulnerability of agricultural cultures from drought on non-irrigated arable lands due to decrease of humus in the soil structure, soil salinity leading to reduction of productivity of irrigated lands, and degradation of wood resources that reduces an opportunity of stocking up of timber, fire wood and other wood resources. On the other hand, land degradation has arisen due to irrational use of land resources by land users, as well as by large-scale changes, that are frequently out of the influence zone of direct land users. The total economic losses from direct and indirect effects of land degradation in Kazakhstan are estimated in the amount of 93 billion tenge (6.2 billion dollars).

4. The priority problems of land degradation and sustainable land management (SLM) identified in Kazakhstan include:

Loss of soil fertility due to inappropriate land-use practices in rain-fed arable lands;
Inefficient water use, salinization and water logging of irrigated arable lands, caused by deteriorating irrigation and drainage infrastructure and management weaknesses;
Degradation of pasturelands caused by local overgrazing and underutilization of large pasture areas due to giving up of mobile grazing practices, local livestock concentration and catastrophic decline of wild ungulates' populations;
Forest degradation and deforestation caused by illegal logging and wildfires;
Drying out of large areas of the Aral Sea and associated negative consequences;
Local site pollution caused by industrial and military activities.

These problems have in many cases impacts on ecosystem types of global importance and/or affect neighboring countries.

5. The determined problems have underlying causes in the constraints and barriers to SLM consisting of national policy, legal and institutional framework, economic incentives, knowledge and capacity of immediate land-users and responsible officials and in the current stage of monitoring and land management related research.

6. In 2005 the National Coordination Body developed the Programme to Combat Desertification in the Republic of Kazakhstan. The legal rationale for the development and approval of the Programme were: the Concept of Environmental Safety of the Kazakhstan for 2004-2015 and its Action Plan, as well as Indicative Plan of social and economic development of the country. Development of the national action programme (NAP) brought together leading scientists and experts from the ministries, agencies, scientific and research and survey organizations. The NAP provides with a cause analysis and priority action directions to combat desertification, contains a complex of prime and preventive activities. The NAP is called to become a document allowing political decision-makers to effectively allocate means to combat land degradation and to reduce social and economic consequences of desertification.

7. Over the reporting period the Government of Kazakhstan accepted a number of basic acts in the field of SLM. At the moment well developed system of laws on SLM operates in Kazakhstan; unfortunately, the majority of laws have no direct application, therefore development of by-laws at various levels still required. There are some gaps, duplications and contradictions in legislation, besides usually there is a weak application of laws. The legislation

on forest and land resources does not provide a base for joint resources management. Frequent changes in legal regulation and legal uncertainty make the sustainable land management difficult.

8. Certain progress is reached in the area of regional cooperation of Kazakhstan. By the present time the MEP completed a sound work on the development of the Central Asian Countries Initiative for Land Management (CACILM), the primary task of which is development of well-coordinated integrated and complete approach of assistance to the Central-Asian Countries for realization of the UNCCD and development of the all-round National Programme on SLM. The CACILM represents innovative international cooperation of donors to support development and performance of the frame programme at the national level (NPF), aimed at development of all-round and complex approaches to combat desertification through sustainable management of land and water resources as stated in the Global Environment Facility (GEF) Operational Programme on SLM. The NAP represents a brief review of CACILM/NPF on the investment and technical assistance to Kazakhstan for ten years (2005-2015) and simultaneously serves as an important detail of Multi-country Frame Partnership CACILM. This year it is planned to start the first phase of the CACILM/NPF. It is necessary to note, that Kazakhstan on behalf of the MEP has acted as an initiator of the given project and rendered support on all stages of its development.

9. For partnership development in realization of UNCCD the Working Group was established by the MEP, which basic function is interdepartmental coordination and intersectoral cooperation. The given Working Group consists of representatives of the Ministry of Economy and Budget Planning, Ministry of Agriculture (in this case representatives of Committees on Water Resources and Forestry and Hunting Committee), Agency of Kazakhstan on land management, and representatives of NGOs and international organizations. Sessions in this case are organized and carried out by the UNCCD National Coordinator.

10. Since preparation of the Second National Report by Kazakhstan (2002) a great work on realization of the UNCCD was carried out. The purpose of the given report is to show the changes of the last years and efficiency of UNCCD realization in the republic. Certainly, the Government of Kazakhstan and the national coordinating body undertook a number of vital measures for the country development and thus the further development of economy and industry is proposed with consideration of preventive measures from degradation of the environment.

KIRIBATI

This third National Report focuses on the changes that have taken place in relation to causes and effects of land degradation and the response measures initiated by the people and Government of the Republic of Kiribati, hereinafter referred to as Kiribati, to address the factors causing land degradation, their root causes and effects. It also highlights the areas of work that will need to be strengthened.

Since the submission of its first National Report on the implementation of the Convention in 2002, Kiribati has experienced and sought ways to respond to environmental and socio-economic changes that continue to place increasing pressures on the capacity of the land to support and sustain the nation's biological diversity, water and natural resource, people's way of life and

economy. The development of this report coincides with steps taken by the Government of Kiribati to develop a National Action Programme (NAP) as required under the Convention. Although the NAP is just now being developed, a range of related strategies, policies and action plans have been and are being developed that will contribute to addressing the causes and effects of land degradation. This report highlights these initiatives and identifies ways in which the NAP can incorporate these initiatives and establish institutional mechanisms to promote and strengthen integration and collaboration to achieve synergies.

The increasing threats to land degradation from, inter alia, coastal erosion, poor waste management and pollution, rapid population growth in urban areas and economic development activities have not gone unnoticed and left unattended. The government and various national stakeholders have begun initiating strategies, plans and community-based activities to prevent the increase in land degradation and mitigate its effects. International donors and organizations through partnership arrangements, as well as Pacific regional organizations, are supporting these efforts. It is recognized that an increased and sustained effort is needed if improvements are to be realized. This report also outlines some emerging and potential opportunities to identify new partnerships, mobilize resources and make use of available and appropriate technologies and support from the scientific community.

Coupled with the demand for action on the ground, the Government of Kiribati and its national partners are also under pressure to address a host of international and regional conventions, strategies and agendas. All these are placing strain on the country's limited resources and call for a capacity needs assessment to be undertaken to identify priority capacity needs that can be addressed through various interventions.

Kiribati is grateful that the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP) is making it possible for the country to undertake a National Capacity Self Assessment (NCSA) that includes a focus on land degradation issues and the country's obligations under the UNCCD. The NCSA will be the means to identifying the capacities needed for the effective implementation of the NAP and other related national strategies. Kiribati is also grateful that the GEF and UNDP have made it possible for countries to develop their capacities for sustainable land management through the Portfolio Project Approach on Sustainable Land Management. This project is currently being designed and will be closely linked to the NAP and NCSA outcomes.

KYRGYZSTAN

Land degradation¹ is a serious economic, social problem related to environment, which faces Kyrgyz Republic. It directly affects the livelihood of the rural population by reducing the productivity of land resources and adversely affecting the stability, functioning and the resources quality produced by natural ecosystems. The causes of land degradation are multiple, complex, and vary across Kyrgyzstan's regions, but to a greater extent deterioration and exhaustion of land resources is the result of admittedly incorrect and destructive agricultural practices, overgrazing,

¹ Land degradation is defined by the Global Environment Facility as "...any form of deterioration of the natural potential of land that affects ecosystem integrity either in terms of reducing its sustainable ecological productivity or in terms of its native biological richness and maintenance of resilience." GEF. 2003. Operational Program on Sustainable Land Management (OP 15).

deforestation and cutting down of bushes, forest degradation, loss of biodiversity and natural disasters.

The Kyrgyz Republic has a population of around 5 million people, of whom around 3.2 million people or almost 65% of the total population live in villages and are somehow engaged in agriculture. The Kyrgyz economy was, and still remains, primarily agricultural. Kyrgyzstan has about 1.4 million hectares of arable land, which is only about 7 percent of the nation's total area. More than 70 percent of the arable area depends on irrigation for its productivity. The main natural resource is in the main mountainous pasture that is 40% of the country's territory. The principal agricultural problems in Kyrgyzstan are lack of means for agricultural production, violation of scientifically founded schemes for cultivation of agricultural crops and development of traditional cattle breeding, degradation of arable lands and pasture, poor availability of credit and limitation of access to agricultural markets. Unfinished land reform in 1999² led to not taking into account negative reform influence during changing of land resources management against a background of land redistribution. They are reduction of land-use coefficient, necessity of creation of additional infrastructure (roads, irrigation networks) and decrease of qualitative indicators of land resources. Legislators of Kyrgyzstan give attention to small-scale farmers' plots that are not profitable and cover only natural manufacture of agricultural production. It may negatively influence on development of commodity production in agriculture and export oriented part of agricultural sector.

After 24 March 2005³ dynamic reforms in the area of management are taking place in Kyrgyz Republic. Also working out of new version of Constitution, Country Development Strategy and Agrarian policy is being made and all stakeholders participate in it. Kyrgyz Republic recognizes as necessary that combating poverty is the main priority of the country. Convention implementation in Kyrgyz Republic is aimed to combating land degradation. It is focused not only on the technical side of the problem in the local context but also solves the problem of inadequate attention to politics, legislation and institutes related to sustainable development.

Population of Kyrgyzstan got first information on UNCCD after the national workshop on knowledge capacity building on the 11-12 September 1997 in Bishkek.

The workshop's agenda foresaw presentation of ideas and statements of UNCCD and receiving a response, reaction of representatives from all six oblasts of Kyrgyzstan, state institutions and governmental bodies. The workshop was reported in mass communication media and the collected reports were published on the base of its outputs. Application on expediency of joining to the Convention was sent to the Government. In the result the Prime-Minister signed a document on joining to UNCCD on 19 September 1997. Other efficient source of information on UNCCD was a ratification procedure finished in July 1999. In compliance with parliament of Kyrgyz Republic, after ratification the text of the Convention was translated into the Kyrgyz language. Ministry of agriculture, water resources and processing industry in the face of Kyrgyz Scientific-Research Institute of Irrigation is a responsible authority from the direction of the Government. It also fulfils a function of coordinating centre on convention implementation.

² According to the State Agency on Registration of the real Estate Ownership Report on land redistribution in Kyrgyzstan (01.01.2003) rural population with land share in private property is about 2.6654 million people of the total population 5.14 million people.

³ On 24 March 2005 a revolution took place in Kyrgyzstan.

LAO PEOPLE'S DEMOCRATIC REPUBLIC

Lao People's Democratic Republic (Lao PDR) joined the United Nations Convention to Combat Desertification (UNCCD) in September 1996. The first and second national reports on implementation of the UNCCD were submitted in 2000 and 2002. Since the National Action Programme (NAP) on Combating Drought/Desertification was issued in 1999, Lao PDR has worked to combat the land degradation and drought. The main programmes activities were integrated in the "strategic vision for the agriculture sector" which was finalized in 2000.

In Lao context, desertification refers to the land degradation and seasonal drought caused by inappropriate land use practices such as slash and burn agriculture, deforestation, overgrazing, etc. Lao PDR is confronting with land degradation, soil erosion and seasonal drought which are some forms of desertification. The recent changes in climatic events, particularly the increasing frequency of dry events notably by El Nino, have increased new emerging climate pattern called seasonally aridity. The dry spell can extend 6 to 7 months. Huaphane, Xiengkhuang, Savannakhet and other provinces are suffering from this disaster.

Activities to combat desertification and drought in Lao PDR are related to the national priority programmes. They cover issues concerning forestry, water resources, biodiversity, natural disasters, climate change, flood and drought prevention, environmental public awareness. A collaboration group for the UNCCD implementation was officially established.

The preparation of this report was led by the national UNCCD focal point, and supported by UNCCD Secretariat. Preparation activities included data collection; information formulation was conducted since the end of December 2005. Two workshops were organized. The first workshop was to introduce the guideline and structure the report and collect preliminary data. The second workshop was to present and exchange idea and recommendation on the first draft report. There were more than 40 participants from relevant stakeholders attending the workshop.

The consultation workshop on 20 January and 10 April, and 3 May 2006 provided useful inputs to the Report. Local consultants from the Faculty of Forestry, the National University of Laos (NUoL), in collaboration with UNCCD Technical Coordination Working Group (TCWG), formulated the first draft of this national report under the UNCCD help guideline. In addition, the regional adviser on environment and sustainable development of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) provided significant comments and technical advice to finalize this report. The UNCCD Secretariat has kindly facilitated the transfer of financial support from the International Fund for Agricultural Development (IFAD) and provided useful policy advice regarding the preparation of the Report.

Throughout the preparation of this report, our sincere gratitude to the director general cabinet of STEA, director general of the Department of Environment (DOE), Director of Soil Survey and Land Classification Center, National Agriculture and Forestry Research Institute (NAFRI), Department of Meteorological and Department of Land Planning and Development that provide valuable advice and guidance so as to ensure the successful completion of this Report in a timely manner. In addition, special thanks are to the participants of the national review workshop who have provided many constructive comments, which have greatly improved the quality of the report.

LEBANON

1. Background

The Republic of Lebanon, situated on the eastern shores of the Mediterranean, has an area of 10,452 km² occupied mostly by mountains and hills. The Mount-Lebanon and the Anti-Lebanon chains are parallel to the sea, separated from each other by the Bekaa plain. The population of Lebanon is estimated to be around 4 million, of which at least 30% live in the greater capital and the coastal and inland plains causing a significant pressure on the natural resources there.

Lebanon has a great variation in climatic conditions due to its geography and physiography. They vary from a Mediterranean climate along the coastal plain and in the middle mountain range, to the sub-alpine or mountain Mediterranean climate on the highest slopes, covered by snow during most of the year; they become sub-desert and almost too dry for agriculture in some of the northern plains. Most of the precipitation occurs between November and March, in the form of heavy showers. The mean annual rainfall on the coast ranges between 500 and 1,000 mm and it goes down as low as 250 mm in the semi arid north-east.

Lebanon is known for its rich fauna and flora biodiversity and forests that occupied more than 20% of its area prior to the war and are now at around 10%.

The different ecosystems in the country are mainly threatened by deforestation, forest fires over-grazing, rural–urban migration, urban development, bad agricultural practices such as excessive use of chemical products, quarries and industrial development.

2. Status of the NAP

Lebanon developed its national action programme (NAP) for the UNCCD in a participatory process including all relevant and active stakeholders representing all sectors, public, private, civil society and academia. This process was supported by the German Technical Cooperation agency (GTZ) and the Drylands Development Centre of the United Nations Development Programme.

The NAP was finalized and endorsed by the Minister of Agriculture in June 2003. Political developments in the country have delayed its adoption by the Council of Ministers hence delayed its transfer into framework government policy. Nevertheless, the Ministry of Agriculture has pursued an implementation and mainstreaming process with the various sectors and has achieved several targets and objectives in that respect.

Since of the ratification of UNCCD by the Lebanese Parliament, the Ministry of Agriculture in its capacity as the focal institution has prepared two national reports (2000 and 2002) on the progress in the implementation of the Convention.

3. Strategies and Priorities within the Framework of Sustainable Development

Since the signature and ratification of the UNCCD, the Government of Lebanon (GoL) has developed various policies, strategies and development initiatives the have a direct impact on the mainstreaming of the NAP to the national development programme.

The key policy documents that provide the framework for the mainstreaming are the:

- a) Community Development Project and the Economic and Social Fund for Development;
- b) National Environmental Action Plan;
- c) National Reforestation Plan;
- d) National Biodiversity Strategy and Action Plan;
- e) 10 Year Plan for Water and Wastewater Management;
- f) Plan for Alleviating Barriers to Quarries Rehabilitation in Lebanon;
- g) Plan of Lebanon –Cross-Sectoral Energy Efficiency and Removal of Barriers to ESCO operation;
- h) Project of Capacity Building for the Adoption and Application of Thermal Standards for Buildings;
- i) Project Institutional Strengthening Project for the Implementation of Montreal Protocol in Lebanon;
- j) Development of National Plans for the Management of persistent organic pollutants.

These frameworks recognize and emphasize the need and importance of appropriate management, conservation and utilization of natural resources for sustaining livelihoods and conserving the environment.

These plans/programmes are based on two main principles, namely participation and empowerment of the concerned people. They were prepared through a process of consultative workshops with a wide variety of stakeholders. They identify policy actions necessary to pay special attention to marginalized areas of the country.

In addition to the above, a Master Land-use Plan was developed in a somehow participatory process and a land cover map has been developed through the use of satellite imagery. It will facilitate review and harmonization of land use legislation.

The public sector, research institutions, municipalities, non-governmental organizations (NGOs) and, cooperatives have participated through workshops, consultation meetings and national forum in the mainstreaming of NAP initiatives. Some of various technology activities related to desertification and drought control as identified within the NAP are under implementation.

Development of benchmarks and indicators were identified as priority areas for NAP for this a monitoring system of land degradation "MoDEL has been created by Ministry of Agriculture (MoA)/GTZ/Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD).

4. Institutional measures to implement the UNCCD

The MoA as the national focal institution at the UNCCD Secretariat has continued its efforts to operationalise the National Coordination Body (NCB) but many technical and administrative constraints still hinder this process. This has negative impacts on the mitigation measures and plans requiring action. Additionally, some coordination and harmonization mechanisms for combating desertification have been rendered inefficient through the lack of coordination. Towards that end, more capacity building is needed in order to improve cooperation on implementation, monitoring and evaluation of programmes and projects on combating desertification.

Insufficient awareness on land degradation and the NAP in the country has caused inadequate financial allocation to activities to combat land degradation. It is important to note that the private sector is not involved in the development of policies and mobilizing financial resources for implementation of development projects in marginalized areas.

Lebanon has benefited from subregional programmes such the West Asia SRAP to combat desertification, and Land Degradation Assessment (LADA).

An institutional framework is in place to implement the NAP. The MoA prepared a draft law proposing the creation of a unit within the Ministry; it is suggested that the unit will take charge of the follow-up of the NAP and the Convention implementation. This law is still pending the required action from the parliament.

5. Participatory process in implementation of the National Action programme

The development of the NAP to Combat Desertification has been supported in its elaboration and implementation by various stakeholders that include the government departments and ministries; NGOs, cooperatives, municipalities international agencies, academic and research institutions; and local communities.

Lebanon has been celebrating the World Day to Combat Desertification since 2002. This activity is being used by the MoA as an occasion to launch new initiatives or activities and give media attention to specific issues of national and global importance such as rehabilitating land, rangeland management, water use efficiency and sustainable agriculture. Issues on combating desertification are covered periodically in a newsletter and broadcasts on national TV stations. Funds and techniques are needed to strengthen the awareness raising activities.

A comprehensive assessment of the indigenous knowledge is still a weak point distinguishing the process of combating desertification. More efforts should be oriented towards these native practices that played an important role in conserving the natural resources of local communities.

To translate the NAP into practical interventions at local levels, the MoA has assigned four agriculture engineers as local focal points as a trial first stage. These engineers are being subject to continuous training and a capacity building process that will enhance their ability to develop and follow-up local action programmes to mitigate the impact of land degradation and alleviate poverty within their respective regions. This process will be extended to cover other areas if proven successful in these target areas.

6. Consultative process in the National Action Programme

Lebanon prepared its NAP through a consultative and participatory process which was concluded by a National Forum that allowed for final input to the NAP as a document and a process by experts and representatives of various Ministries, NGOs, research institutions and academia. This input was included in the elaboration of the final NAP document. The NAP was validated through a national workshop attended by various stakeholders in January 2003.

International partners have been involved in the NAP elaboration and its implementation through bilateral and multilateral mechanisms. The MoA, on behalf of the Lebanese Government, has

continued cooperation with DDC, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and GTZ .

These organizations, in addition to the Global Mechanism (GM), support the implementation of the NAP. The GM is currently assisting in the mobilization of financial resources through the development of a Resource Mobilization Strategy, needed to enhance implementation of the NAP and the Convention.

The UNCCD Secretariat and the GM can further assist Lebanon by mobilizing resources needed to implement a national strategy raising the awareness of public on land degradation issues through:

- Assessing educational needs, elaborating appropriate school and university curricula integrating desertification and drought awareness;
- Expanding educational programmes for all, in particular for women and youth, on the identification, conservation and sustainable use and management of the natural resources;
- Preparing documentaries and videotapes; radio and TV programmes; posters and newsletters on best practices related to sustainable management of natural resources.

7. Measures for implementation of the NAP

Several projects in the country have integrated the UNCCD principles in the implementation of their activities. These principles include bottom-up and participatory approach; enhancement of gender balance and the use of indigenous knowledge. This process facilitates integration of ongoing projects into the NAP process. Many programmes and projects on sustainable management of natural resources are in the implementation phase, such as:

- a) National Reforestation Plan (NRP),
- b) Ten Year Plan for Water and Wastewater Management
- c) Regional IPM Programme in the Near East
- d) Agriculture Development Project through supporting selected Farmer groups in production and marketing operation
- e) Lebanon-Cross Sectoral Efficiency and Removal of Barriers to ESCO Operation
- f) Small grants programme for NGOs/ and civil society organizations, and municipalities, to implement priority activities within their mandate (supported by the CDP, the Economic and Social Fund for Development (ESFD), the GEF Small Grants Programme, the Development Marketplace and others).

The objectives of these projects demand local community participation in the sustainable management of their natural resources, and use of indigenous knowledge and technologies in project implementation.

The NAP to Combat Desertification, within its mandate to formulate the “National Resources Mobilization Strategy”, is preparing an inventory of all projects in the country addressing issues of combating desertification. The inventory will provide information on activities done or plans under implementation, actors, sources of funds, technologies under implementation.

8. Financial support and technical cooperation

To date, the Lebanese Government did not establish any separate trust fund to combat desertification. This might be linked to the continued lack of a National Development and Poverty Reduction Strategy.

The private sector is generally still very distant from the process despite some attempts by a bank here and a company there for marketing purposes.

Through the CDP (World Bank loan) and ESFD (European Union grant), the government has put in place some intervention mechanisms that include: improvement of traditional production and marketing, promotion of eco-tourism, and enhancing livestock based industries.

GTZ, UNDP, DDC and the GM have collaborated in development of a road map for NAP elaboration and implementation. Technical support has been received from the United Nations Economic and Social Commission for Western Asia (ESCWA) on land degradation assessment issues.

9. Benchmarks and indicators

GTZ secures the technical and financial support to the National Centre for Remote Sensing (NCRS) of the National Council for Scientific Research (NCSR), to monitor and evaluate the process and dynamics of land degradation. This institution has a long history of environmental monitoring and its expertise has accumulated over the years and can be used to monitor, assess and evaluate the impacts of NAPs using benchmarks and indicators as elaborated in different programmes. GTZ is also supporting a regional programme for monitoring and evaluation is on-going Lebanon, the Syrian Arab Republic and Jordan.

MALAYSIA

1. INTRODUCTION

Desertification is land degradation occurring in arid, semi-arid, dry sub-humid areas where the ratio of the annual precipitation to the evapotranspiration falls within the range of 0.005 to 0.65. Most of Malaysia does not fall into this definition except for limited region in northwest and northeast of the peninsula where dry period of 2 months to 3 months occurred annually. The dry period occurs in the months of January to March when evapotranspiration exceeds precipitation. Desertification is not a problem in those areas even during the short dry period as there is sufficient soil moisture to sustain the growth of most vegetation except in soil originated from sandy beach swales in the northeast of the peninsula. The short dry spell is adapted to advantage in these areas like mango and rice producing areas in the country, as drought induces flowering of those fruit trees and creates favourable conditions for the ripening and harvesting of rice. Two to three months of drought would have made these areas underproductive, but water harvesting is practiced such that redistribution of water during drought period is possible, by building dams, cascading ponds and water tanks at regional, plantation and farm level respectively.

However, Malaysia is not free of land degradation problems. There are real and constant threats from land degradation, although they differ from those of the arid or semiarid countries. Unlike

dry regimes where land degradation is attributed to lack of rainfall, the threats of land degradation in Malaysia are caused by excessive amounts of seasonal rain which can badly damage unprotected sites, especially sloping hill land, resulting in severe soil erosion and other associated problems such as silting, water pollution, and frequent flash floods that bring about misery and huge financial losses in places situated far from the source of degradation. In some situations large sums of money have been spent on mitigation measures to alleviate problems caused by poor land utilization and management. Land degradation in Malaysia is most eminent in fragile ecosystems such as steep land, mountainous areas which are termed as environmental sensitive areas. Here occurs land with shallow soils which can easily be degraded and eroded.

Degraded land comprise problem soils, such as mined land, peat land, land with acid sulfate soils and the impoverished sandy beach BRIS (Beach Ridges Interspersed with Swales) soils and areas under shifting agriculture. Degradation in these ecosystems occur either as direct damage to the land due to land clearing activities and soil erosion, or as deterioration to the physical and chemical properties of the soils which may require amelioration measures to restore the soil conditions. Land degradation is not yet a major problem in these ecosystems, but the scenario will change with increasing competitive demand from a growing population for more land for urban use and food production. Land development will invariably encroach into the fragile ecosystems such as the steep land and mountains which are presently spared from massive development because of difficult terrain conditions and strict regulations governing their use.

Malaysia enjoys considerable success in the rehabilitation of the severely degraded ex-tin mining land for productive and economic use. The ex-tin mining land, created after the minerals were exhausted, has now largely been reclaimed for crop production, aquaculture, duck rearing and also for housing, recreation parks and golf courses.

The ability of Malaysia to keep land degradation to a minimum can be attributed to the fact that Malaysia is a strong advocate of sustainable development. The country is mindful of the dangers indiscriminate use of the land especially land with the fragile ecosystems. Policy guidelines are in place to guide the land use planning, utilization and management of land on sustainable basis. Technical guidelines for various types of development have also been drawn to ensure the use of environment-friendly on-site operations. Legislation has been enacted as a deterrent against land mismanagement and abuses.

Soon after the independence, Malaysia launched an aggressive programme to develop its agricultural sector as part of the overall efforts to develop the nation. The main thrust of the development was directed at the conversion of large tracts of forest land into agricultural land for the cultivation of important economic crops. In the 1960's and 1970's, the development of land was concentrated mainly on land with favourable topography and suitable agroclimatic zoning. However, in recent years, as much of such land has been utilized, the encroachment into the steep areas has become inevitable.

2. PHYSICAL ENVIRONMENT

Location

Land degradation in Malaysia is very much associated with forest harvesting, hill land agricultural development and mineral exploitation. To represent the extent of land degradation and efforts to combat it, the case of Peninsula Malaysia, which has relatively more land opened for development, is referred for this report.

Peninsula Malaysia is situated between the equator and 8° North latitude and longitudes 99° and 120° East. It is bordered in the east by the South China Sea and to the west by the Straits of Malacca. The peninsula has an area of 13.2 million ha of land, whereas in the eastern part of the country, Sarawak and Sabah have 12.5 million ha and 7.2 million ha respectively.

Physiography

The physical relief is dominated by the Main Range that runs almost centrally along the middle of the peninsula. The Main Range rises to a height of beyond 2,200 metres above sea level (masl). Secondary ranges that fan out from it, mainly in the northern half of the country are the Kedah-Singgora Range, the Gunong Bintang Range on the western side while the Gunong Benom Range, the Gunong Tahan Range and the East Coast Range are to the east of it. From these mountain ranges, rivers flow through hilly and rolling lowlands towards the flood plains, coastal flats and beach ridges.

Climate

Malaysia has a hot humid climate, which can be classified as subtype Afi (tropical rainforest) of Koppen's classification. In the extreme northwest of the peninsula, where a distinct dry spell is present from the months of December to February, the climate tends to be Am (tropical monsoon). The annual air temperature is generally over 24° Celsius while the main annual rainfall is over 2000 mm. In general, the mean annual rainfall in most of the highlands (above 300 masl.) ranges from 2,000 – 2,200 mm and is quite similar to that of the national average. The highlands do not receive significantly higher rainfall than the lowlands. Moisture availability is, however, higher due to lower evaporation. The soil moisture regime is udic below 300 masl. and perudic above this elevation. The soil temperature regime is isohyperthermic (>22°C) up to 1200 masl, isothermic (15-22°C) between 1200 to 1600 masl and isomesic (<15°C) at elevations exceeding 1600 masl.

Vegetation

The primary vegetation from the lowland to the highland can be grouped into four floristic zones. The family Dipterocarpaceae dominates the lowland forests below 300 m. The group Shorea is evident at this altitude. Between 300 metres and 800 metres, the Hill Dipterocarp appears. The upper Dipterocarp occurs between 800 metres and 1,200 metres and Oak-Laurel forests are found between 1,200 metres and 1,600 metres. Above 1,600 metres, the Montane-Ericaceous forests occur. Generally, the tree fern *Thelypteris chlamydophora* is commonly found above 300 metres.

Soils

A wide range of soils is found in the steep areas from an elevation of 76 masl to beyond 2,000 masl representing major differences in parent material, climate, vegetation and terrain conditions. A distinct characteristic of soils on sloping land is shallower solum depth for those derived from sedimentary parent materials, but can be deep for those derived from igneous rocks.

3. PROBLEM AREAS AND DEGRADED LANDS

Class 5 land and some of Class 4 land consist of predominantly fragile ecosystems such as steepland, peat, acid sulfate and BRIS soils. The steepland and the mountains together are the largest fragile ecosystem and occupy 15.7 million ha of land (78% of the total fragile land or

48% of the nation). Peat takes up 2.6 million ha of land (13% of the fragile land or 8% of the nation). This is followed by potential acid sulfate and acid sulfate soils which cover 1.31 million ha (7% of the fragile land or 4% of the nation). BRIS and tin tailings together take up approximately 0.5 million ha.

Steepland and Mountains

Steepland refers to land with slopes greater than 25°. Such land occurs in both the lowlands (<300 masl) and highlands (>300 masl) while mountains are found in the highlands. In general, slope increases with elevation although there are plateaus and inter-montane valleys with gentle slopes which are potentially suitable for agricultural development. These are few and far apart, extremely expensive to develop and highly susceptible to soil erosion.

Peat

Peat is a low potential, non-renewable resource, which diminishes with use. It suffers from water logging and hyperacid conditions; poor trafficability; acute major and minor nutrient deficiencies; subsides irreversibly and gradually disappears when drained; and is prone to fire hazards. Nevertheless, more than 432,350 ha (46%) of peat land in Peninsular Malaysia have been drained, mostly for agricultural activities which occupy 376,005 ha (41%). Oil palm is the dominant crop and covers 247,034 ha or 57% of the cleared land on peat. Upon drainage and cultivation, peat decomposes and shrinks, resulting in subsidence and lowering of the ground surface. In the first 2 years of draining the peat, the rate of subsidence is drastic and reaches as much as 50 cm. In subsequent years, because of the consolidation, the rate of subsidence is only 2 to 3 cm per annum. Peat fires contribute to serious air pollution besides destroying crops. Now, no-burning rules during dry periods are strictly imposed in areas nearing airports.

Acid Sulfate Soils

Acid sulfate soils are only found along the coastal areas of the country. Under natural conditions, they are present as potential acid sulfate soils which are subjected to tidal influence and are frequently inundated by seawater. Land with acid sulfate soils must first be reclaimed before it can be put into effective use for agricultural production. Reclamation is time-consuming, tedious, costly, delicate and complex, and requires multidisciplinary expertise. Major engineering works involving the construction of coastal bunds and tidal gates to prevent sea water ingress, and a complex network of drains to remove the excess water and salts from within the polder, are needed to make the land suitable for crop production. However, reclamation results in the formation of acid sulfate soils which can render the reclaimed land less productive if amelioration measures are not implemented to improve the soil conditions. With proper agronomic and water management and liming, such soils can be converted into highly productive soils for the cultivation of many crops.

BRIS Soils

The term BRIS is the abbreviation for Beach Ridges Interspersed with Swales and refers to the alternating parallel sandy beach ridges and low depression areas which are commonly found in the coastal regions in Peninsular Malaysia, Sabah and Sarawak. In Peninsular Malaysia, it forms the dominant landscape in the coastal areas of the East Coast stretching from Kelantan in the north to Johor in the south. The alternating sandy beach ridges and swales are found as far inland as 10 km from the present-day coastline. The BRIS areas contain infertile soils which are composed predominantly of inert sand particles. The sandy nature of these soils results in very low inherent soil fertility, poor nutrient content and low water holding capacities, excessive drainage, high surface temperatures which can result in very high moisture stress in crops. The

low lying swales are prone to flooding during the monsoon. Although some of the BRIS areas have been cultivated successfully for tobacco, vegetables, corn, herbs, roselle and other annual crops, they constitute the most challenging for agriculture development. Now increasing areas are developed for intensive horticulture crops under irrigation and rain shelter. Organic fertilizers, manure additions and irrigation are vital inputs for the success of crop production in these areas.

Mined Land

By far, the most damaging activity to land degradation is mining. Approximately 200,000 ha of land have been mined in the peninsula for tin ore in 1960s and 1970s. The main methods of mining tin are open-cast, gravel pump and dredging. The tin tailings left behind by these activities are highly impoverished by the washing process to extract the tin ore. In all cases, the sand and clay fraction of the soil were separated and dumped separately as sand and slime (mixture of silt and clay). The depth of the disturbed sediment varies from 10 metres for dredging to 0.5 km for open-cast mining. Ex-tin mined land has been rehabilitated successfully for many uses such as agriculture, aquaculture, duck farming and urban uses including housing estates, golf courses and recreation theme parks.

Shifting cultivation

Shifting cultivation especially in Sarawak is a potential source of land degradation. Approximately 2.7 million hectares or 22% of its land area has been subjected to shifting cultivation activities. In the early years, shifting cultivation, mainly involving hill rice, was not considered a threat to land degradation due to the long fallow period of more than 10 years. Now, due to rural to urban migration especially among the rural people, there is clear decline in the land under shifting cultivation.

MICRONESIA (FEDERATED STATES OF)

Recognizing the critical need to protect its limited land resources, and given its existing land degradation problems, and the potential for these problems to accelerate, the Federated States of Micronesia (FSM) ratified the United Nations Convention to Combat Desertification (UNCCD) on March 25, 1996. As an obligation under the UNCCD, FSM submitted its preliminary report to the UNCCD Secretariat (Secretariat) in October 2002.

The FSM consists of over 600 high islands and atolls spanning over 3 million square kilometers of the Pacific Ocean, with a total land area of only 4,840 square kilometers (sq.km). The high islands have mountain peaks reaching 791 meters above sea level with very steep slopes.¹ Vegetations of these high islands include upland forests, low-lying coastal swamp areas, and mangrove forests and beaches. The flat atolls with a mean elevation of two meters above sea level have swamp areas in the center surrounded by palm forest with mangrove or beach coastlines. Its coastline is about 3,300 nautical miles.

Agriculture and subsistence farming, conservation sites, infrastructure and settlements, are all part of the upland forest while low-lying swamp areas are used for taro patch cultivations and some urban settlement as well. The coastal areas are mostly used for human settlement and commercial development especially in the atolls.

¹ FSM Department of Economic Affairs, FSM Preliminary Report to the Secretariat of the Convention to Combat Desertification, Pohnpei, FSM: October 2002

The FSM has a tropical maritime climate with temperatures between 24°C and 29°C, and annual precipitation varying from 304 centimeters for the western islands to 1,016 centimeters for the eastern islands. Humidity averages over 80 per cent with prevailing trade-winds from the northeast. The nation is affected by typhoons, droughts, excessive rainfall and extreme high tides usually associated with El Nino Southern Oscillations (ENSO). Future climate change projections for the region indicate increase in surface temperature, sea level, decrease in yearly rainfall but increase in intensity, and increase in extreme events (typhoons, droughts, tides, ENSO) frequencies and intensities.

Land degradations in the FSM are mainly attributed to increased population, human activities and climate change, extreme and variability. More land is being converted to use for settlements, infrastructure, economic development, and agricultural usage in order to meet the needs and demands of its growing population. For example, within 25 years the native forest upland of Pohnpei Island has been reduced from 42% to 15% for agriculture usage which involved extensive clearing, and has resulted in accelerated soil erosion and severe land slides². Extreme climatic events such as excessive rainfall and typhoons are also causing major flooding and increased soil erosion. In addition, extreme high tide due to ENSO or storm related events is increasing land erosion, salinization and inundation of low lying coastal areas and swamp taro patches. Extended droughts associated with ENSO events are contributing to increased wild fires, which is causing increased surface runoff and deterioration of soil quality. In its efforts to protect and conserve its biodiversity, and to minimize and prevent land degradations, the FSM is promoting conservation of its terrestrial and marine ecosystems with the goal of setting aside 20% and 30% respectively by 2020. Limited rehabilitation of affected areas is already in place.

The FSM population in 2000 was 107,008 with an annual growth rate of 0.3%, and population density of 395 per square mile. The life expectancy was 67 years and infant mortality rate was 40 per thousand. Annual household income was \$4,618 with an unemployment rate at 22%. At least 80% of the total population attended primary education level in 2000.³

While the FSM is still in the process of developing its National Action Plan (NAP) specifically for UNCCD, the issue of land degradation and other related issues is being addressed under other existing policies and strategic plans. Such policies and plans include, but not limited to, the 2003 FSM Strategic Development Plan (SDP) and Infrastructure Development Plan (IDP), National Environmental Management Strategy (NEMS), National Biodiversity Strategic Action Plan (NBSAP), First National Communication, and other specific sectoral plans.

The legislative and institutional frameworks for some elements of land degradation issues have already been established with the recent formal adoption of the FSM SDP and IDP, in addition to other plans already in place. The specific mainstreaming of adaptation to climate change and land use planning into all the sectors of the SDP is one example of initiatives undertaken by FSM since its preliminary report in 2002. When completed, the FSM NAP will be integrated into the FSM SDP and IDP and other relevant plans.

The nation shares common concerns regarding land degradation issues, and supports regional strategies to address these concerns. These concerns and strategies are reflected in regional plans and frameworks which FSM is part of, such as The Pacific Plan, Pacific Islands Regional

² Id source

³ FSM DEA, Census Report

Climate Change Framework, Pacific Islands Biodiversity Programme of Work, Pacific Islands Waste Management Strategic Plan and others.

The UNCCD, like other international conventions, is managed by the FSM Department of Foreign Affairs as political focal point. The FSM Department of Economic Affairs (DEA), specifically the Division of Resource Management and Development (RM&D) is the implementing focal point. While there is currently no individual coordinator for the UNCCD, there is plan to put in place a coordinator once the NAP is developed and approved, and financial support is in place.

Currently, RM&D manages other environmental conventions (the Convention on Biodiversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), the Montreal Protocol on Protection of the Ozone Layer, the Bio-safety Protocol, etc.), which have cross-cutting issues relating to UNCCD, and draws on the various relevant expertise available regionally and locally. In addition, RM&D involves the participation of various stakeholders in its UNCCD work through the FSM Environmental Management and Sustainable Development Council (SD Council). Information and data on land degradation may be available but is limited and scattered, as there is no specific database dedicated to UNCCD at the national level. Information and data management system established under the CBD, the Clearinghouse Mechanism (CHM) have the potential to be utilized by RM&D for UNCCD.

Under current legal understandings, it is recognized and accepted that state and local governments have primary authority and responsibilities on natural resources management, including management of land resources. The states and local governments have put into place standards and regulations to manage these resources through land use plans, environmental impact assessments, coastal zones plans and others.

DEA and its states' counterparts have vast experience in consultation processes with multi-stakeholders especially the civil societies. These experiences were gained during previous consultations on preparation of the UNFCCC national communication, NBSAP, the national capacity self-assessment (NCSA), Persistent Organic Pollutants (POPs), and others. It is envisaged that consultation on the preparation of the NAP will build, and expand upon, existing knowledge and experience.

Furthermore, FSM continues to build its capacity to implement the UNCCD through partnerships with international organizations. The nation is actively involved in the UNCCD's processes and works closely with the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP) as the executing agency. On the regional level, the country is partnering with other Pacific islands through the Secretariat of the South Pacific Regional Environment Programme (SPREP) for coordination and implementation of strategies and policies that support the UNCCD.

Since the UNCCD Preliminary Report in 2002, FSM has incorporated specific activities and outcome measures in its sectoral plans. Some of these activities include, improving land use and sustainable development planning in both urban and rural areas, drafting necessary implementing legislation for international conventions to which the FSM is already a party, protecting soil

erosion on slopes, shorelines and wetlands utilizing suitable bioengineering techniques and increasing soil conservation by employing suitable agro forestry practices.⁴

Financial resources to support the implementation of the UNCCD in the FSM are mainly from grants from the Government of the United States of America through bilateral agreement (Compact of Free Association). This agreement specifically provides funding for the environment sector to support the nation's efforts to protect its land resources, prevention of environmental degradation, and ability to provide adequate legal and international treaty safeguards relating to the protection of its natural resources. Additional funding sources include GEF and FSM local revenue.

Even though local technical capacities are very limited, the FSM has yet to formulate a plan for specific outside technical assistance and support. It is envisaged that at the completion of the NCSA and the implementation of the GEF's Sustainable Land Management Portfolio Project, a clear scenario of specific and priority capacity needs as well as technical assistance will emerge.

Existing environmental monitoring and evaluation mechanisms in land use changes are in place, but are limited in scope both in resolutions and spatial coverage. Equally, quality data and capability to interpret and convert data into understandable formats like Geographical Information System (GIS) to support policy decision making are also lacking. It is now a priority in the FSM SDP to improve data collection, qualities, accessibilities, and utilization of user-friendly information system like GIS. Monitoring of the NAP will be developed and implemented when the NAP is in place.

In line with the recommendations by the UNCCD Committee on Science and Technology, the FSM is already covered under certain early warning systems. Among others, the early warning system on ENSO, operated by the University of Hawaii (ENSO Application Center) has provided excellent predictions that enabled policy makers to effectively prepare for the last severe ENSO events.

Traditional knowledge plays a vital role in almost all aspects of environmental management in the islands' societies. Hence, the nation promotes and incorporates such knowledge in land managements, mitigation and conservation planning and implementations. It draws on traditional experts during consultative processes. As majority of lands are owned by individuals or clans through customary tenure system, it is therefore imperative for FSM and the Convention to involve the cooperation, dedicated support, and long term commitments of all stakeholders to succeed in controlling, preventing and mitigating land degradation, the central core and purpose of the UNCCD.

⁴ FSM DEA, FSM 3RD Economic Summit Proceedings, Pohnpei, FSM: March 2004

MYANMAR

1. The main purpose of this report is to inform the Parties to the Convention of the situation in Myanmar with regard to measures taken in the implementation of the UNCCD at the national level. The present report is the outcome of collaborative efforts by all institutions/organizations and individuals who are actively involved in the efforts to combat desertification in the country.
2. Myanmar is one of the developing countries in Asia severely affected by land degradation and desert-like formation mainly resulting from inappropriate land use practices. Realizing the lead role of the United Nations Convention to Combat Desertification (UNCCD) to resolve environmental and desertification problems at a global scale, Myanmar acceded to the UNCCD in January 1997.
3. Myanmar is basically an agricultural country, and hence the agricultural sector has been designated as the main pillar of the country's economy. The population is estimated at 55.4 million in 2006. More than 70% of the population are living in rural areas, and 65% of the total labour force are engaged in the agricultural sector. Main objectives of the agriculture sector are (i) surplus in paddy, (ii) sufficiency in edible oils, and (iii) increased production and export of pulses and industrial crops. Five improved strategies are (i) exploitation and expansion of agricultural land resources, (ii) sufficient provision of irrigation water, (iii) increased use of agricultural machinery, (iv) improved technology, and (v) production and use of improved crop varieties and quality seeds.
4. Myanmar is rich in natural resources, particularly forest resources. About 50% of the country's total area is still covered with forests, out of which about 37% are closed forests, and the remaining 14% are degraded forests. Some forested areas have been constituted as permanent forest estate (PFE) under the 1995 Myanmar Forest Law, its total area reaching as much as 23.23% (exclusive of protected areas system) of the country's surface at the end of 2005. Diverse forest ecosystems in Myanmar are home to nearly 7,000 plant species, 96 bamboo species, 36 rattan species, 481 orchid species and no less than 360 mammal species, 360 reptile species and 1,000 bird species - an outstanding biodiversity not only on regional, but also on a global scale ("hot spot").
5. Due to the rapid development in the agriculture and forestry sectors within the last decade, the land use pattern has distinctly changed between 1996 and 2002. During that period, the agricultural land area nearly doubled following the development activities such as construction of dams and river-water pumping stations, and because of reclamation of inundated land, and hills and mountains. The forest cover, on the other hand, gradually decreased from 57.2% of the total land area in 1955 to 50.8% in 1989. However, during the last decade, the Forest Department (FD) and the newly constituted Dry Zone Greening Department (DZGD) effectively maintained and improved the existing natural forests and also established various types of forest plantation and hence, the forest cover increased by 1.48% in 2000. The DZGD undertakes establishment of forest plantations; protection of remaining natural forests; introducing and promotion of wood fuel substitutes; and management and development of water resources. The overall deforestation rate between 1955 and 1997 was about 3,160 sq. km per year, which is equivalent to 0.5% of the total country's area.
6. Extension of agricultural land, construction of dams and reservoirs, and increase in livestock breeding area has contributed to the socio-economic development of local people. A

total of 132 dams were constructed during the period from 1988-89 to 2003-2004 (December.) throughout the country. However, much of the forest areas have been clear-felled for other land use purposes, diminishing biodiversity and environmental stability to a considerable extent.

7. Similarly, in the Dry Zone of Central Myanmar, due to the constraints of agro-climatic conditions with erratic rainfall, high temperature and frequent drought, crop farming is not sustainable for living. These situations make the local people depend more on the over-exploitation of natural resources for their daily lives as well as for cottage industries. Due to the shortage of fuelwood, other but less desirable alternative fuels such as agro-residue, forest-waste and coal briquette are being used.

8. During the period between 1997-1998 and 2005-2006, the DZGD, as a principal institution to combat desertification in the Central Dry Zone, planted trees on a total of 117,414 ha comprising village forests, watershed plantations and mountain greening in Sagaing, Mandalay and Magway divisions. The department maintained and protected about 486,415 ha of the existing natural forests during the same period. A total of 0.4 million fuel-efficient stoves and 67.8 million fuel briquettes were distributed by the DZGD in the three divisions during the same fiscal year. A total of 1,420 small ponds and 86 artesian wells constructed to supply much-needed water resource, 1249 check dams for water harvesting and 0.2 million tons of agricultural waste used as alternative fuel.

9. The 1995 Myanmar Forest Policy identifies six imperatives in accordance with the forest principles adopted at the UNCED. These are: **Protection** of soil, water, wildlife, bio-diversity and environment; **Sustainability** of forest resources; **Basic needs** of the people; **Efficiency** to harness the full economic potential of forest resource; **Participation** of the people; and **Public awareness** about the vital role of forests in socioeconomic development of the nation. The policy also includes important measures directly or indirectly related to the involvement of the public sector in implementing the forestry policy and the environmental conservation policy of the Government in accordance with international agreements relating to conservation of forests and environment, among others. Community Forestry Instructions (CFIs) were issued in 1995 and since then CFIs have been practiced with emphasis on the participation of local community in managing forests to meet their basic needs without detriment to environmental conservation.

10. The Dry Zone of Central Myanmar is the most problematic region in terms of land degradation because of continued deforestation and its severe climatic conditions. Realizing the status of land degradation in the region, all possible measures have been taken to prevent and check the environmental deterioration and land degradation since the 1950s. In 1954, a Dry Zone rehabilitation project was initiated by the Agriculture and Rural Development Corporation (ARDC) in collaboration with the FD to carry out tree planting activities in denuded lands. In 1994, the FD implemented a special "Greening Project" for the Nine Districts of the Arid Zone of Central Myanmar. During the project period, 7,280 ha of village supply plantations were planted on denuded lands in the vicinity of the villages for greening purposes and fuelwood supply. In 1997, a new department entitled "Dry Zone Greening Department" was instituted in order to accelerate the implementation of greening and rehabilitation activities focusing on the Dry Zone. Four main tasks of the DZGD are: to establish forest plantations on degraded and denuded land for local supply, and for greening the environs; to protect and conserve the remaining natural forests; to promote the use of fuelwood substitutes; and to develop water resources.

11. Currently, there are 140 important dams constructed in the Dry Zone with watershed areas of about 4.5 million hectares, of which 50% are degraded and 25% are in a critical condition. As land degradation in watershed areas is partly linked with the poverty of local people, the FD is now taking some measures to upgrade the socio-economic status of the local people through the practice of community forestry, agroforestry, proper grazing, use of woodfuel substitutes and improving water availability, and income generation with their full participation.

12. In Myanmar, fuelwood is a vital energy source for cooking, lighting and for some cottage industry. Fuelwood consumption contributes about 84% of the total energy consumption of the country. Especially, the Ayeyawady mangrove forest has suffered from serious deforestation and environmental degradation due to over-exploitation of mangrove products, including woodfuel and charcoal, to meet the demand of Yangon City. As the population increased, rate of forest degradation also increased due to over cutting of fuelwood, posts and poles, encroachment for agricultural expansion and increased fish and prawn ponds. Realizing the ecological and economic benefits of mangroves along the coastal areas, the FD has adopted specific remedial measures to conserve and rehabilitate the mangroves. They are: natural regeneration with effective protection; regeneration improvement felling; artificial regeneration using indigenous species, formation of community-owned multipurpose plantations and village nurseries, distribution of improved cooking stocks, distribution of seeds and seedlings free of charge and provision of extension services.

13. The FD of the Ministry of Forestry has been taking measures, namely effective conservation and preservation of the forests, systematic enforcement for the protection of wildlife and wild plants, extension of reserved forests and protected public forests areas and natural and artificial regenerations throughout the country. Moreover, to ensure protection of wild life and wild plants and conservation of natural areas, the State has established 13 nature and wildlife sanctuaries with an area of 2.0 million acres and seven national parks with an area of 1.6 million acres. The FD has launched the Nation-wide Tree Planting Programme since 1977-78 with the object of raising public awareness of greening non-forested areas. The FD has distributed various kinds of seedlings increasing year after year especially in the Dry Zone. About 17 million seedlings were planted by the public in 2005 under the supervision of Regional Forest Conservation Committees. The FD is intensifying efforts to keep such a good momentum of tree planting in future.

14. The Union of Myanmar is home to over 100 national races. Its administrative system is divided into seven states and seven divisions, 64 districts and 324 townships. Over 70 per cent of the country's total populations are residing in rural races. Accordingly, the five rural development tasks namely transport facilitation, potable water supply, education promotion, health care promotion, and economic development have been laid down and are being implemented. The 30-year rural road development plan from 2001-2002 to 2030-2031 is being implemented.

15. As a partial fulfillment of its commitment to sustainable forest management (SFM), the FD of Myanmar in coordination with its partners developed and issued the Myanmar Criteria and Indicators for SFM comprising 7 criteria and 78 indicators at the national level and 7 criteria and 73 indicators at the forest management unit level in 1999. The FD formulated the long-term National Forest Master Plan (NFMP) for 30 years (from 2001-02 to 2030-31) for the overall development of the forestry sector in Myanmar starting from 1998 and finalized the plan in June 2001. Similarly, the DZGD issued the Dry Zone Integrated Plan in December 2000 for the same

period to provide general guidelines on the implementation of rehabilitation activities in the Dry Zone. Both master plans have been put into action. During the last decade, the FD implemented various kinds of special projects related to biodiversity and environmental conservation in cooperation with several international organizations and national as well as international non-governmental organizations (NGOs).

16. In Myanmar, the main causes of land degradation are, inter alia, demographic pressure, expansion of agricultural land, over-grazing, shifting cultivation, illicit logging and excessive use of fuelwood, and installation of industrial plants and mining. Due to the nation-wide land degradation, the capacity of natural forests to contribute to the environmental quality has decreased in both tangible and intangible benefits. The number of endangered plant and animal species increases seriously affecting biodiversity. Soils become infertile; water resources become less available; and the temperature will be increasing in the Dry Zone. There is an additional negative feedback on energy supply caused by forest destruction in water catchment areas. The latter ones are the basis for existing and future production of electric hydropower. Without forest, there will be no water in the catchment areas; without water, there will be no hydropower. Without hydropower, the population will have to intensify the already existing over-exploitation of natural resources for energy supply, thus entering in a vicious cycle.

17. The following are the key issues in combating desertification considering the prevailing environmental situations in the country.

- (i) Policies and policy conflicts
- (ii) Information and planning
- (iii) Institutional framework
- (iv) Budgetary resources
- (v) Adhocism in land use
- (vi) Shifting cultivation
- (vii) Wood processing and utilization of forest resources
- (viii) Livelihood strategies of local people living near the forests

18. Today, Myanmar has successfully formulated its National Action Programme (NAP) to combat desertification. The Myanmar NAP consists of nine chapters in which short-, medium-, and long-term action programmes are proposed in order to address the above-mentioned key issues. The NAP for Combating Desertification in Myanmar is the collective efforts of many institutions and individuals. The representatives from the different ministries, institutions, and NGOs are involved in the process. The following inputs are, inter alia, essential in the smooth implementation of NAP.

- (i) Political commitment and support
- (ii) People's participation
- (iii) Multi-disciplinary approach
- (iv) Workable budget
- (v) Modern and efficient technologies
- (vi) Regional and international cooperation
- (vii) Adequate institution building
- (viii) Effective monitoring and evaluation system

19. In Myanmar desertification is not well known among the people, as there is no desert in the country although there are some patches of desert-like formation in the Central Dry Zone. Land degradation and degradation of the forests are the major issues in the region. In fact, they are the first steps in the process of desertification. Remedial measures are essential to stop the process of desertification and so are preventive measures for the lands that are not yet degraded or slightly degraded. The NAP should be fully integrated with national sustainable development programme, long-term perspective plans and strategies. An integrated approach addressing physical, biological and socioeconomic aspects of the process of desertification and drought should be adopted. In fact, desertification is the common problem for all the sectors in achieving sustainable development. Both remedial and preventive measures have been carried out in prioritized areas only on small scales due to financial and institutional constraints. The Ministry of Forestry as a key player in combating desertification is implementing all possible measures based on its limited financial and institutional resources with the active participation of other line ministries such as Ministry of Agriculture and Irrigation, Ministry of Energy, Ministry of Mining and national and international organizations and NGOs.

NEPAL

Nepal is located between People's Republic of China and India within the coordinates of 26° 22' N to 30° 27' N latitude and 80° 04' E to 88° 12' E longitude. The country has an area of 147,181 km² with an average length of 885 km (East to West) and an average width of 193 km (North to South). Ecologically the country is divided into three agro-ecological zones namely the Terai (Southern plain), the Hills and the Mountains covering 23, 42, and 35 percent of the total area, respectively. Physiographically, Nepal is further divided into five regions – the Terai (up to 330m altitude), the Siwaliks (120–2000m), the Middle Mountain (500–3000m), the High Mountain (2200–4000m), and the High Himalaya Region (above 4000m).

Administratively, the country is divided into five development regions: Eastern, Central, Western, Mid-western and Far-western regions), 14 zones, and 75 districts. Each district is further sub-divided in to Village Development Committees (VDCs), Sub-Metropolis and Metropolis. There are altogether 3,914 VDCs, and 58 Municipalities including three Sub-Metropolises and one Metropolis.

Geographically, Nepal represents a transitional mountain area. Over three-fourths of the land is covered by rugged hills and mountains. The geological formations correspond to the physiographic zones and most parts of the country are geologically weak and fragile. The Siwaliks and Middle Mountains are ecologically threatened and geologically vulnerable.

As background information, necessary data and information have been presented in brief. Data and information included in the Second National Report have been minimised in this report. Nepal has identified land degradation and desertification as the principal environmental problems which require most urgent and moderately urgent actions respectively. Other environmental problems such as forest depletion, water pollution, solid waste disposal, groundwater depletion, biomass use and transboundary movement of hazardous wastes also contribute to degrade land and water systems.

In accordance with Article 26 of the UN Convention to Combat Desertification (UNCCD) in those Countries experiencing Serious Drought and/or Desertification, particularly in Africa and the relevant decisions of the Conference of the Parties, each Party to the Convention is required

to report, through the UNCCD Secretariat, on measures undertaken to implement the UNCCD. Accordingly, Nepal submitted the First National Report in 2000 and the Second National Report in 2002 to share information on the implementation of the UNCCD. This Third National Report follows the format outlined in decision 11/COP.1 (First Session of the Conference of the Parties) and UNCCD Implementation Help Guide (ICCD/CRIC (1)/INF.5) of 23 December 2005 for national reporting. This report is an updated version of the Second National Report submitted to the UNCCD Secretariat in April 2002. It includes updated data and information and measures taken during the last four years.

This report has been prepared with the generous financial assistance of the Secretariat of the UNCCD. The Ministry of Environment, Science and Technology (MoEST), the National Focal Point (NFP) for UNCCD in Nepal, hired three consultants to prepare the Third National Report, including the country profile. The consultant's reports were compiled and synthesised by the Ministry and presented to the validation seminar. The synthesised report was reviewed by about 15 experts and representatives of various organizations. The reviewers presented their opinions during the validation seminar. Based on the inputs received from the reviewers and participants, the report was finalised.

This report contains nine chapters. This chapter one provides background information. Chapter two provides brief information on biophysical and socio-economic indicators related to land degradation, drought and desertification. Chapter three highlights relevant plans and strategies adopted by the government after the second reporting. Chapter four outlines institutional and legal measures as also mentioned in the Second National Report. Chapter five elaborates participatory and consultative process adopted for the preparation of the National Action Programme (NAP) on land degradation and desertification. Chapter six provides information on measures taken or planned for the implementation of the Convention. Chapter seven describes financial allocation and NAP financing. Chapter eight focuses on the benchmarks and indicators. And chapter nine includes some thematic issues for discussion on the meeting of the Committee for the Review of the Implementation of the Convention (CRIC).

NIUE

As a small island developing State (SIDS), Niue faces several constraints towards the effective implementation of the Johannesburg Plan of Implementation 2002 and the 2005 Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of SIDS. Its lack of capacity, institutional and human and its isolation and financial dependence have been major obstacles which are further compounded by the continued decline in population due to emigration. However, in spite of these difficulties, Niue has made progress towards sustainable development.

Niue's Integrated Strategic Plan for 2003–2008 formulated by the Economic Planning and Development Unit (EPDSU) has incorporated into its strategic objective for the environment, *the sustainable management of Niue's natural resources for future generations*, which is reiterated in its strategic objective for economic development to *maximize benefits from Niue's resources in a sustainable manner*.

As previously addressed in Niue's National Report on the Implementation of the United Nations Convention to Combat Desertification 2002, two plans/strategies had been developed, to address

land degradation, although with limited success. The inception of these projects was prior to Niue becoming a signatory to the UNCCD.

- **Forestry Plantation Project:** An initiative supported by the New Zealand Official Development Assistance (NZODA) with the aim of replenishing depleted soil areas through agroforestry development. The project was later scaled back in 1998 to an advisory programme for various reasons, including: poor inception, exotic forest species failed to flourish due to poor soils, monopoly leases and land tenure conflict. As a result of these factors there has been a shift in focus towards sustainable indigenous forest management and agro-forestry and is in line with that of the National Forest Policy.
- **Development of a Basic Land Capability Model:** this was an output of the Land and Marine Resource Use Planning Project (LMRUP) sponsored by the Australian Agency for International Development (AusAid). The land capability model enables various soil types and land areas to be rated on the basis of 18 fields of data such as soil depth, soil type, zinc deficiency and most suitable crops for that particular area. Thus enabling a “suitability criteria” for land use. However there is room for improvement in the management and dissemination of this data.

In addition to the above two strategies the projects listed below are currently in the process of implementation and pave the way forward to addressing some of the land degradation issues in Niue.

- **FAO Technical Cooperation Irrigation Project:** titled “Developing an Appropriate Irrigation Scheduling Strategy for the Intensification of Import Substitution Agriculture”. The project is currently being implemented and was formulated in response to the Government of Niue which identified the need to increase the farmers capacity to produce import substitution crops in addition to quality export crops such as fruits, vegetables and vanilla in an effort to enhance Niue’s economic sustainability.
- **Smallholder Pig Farming and Poultry Production:** Both are regional programmes on food security funded by the Food and Agriculture Organization of the United Nations (FAO). The projects are interlinked with the Young Farmers Project and that of the Development of Sustainable Agriculture in the Pacific (DSAP) project, with regard to import substitution, sustainability, provision of manure for composting/ nutrient recycling and the empowerment of the community for additional income generation.
- **Young Farmers Training Programme:** A project funded by the New Zealand Agency for International Development (NZAid) with the objective of introducing farming to the youth as an alternative income generation scheme, and the transfer of knowledge to the next generation. The programme is targeted towards school leavers who were more practically inclined and were not furthering their academic education.
- **SPC DSAP Project:** The DSAP project is funded by the European Union and currently implemented by the Secretariat of the Pacific Community (SPC) and is a 4-year regional project as from 2004. The project aims to use a participatory approach to identify farmer problems and develop strategies to solve these problems through on-farm demonstrations, training and other extension methods. The extension communications will also be enhanced through the provision of equipment, short training and technical advice.

- **Least Developed Countries (LDC) and Small Island Developing States (SIDS) Targeted Portfolio Approach for Capacity Development and Mainstreaming of Sustainable Land Management (SLM):** Developed by the United Nations Development Programme/Global Environment Facility (UNDP–GEF) in response to the need for greater project effectiveness and impact, while at the same time reducing administrative costs/burdens. In essence the Portfolio Approach is a cost effective way of delivering a large number of relatively small projects to these countries in a timely manner. Through this Niue is able to access an expedited medium-sized project (MSP) under the Portfolio Approach and is currently in the approval process.
- **Niue’s National Action Programme (NAP):** Key thematic areas identified for Niue were sustainable management of land clearance, soil diagnostics, soil rehabilitation, sustainable cropping management practices, agroforestry, waste water and water resource management, capacity building and governance. Care was taken to address all issues pertaining to land degradation while at the same time ensuring that these objectives were realistic, practical and achievable.
- **National Capacity Needs Self Assessment (NCSA):** The objective of this project to carry out an assessment of Niue’s capacity to address and implement global environmental issues, in particular those relating to Niue’s obligations under the
- Convention on Biological Diversity (CBD), the Framework Convention on Climate Change (UNFCCC), and the Convention to Combat Desertification (UNCCD). The ultimate aim of the NCSA is to catalyse domestic and externally assisted action to meet Niue’s needs and priorities for capacity building in a well-planned and coordinated manner.

It is important to note that the existing sister conventions, CBD and UNFCCC, have also incorporated into their action/mitigation plans land degradation issues. It is therefore pertinent to increase harmonization between these conventions and resultant projects through the strengthening of interdepartmental linkages so as to avoid duplication.

The Environment Act 2003 provides a mechanism for the development of environmental policy and law, establishes an Environment Department, and provides enforcement powers for environment officers. The Environment Act in itself is a general multipurpose act designed to be constantly reviewed and updated by additional regulations where deemed appropriate by Government.

Another significant key to improving land use is the provision of information to the community. The development of a limited soil and land capability system addresses this to some extent but there is a need for better dissemination of this information to the community and in an improved/updated form which is better understood by the community and allows for rational decision making.

Although committed to sustainable development as reflected in its strategic plan, environmental acts, policies and ordinances, small island States such as Niue lack the technical capacity and resources to fulfil their international obligations and addressing one without all would be redundant.

PALAU

Since the submission of the 2nd National Report in 2002 and the initiation of its first seminar on the UNCCD in 2001, Palau completed its National Action Programme (NAP) to Combat Land Degradation in 2004. Palau's NAP was developed by a diverse group of stakeholders and is designed to be a working document. The process by which the NAP was prepared has facilitated an enabling environment for stakeholders to develop a comprehensive framework to address land degradation and come to a consensus on the major causes and consequences of land degradation in Palau.

As a result, stakeholders have used the NAP to further guide their own policies and projects related to sustainable land management in Palau. Through the implementation of the NAP several projects and partnerships have been developed to address land degradation.

A direct outcome of the implementation of the NAP is the development of a medium sized project proposal (MSP) for funding by the Global Environment Facility (GEF) under GEF's Operational Programme 15 addressing sustainable land management. Palau began development of its MSP in May and it is slated for completion in July 2006. Through review of the priorities identified in the NAP, stakeholders decided that the MSP will be the development of a comprehensive land use plan for Palau. Although stakeholders are still deliberating on the scope of the MSP, it is clear that the project will include a review of the existing legal framework, and the establishment of both a legal and institutional framework to complement the implementation of a land use plan in each State in Palau.

Whether the scope of the project will be to develop individual State land use plans or a comprehensive national plan remains to be settled by the stakeholders. However, what is clear through consultation is that constraints to the implementation of the UNCCD in Palau continue to be limited human and financial resources.

These topics will be further expanded upon in the 3rd National Report that is currently under development.

PAPUA NEW GUINEA

3.0 Introduction

The Papua New Guinea national government having acknowledged the socio-economic and environmental benefits of protecting the global and national environment whilst pursuing sustainable land development in a comprehensive manner for its people, and further recognizing the national, sub-regional, regional and the global need (as well as effort) to combat desertification/land degradation and mitigate the effects of drought - with a the view to: promoting sustainable development through land based resource management, reducing poverty, and improving food security - ratified the United Nations Convention to Combat Desertification/Land degradation (UNCCD) on the 6th of December 2000.

In accordance with Article 26 of UNCCD and the relevant COP decisions, particularly decision 11/COP 1., and subsequent COP decisions regarding the reporting of measures taken to

implement UNCCD, this report is intended for the UNCCD CRIC 5 review on activities under taken to implement the Convention in the Papua New Guinea.

The resources for this report were identified from government departments, relevant books, reports and newspapers within a short period of time. If more time was made available more resources could be identified.

The report begins by providing a brief background on relevant information about PNG's natural resources and land. It then goes on to point out problems directly and indirectly contributing to land degradation in PNG. A brief description of institutions available that are active in sustainable land management aspects covers most key government and non-government agencies. The report also covers the activities undertaken by the Focal Point to implement UNCCD. These include 3 key workshops and their main outcomes and the establishment of the National Coordinating Body and the development of the GEF SLM1 MSP Capacity Building and Mainstreaming proposal. Before concluding, the report covers the economical and legislative implications of implementing UNCCD in PNG.

Seven tables of key economic and social indicators are provided in Annex. 1, which is attached at the end of this report. The other three Annexes provide an over view of PNG's priority development plan which include the Medium Term Development Strategy (2005-2010) and PNG's Millennium Development Goals and Targets. A table summary of environmental issues is provided for background information as the last annex.

4.0 Background

4.1 The Land

Papua New Guinea occupies the eastern half of the island of New Guinea, sharing a border with the Indonesian province of West Papua (formerly Irian Jaya) to the west, Australia to the South, the Solomon Islands to the East and the Federated States of Micronesia to the north. It has four large islands (Manus, New Ireland, New Britain and Bougainville) and some 600 smaller islands, most of which are located to the East of the 2.4 million km² exclusive economic zone. The mainland is one of the rugged terrains in the world with a central mountain range which is highly dissected, with highest peak reaching 4,350 m (Mt. Wilhelm). The smaller islands include high volcanic mountains and low lying coral atolls. About 97% of land in PNG is customarily inherited by tribes, clans, families and individuals. The government owns most of the 3% of total land area that has been alienated.

Papua New Guinea has a total land area of 46.28 million hectares that contain relatively unspoiled ecosystems, such as fresh mountain water streams and air, humid tropical forests, swampy wetlands, dry grasslands, and pristine river systems, coast, beaches and coral reefs. Of the total land area, about 75 % is natural forest - which contains 5-7 % of the world's biodiversity and provides the basis for 80% of the population who live in the rural areas. Because of the countries rugged terrain and inundation, 58% of the land subjected to severe or strong erosion, another 18% is inundated or constantly flooded while only 1% of the total land is quality agricultural land - and is already under agricultural pressure because of cash crop farming. PNG's arable land/capita of 0.15 ha/capita is much lower than the world average of 0.25 but close to the Asian average. Never the less, taking into account marginal land, up to 30% of the

land is suitable for agriculture, with only less than 10 % currently being utilized. Three quarters of the land is unoccupied mainly because these areas are thought to be of low agricultural production potential due to steep slopes, limestone surfaces and constant flooding.

Over the last two decades, land use has changed considerably in PNG as more land is cleared for agriculture, logging, infrastructure and mining. As population and economic pressure increase, the demand for land for economic survival has forced the people to use as much as possible from whatever arable land that is available for cash crops while subsistence farming is pushed onto marginal arable land. Major mining and logging activities are other activities that have records of unprecedented environmental damage to the natural environment of PNG. Infrastructure construction has not much environmental damage on record, however there are isolated cases where building of bridges has caused much land degradation. Due to the complexity of land tenure most urban centres have limited land to expand in spite of the increasing urban population which is causing illegal settlements popping up in urban centres.

4.2 Forest Resources

About 15 million hectares (32 % of total land area) has been designated for forest production. However, only 6-8 million hectares of natural forest is considered economical for logging. Out of that, about 3.5 million hectares of the economical forest had already been logged by 2000 when the government halted the processing of new permits and reviewed existing ones for compliance with national policies and contracts. An estimated 4 million hectares is left for future logging. From 150 000 – 180 000 hectares of forest is supposedly selectively logged with a 40 year cutting cycle, while 25 000 hectares is cleared for agriculture, clear cutting and infrastructure annually. Rural subsistence farming alone clears about 200 000 hectares of forest per year though much of it would be fallowed areas. There have been experiences where land owners desire for short term cash needs and development have outweighed the long term needs for conserving their land and its resources for future generations. It is good to note that some timber companies such as the Jant Wood Chips Company have initiated reforestation programs with the assistance from the PNG Forestry Authority but the rate of reforestation is still much lower than the rate of clearing for agriculture and logging.

4.3 The Climate

The oceans and land masses surrounding the country are the key determinations of its weather and climate.

Key factors for the climate include:

1. Excess heating due to incoming solar radiation at the equator where the ocean atmosphere interactions provide the favourable moisture source for abundant precipitation typical of tropical environments.
2. Year to year variability of the tropical east-west walker circulation that at times create El Nino patterns.
3. Despite PNG's tropical location, the south coasts of the mainland are actually dry over the period corresponding to the Southern Hemisphere winter.
4. Topography including the orientation of major ranges. While the mainland lies in the west/east direction, most ranges are aligned in the NW/SE direction. Periodical shifts in the wind direction therefore has real potential to alter rainfall patterns of any given location.

The Prevailing southeast trade winds during the months June to October act as a medium for dry air movement responsible for dry conditions over this period. The influence of this southeast trade winds gradually fade towards the equator where deep tropical weather dominates. Over the remaining months from December to April, which corresponds to the southern summer, the major influences are the northwest monsoons originating in Asia. This air flow transports moist humid air and provides abundant moisture over the whole country hence the enhanced precipitation over that period.

The most important mechanism of climate and sea level variability in PNG is related to the ENSO phenomenon. Effects of the southern oscillation show a definite correlation between the SOI and the rainfall patterns of the southern coasts of the mainland but gradually fade towards the equator. Impacts of ENSO on relative sea level changes are significant ranging from 20-30 mm per year

4.4 Water Resources

Apart from the high average of 3000 mm per year rain water with 20% standard deviation, the total area of available fresh water is about 64 000 square kilometres comprising 5383 fresh water lakes and wetlands as well as 14 major rivers. There has been a marked decline (24%) in freshwater swamps from 1986 levels. Only 91 square kilometres is designated as protected (less than 1% of total). Papua New Guinea has one of the highest water resources per capita (about 170 000 cubic meters/person) in the world but ranks in the bottom ten countries for access to safe water and is one of the top countries in water distribution loss (unaccounted water/wastage). In spite of the amount of water resources available, most of it is not feasible to develop for human use due to lack of technical knowledge and skills at village level, and the relatively high cost involved because of the country's rugged terrain. With reference to recent Papua New Guinea population statistics (5.3 million, 80% rural, 20% urban), only 29% of the vast rural populations have access to safe and improved water while the rest take water directly from the source such as surface and rainwater. In contrast, the urban areas have 91 % of their population dwellers with access to safe or improved water but only 60% of households have water piped directly to their houses. In the rural areas, 96% of rural households use traditional sanitary facilities.

4.5 Agriculture

Agriculture is the mainstay of the PNG Economy, accounting for approximately 30% of GDP and about 13% of total export earnings. Cash crops such as copra, coffee, cocoa, rubber and oil palm as well subsistence agriculture based on root crops sustain about 85% of the total population. Surplus production is sold mainly in local markets but also in distant domestic markets. Large amounts of fruits and vegetables are produced in the highlands but inadequate transport and marketing facilities limit the supply to urban areas. Subsistence agriculture accounts for about 45% of total agricultural outputs.

Land suitability for Tree Crops, Arable Agriculture, Pasture and Irrigated Rice.

	Very High Suitability		Very High to High land Suitability		Very High to Moderate Suitability	
Land Use	Km2	%	Km2	%	Km2	%
Tree Crops	7790	1.7	15460	3.3	66950	11.9
Arable	4960	1.1	21890	4.7	44220	9.4
Pasture	14710	3.1	29710	6.3	67290	14.3
Rice	11890	2.5	37980	8.1	61360	13.1

Subsistence farming occupies about 25% of rural land while the remaining 75% is unoccupied, mainly because they have low to very low land potential. Most occupied land has low population density but there are significant increases in the central highlands and on some small islands which show that population density is currently increasing due to improved fertility rates, immigration and little expansion of occupied land. Over 50% rural population have very low income and practice low intensity agriculture. However there are signs of increasing intensity as the number of plantings increase and the length of the fallow period shorten. Rural people with relatively high income generally sell some combination of cocoa, copra, coffee, fresh fruit and vegetables, as well as beetle nut and also receive remittance. Contribution of mining, quarrying and commercial forestry operations to household incomes is significant in some places but only a limited number of people benefit.

In PNG, the most vulnerable to land degradation, economic shock and natural disasters would be the village based population, which depend on subsistence farming for their livelihood and means of cash income for education, transport, health services and other socio-economic services. Those who depend on farming, forestry and fishing would see their livelihood degraded by degraded soils, forests and fishing grounds as well as changes in rainfall. They would be the one who would find it more difficult to change over to new crops and farming practices and methods, acquire cultivable land for continued farming and adopt sound land management practices.

4.6 Disadvantaged People

About 40% of rural population live in low to very low land potential areas. These people are constrained by some combination of poor soil, high rainfall, steep slopes, excessive cloud cover, sea level rise, frequent flooding and low temperatures. People living in these areas often have difficulty growing food for direct consumption and have even more difficulty in growing cash crops. Another 15% of the rural population live in the moderate land potential areas while around 35% live in the limited environment of high to very high land potential and often are able to maintain and improve land through practices such as drainage, composting, mounding and legume rotation.

A large proportion of the limited quality agricultural land in PNG is now under agriculture pressure and cash cropping is bound to force subsistence farmers onto marginal land, which most

likely to further exacerbate the problem of land degradation. These pockets of good areas include the Sepik Plains, Tari Basin, Ramu/Makham Valley, Sogeri Plateau, parts of Northern Province and Rabaul/Kokopo. These areas will face increasing pressure on land as economic activity accompanies population increase.

A large portion of disadvantaged people in the country, as defined and identified in the Department of National Planning Rural Development Handbook 2001, live in the provincial boarder fringes of the highlands such as the following identified most disadvantaged districts: Middle Ramu, Usino-Bundi, Telefomin, Pomoi, Finschhafen, Koroba-Lake Kopiago, Lagaip-Pogera, Menyamya, Nipa-Kutubu, North Fly, Rai Coast, Goilala and Vanimo-Green River as well as on a number of small islands of Bougainville Province like the Cataras. These people are vulnerable to land shortages, land degradation, declining crop yields, and food shortages. They rarely receive government services and have limited cash to purchase supplementary food when required and future income generation is limited. Other districts with low land potential include: Kabwum, Huon Gulf, Kagua-Erave, Kainantu, Kundiawa, Kairuku-Hiri, Rigo, Kerema, Hengenofi, North and South Fly, and Nawae.

In spite of our abundant land and water resources, the current integrated socio-economic and environmental circumstances of Papua New Guinea makes us very vulnerable to the effects of land degradation and drought. The current Government's priority social and economic development plan is its Medium Term Development Strategy (2005-2010), which emphasizes the sustainable use of natural resources for the Country's economic recovery. Given the rugged terrain of the country combined with population increase and economic pressure there is potential for extensive agriculture and deforestation. With reference to human history, the overuse and/or unsustainable use of good land as well as marginal land will lead to land degradation and ultimately trigger reduced income, social chaos, migration, hunger and, in worst cases, the demise of the country if land degradation is not addressed appropriately. Papua New Guinea is trying to ensure within its capabilities that it does not become part of this tragic history.

4.7 Natural Disasters

Moreover, natural disasters such as droughts, mass land slides and floods, over the years, have caused considerable environmental damage, loss of life, damage to national economy and suffering to the lives of our people in Papua New Guinea. The costs to human, economy and environment of such land related disasters have increased quite dramatically in recent times. Too much, too little or too dirty water is having serious adverse impact on national economy, environment and public health. Papua New Guinea infrastructure including the water supply systems are highly vulnerable and are exposed to destruction by hazards such as floods, droughts, earthquakes, volcanic eruptions, general lawlessness and civil conflicts. Damages to these infrastructures pose serious and recurring economic, health and environment risks. This is testified by the ever occurring natural disasters such as earthquakes, volcanic eruptions, mass landslides, floods and droughts which include the recent experiences of the 1997-1998 drought.

Major Recorded Natural Disasters in PNG

Year	Event	Location	Est. Persons Affected	Deaths
2003	Flood	East Sepik		None
2002	Volcanic Eruption	Pago, West New Britain	10,500	None
2002	Drought	Various	200, 000	None
2002	Earthquake	East Sepik		
2002	Earthquake, landslide	Wantoat, Morobe	13,405	9
2000	Earthquake	New Guinea Islands		None
1999	Flood	North Fly, Western	10, 000	
1998	Tsunami	Aitape, Sandaun	124,270	2,227
1998	Flood	East Sepik; Ramu & Mumeng, Morobe Province	--	--

1998	Cyclone & Gale	Milne Bay	50,000	None
1998	Storm	Milne Bay	--	--
1997	Drought/frost	Nationwide	3,159,000	--
1997	Cyclone	Central; Milne Bay	--	--
1996	Volcanic Eruption	Manam, Madang	3,000	--
1994	Cyclone	Milne Bay	--	--
1994	Volcanic Eruption	Rabual, East New Britain	50,000	3
1993	Cyclone	Northern Islands; Milne Bay	50,000	1
1993	Landslide	Kaiapit, Morobe Province	7,000	14
1992	Volcanic Eruption	Manam, Madang	2,000	--
1972	Drought	Highlands	--	--
1957	Volcanic Eruption	Manam, Madang	3,200	--
1951	Volcanic Eruption	Lamington, Oro	3,000	--
1937	Volcanic Eruption	Rabual, East New Britain	8,000	500

-- = No data available

Source: National Disaster and Emergency. Office, June 2004

SAMOA

Located in the northern part of the South Pacific Ocean, Samoa lies between latitudes 130° 25' and 140° 05' S and borders the international dateline at 171° 23' and 172° 48' W longitudes. The total land area is 2,935 km² and/or equivalent to approximately 285,000ha of land. Samoa consists of two main islands (Upolu & Savaii), two other inhabited smaller islands (Manono & Apolima) and several uninhabited small islands and islets. The capital, Apia, is located on the second largest island, Upolu.

Samoa's climate is tropical marked by distinct wet (November–April) and dry (May–October) seasons. The average monthly temperature ranges between 22° and 30° with little seasonal variation, due to Samoa's equatorial location. The average annual rainfall is about 3000 mm with about 75% of precipitation occurring during the wet season.

The latest population census of 2001 records a total population of 174,140 from 161,296 recorded in 1991. There is 8% population increase however significantly small due to dynamics of population movements, mainly influenced by urban-rural and external migrations. The capital, Apia, has a population of about 40,000 people.

The economy on the other hand has been relatively stable over the last few decades by having adopted a development path that depends upon income from aid, remittances, tourism and fishery industry to diversification of agricultural produce. However, the economic growth process has often been interrupted by natural disasters such as hurricanes and droughts which periodically destroy vulnerable plantation monocultures and remaining forests.

From the latter part of the 20th century into the beginning of the 21st century, traditional land-use, apart from settlement areas, was commonly restricted to forest and agricultural use. However, the transition from subsistent living to cash-economy living has produced the current land-use change in Samoa as a result of commercial activities and infrastructural development. These changes have accelerated the problem of deforestation which is identified as the main threat to the survival of land-based ecosystems in Samoa. These ecosystems provide essential life-support system such as maintaining water supplies and soil fertility, protecting forests and forest ecosystems including both marine and terrestrial biodiversity which house significant endangered species. The emergence of deforestation as one of the main agents of land degradation in Samoa is a product of the changing land-use from subsistence to commercial living.

Samoa, with a parliamentary democratic system, continues to enjoy political stability with the HRPP consolidating its hold on political power for the past twenty years. This has created a healthy environment of change.

This report gives a short review of the country profile where applicable (Chapters 1–4) and focuses mainly on land degradation as the main form of desertification in Samoa (Chapters 5–9). In particular, it outlines what Samoa has done in the formulation of its National Action Plan (NAP) under the UNCCD, and the commitment shows to submit its final NAP to the Secretariat by the end of 2006.

SAUDI ARABIA

Prior to this report, the Kingdom of Saudi Arabia had submitted two reports, in 2000 and 2002, regarding the progress made in the implementation of UNCCD. The first report was about the efforts made at the national level in the fields of combating desertification, rehabilitation of deteriorated resources and for the formulation of the strategy and National Action Programme (NAP). The Ministry of Agriculture was appointed as the coordinating body for implementation both at the national and international levels. The second report comprises the efforts made by the national committee for the formulation of the strategy and the NAP for combating desertification that was completed with technical help from the United Nations Environmental Programme for West Asia, the report included a review of related plans and strategies and a number of adopted means concerning the conservation of natural resources. A committee was formed for proposing effective mechanisms to face the natural disasters such as drought and to add the early warning system to the proposed activities and programmes for the evaluation and monitoring of desertification.

This third report focuses on the monitoring of the implementation of the convention. It is prepared according to the guidelines document ICCD/CRIC(3)/INF.3 comprising the following:

1- The Background

The Kingdom of Saudi Arabia lies between latitudes 17 and 32 N and longitudes 35 and 56 E. Most of its area is categorized as arid land except the Empty Quarter which lies in the areas of hyper arid; the Sarawat mountains lies in the semi-arid areas.

1-1 The Natural Resources

1-1-1 Water Resources

The water resources in the Kingdom are divided into surface water, which is collected due to rainfall and estimated to be about 2045 million cubic meters per year, and under ground water in the area of the basement rocks that also relies on rainfall; also there is another deep ground water in the area of the crystalline rocks estimated to be about 1.5 million cubic meters, the thickness of these rocks is about 500 meters. The production of the desalinated water reaches 740, 52 million American gallons daily. The quantities of treated sewage water reached 1.5 million cubic meters per day, and the treated agricultural waste water estimated to be about 32 million cubic meters per day.

1-1-2 Agricultural Resources

The area of the suitable agricultural lands is estimated to be about 29 million hectares representing 14.5% of the total area of the Kingdom, while the area to be reformed is about 3.4 million hectares representing 1.7% of the total area of the Kingdom; the actual planted areas reaches about 4.4 million hectares.

1-1-3 Natural Vegetation Cover

Large diversity exists in the constituents of the natural plant cover, about 2300 plant species exist in the Kingdom distributed between six main ecological plants, the forests occupy about 2.7 million hectares representing 1.35% of the total area of the Kingdom while the natural rangelands occupy about 171 million hectares.

1-1-4 Renewable Energy

The energy resulted from desalination amounted to 144.7 billion kilowatt/hour per day. There are many projects for producing solar energy to be used in desalinization of water, drying of dates, and to secure electricity for remote areas, lighting of tunnels, hydrogen production and also there are many other projects to use solar energy in telephone communications and the protection of oil pipelines from rust.

1-2 Human Resources

1-2-1 Population

The present population of the Kingdom is about 22.6 million with an annual increase of 2.5%, females representing 49.5%. Women have an effective role in rural development in the Kingdom. The Government gave priority for women education in order to enforce their productive efforts to achieve sustainable development through awareness raising. In rural areas, women still participate in range and agricultural activities.

1-2-2 Human pressures on the resources

There are 13 administrative regions in the Kingdom, presently the local communities are practicing agricultural and range activities, this constitutes a pressure on the resources due to agricultural expansion at the expense of forests and rangelands. The recent mechanical means of moving herds quickly from one area to another resulted in severe grazing as well as tree cutting for charcoal production, all contributed in resource degradation.

1-2-3 Economic Pressures on the Resources

Due to the increase of the average personal income, most of the population spend their holidays in local eco-tourism, the local tourism mainly directed towards the forests in the highlands in summer time, and in winter towards the rangelands and coastal areas. Negative effects resulted from this eco-tourism due to the large number of people visiting a limited area.

2- Activities implemented for Combating Desertification in the Kingdom during the period 2002–2005

2-1 Capacity Building

The Kingdom is fostering and implementing a number of activities concerned about artisans and the cultural inheritance of local communities in order to support and implement the convention at the national level. A fund for human resources development is secured. A number of the staff concerned with desertification control were trained and a number of researches were carried out about sand dune fixation and planting of trees with low water requirements.

2-2 Conservation of renewable Natural Resources(soils, water, plant cover and animal resources, domestic and wild)

During the period mentioned, a number of forest sites and rangelands and some of the vulnerable ecosystems were protected, also regular maintenance was carried out for forest sites as well as complementary pest control and alien plants in forest and range areas. Seed production for local range plants was carried out as well as the establishment of a number of nurseries for production of local plants. A vegetation map was produced and an establishment of four new National Parks were started, a project for forest and range inventory was carried out using remote sensing techniques and field measurements.

Government departments encourage multiple use of water, a special project was carried out for an evaluation of quantities and qualities of ground water in some of the Kingdom valleys, and currently a plan made to manage the water resources. Twenty-seven (27) new dams are under construction (their capacities reach about 1690 million cubic meters). Special measures made for the sustainable use of lands in the areas of mining in order to decrease the dust and to rehabilitate these sites.

2-3 Rehabilitation of Ecosystems and the Deteriorated Habitats

In this field, a number of deteriorated forest and range sites rehabilitated through protection, and seed broadcasting and by stepping up of the abilities of seed production centers distributing seeds and seedlings to the farmers. Rehabilitation also is done to the windbreaks of the sand dune fixation project in Al Ahsa and fixation of sand creeping in a number of different sites. A study was carried out about the effects of urban expansion towards the forests in Asir and Najran areas. Rehabilitation of some deteriorated sites of mangrove was carried out as well as establishment of a number of public gardens. A project for rehabilitation of Wadi Hanifah in Riyadh area started, now.

In addition, a project was formulated to specify the deteriorated agricultural lands comprising production of general soil and land resources maps. Green belts were established in mining sites. Two projects were started to evaluate and manage the municipal dump sites.

2-4 Revision, evaluation and Updating of systems and Legislations Concerning the Renewable Natural Resources

The updated Legislation for Forest and Range and the Strategy and the National Forest Programme was approved. Land use and main road network demarcations taken into consideration will lead to protection of forest, range and the important ecosystems. Measures were made for ecological assessments in ecotourism development sites, the Council of Ministers issued a decision approving the treated sewage water system and its reuse and the regulations for this system were formulated. In addition, the regulations for wastes and the municipal dumping sites were approved. The owners of marble and small mines should produce environmental impact assessment for their projects.

2-5 Monitoring and Evaluation of Drought and Desertification

The natural range in the northern areas were monitored, soil maps produced to show deteriorated sites and the causes, and currently a manual for evaluation of deteriorated areas is under preparation at a national level. In addition, a project is under way to monitor the specifications and quantities of soil lost by wind erosion in Riyadh area, while a project implemented to monitor the degree of desertification and causes in the southwest area of the Kingdom; 300 monitor wells established for monitoring ground water.

2-6 Synergies and ways of cooperation with the International related treaties and Conventions for evaluation and desert control

A study for forestry outlook was prepared and currently a project started for monitoring and rehabilitation of junipers forests in cooperation with the Food and Agriculture Organization of the United Nations (FAO).

Also the first national report for climate change in the Kingdom was prepared, strategies for biological diversity, forage strategy, a draft for agricultural strategy and the national plan for water were formulated.

2-7 Environmental Awareness Raising towards Desertification Control

A number of articles published in the Agricultural Magazine. A number of leaflets were issued by the Ministry of Agriculture concerning subjects such as combating desertification, sand dunes fixation, the international day for combating desertification, deteriorating of rangelands in the north, forestry encouraging tourism, land deteriorations, tree planting weeks, afforestation of dry lands, roadside tree planting, raising some of the important plants in Al Gassim, looking after trees etc. Also television and radio broadcasting programmes were carried out concerning desertification control and environmental conservation, the yearly tree planting week, and the international programme called (Do not leave a footprint) which aimed to make awareness among tourists in the natural sites. A number of directive signs erected in the forest and range areas, the Kingdom prepared a unified programme to celebrate the international year for deserts and combating desertification in 2006, seminars, workshops will be carried out, stickers and a postal stamp for this occasion will be issued.

3- Desertification Indicators

The report produced describes the way followed in the Kingdom to specify the indicators, objectives, effective levels, the main issues and the indicators for every issue.

SRI LANKA

Sri Lanka is not a desertification-prone country and falls within the context of land degradation and drought mitigation of the United Nations Convention to Combat Desertification (UNCCD). The Ministry of Environment functions as the focal point for the Convention. The measures taken to combat land degradation in Sri Lanka commenced even prior to the adoption of the Convention.

The need for combating land degradation has been addressed in previous and present governments' policy document, Vision Statement, and political manifestos, which promise sustainable development in the social and economic atmospheres. The measures to combat land degradation, more specifically soil erosion, have been deeply addressed in the environment action programmes, which are prepared in light of the government's sustainable development agenda. The environment action plans ensure conservation as well as mitigatory measures to control land degradation. National Action Programme (NAP) for Combating Land Degradation has been formulated in the light of these plans and South Asia Subregional Action Programme has been prepared in the context of NAPs of country Parties of South Asia.

The major forms of land degradation in the country are soil erosion, coastal land erosion landslides, salinization, water logging, siltation, and water pollution. Soil erosion, among other forms of land degradation, is known to be the most acute form of degradation that seriously affects the people and the economy. Soil erosion is mainly found in the central highlands where major rivers drain from and experience high rainfall regimes. Siltation/sedimentation of low lands and man made large reservoirs built for the purpose of irrigating agricultural lands and generating hydropower has been seriously affected. Salinization in the Dry Zone has received less attention although there is strong relationship with crop production. Landslides are another phenomena prevalent in the country and as a result loss of lives and property has taken place to remarkable extents. Other forms of land degradation receive less significance in the present day context.

In this context, NAP has been formulated in year 2002, encompassing all the forms of land degradation and suggests mitigatory measures. It ensures participation by all stakeholders and identifies their responsibilities.

There is no specific body set up to combat land degradation in the country. Instead the Ministry of Environment functions as the umbrella organization and is empowered by acts and ordinances to perform functions associated with land degradation. Further, many agencies responsible for NAP implementation come under the purview of the NFP and has authority over them. These organizations are also empowered with relevant acts and ordinances. However, a few agencies do not come under the purview of national focal point (NFP). The NFP is assisted by the National Expert Committee on land degradation, which functions in an advisory capacity. The institutional framework within the country comprises several elements. The Ministries Secretary's Committee functions as the highest administrative authority, and District Committees of Environment make decisions within the District. The Committee on Environment Policy and Management (CEPOM) has been devised to address issues which have environmental dimensions of development activities conducted by sectoral development Ministries.

The availability of funds directly for the implementation of NAP related activities is not sufficient. However, the agencies coming under NFP responsible for NAP implementation has partnerships with donor agencies through donor funded projects. These projects, as discussed in the text, provide financial and technical assistance to the relevant agencies. However, substantial investments have to be made, since the projects cater only to a limited number of years and institutionalization of the activities in to routine activities of the agencies is necessary. The main stakeholders are the government, non-governmental organizations (NGOs), community-based organizations (CBOs) and private sector and community at large.

The NGOs associated with the United Nations Development Programme (UNDP) small grants programmes are actively engaged in land degradation control activities. Many other NGOs are engaged in similar activities. The private sector participation in environment and land degradation related ventures is fairly weak and limited to ad hoc environmental conservation projects.

The main actors engaged in mitigation of land degradation are the Forest Department (FD), Department of Agriculture (DOA), Land Use Policy Planning Division (LUPPD), Mahaweli Environment of Forest Conservation Division (MEFCD), Tea Research Institute (TRI), Rubber Research Institute (RRI), Coast Conservation Department (CCD), Geological Survey & Mines Bureau (GSMB), Department of Meteorology, and NGOs. Every agency has its own agenda and mandate and NFP has made attempts to bring them in to a single forum.

A landmark event took place with an exercise conducted by NFP to assess the agencies and their degree of interventions and geographical distribution of interventions in land degradation and future projects / programmes proposed. The objective of the exercise was to take measures to fill the gaps and harmonize activities. A coordinated effort is required by all the agencies to meet the obligations of the Convention.

SYRIAN ARAB REPUBLIC

2. Summary

Introduction

Syria is a dry and semi dry country with limited water resources, the area of Syria is 185179.71 km² and the population growth rate is high as it increased from 9.046 million in 1980 to 18.138 million in 2005, which increased pressures on the resources especially soil and water and obviously on AL-Badiah (steppe land) an area of 10.2 million hectares, and an annual rainfall of 200 mm. Land degradation increase has been attributed to cultivation, over grazing, deforestation, soil salinity, in addition to forest fires. Land degradation in Syria increased by more than 59% of total area due to such factors.

The priority of the Syrian Government is land degradation and desertification that have been increasing to a large extent leading to negative consequences.

This phenomenon is considered as the main reason for natural resources deterioration and yield decrease, human suffering, sand dunes, increasing poverty standard, and slowing down economic development.

There for combating desertification projects expanded, the amount 107,506,700,000 thousand Syrian pounds was allocated for the projects in the tenth-five-years plan (2006-2010) noting that the Ministry of Agriculture and Agrarian Reform is one of the stakeholders involved in combating desertification projects.

This report presents a summary of the efforts and measures taken to implement the UN Convention to Combat Desertification and showing the phases of its development.

3. Strategies and priorities established within the framework of sustainable development plans and/or policies:

National plans and strategies available in other social and economic fields:

I. National Development Plans:

Syria participated in the Global Conference for Sustainable Development in 2002 and is fully aware of the importance of relationships between economic and social development and the importance of natural resources management to reach sustainable development. The government included programs of combating desertification land degradation mitigation in the sustainable development plan and national development plans.

The most important plans are:

- a. The seventh social and economic development plan for 1991-1995.
- b. The eighth social and economic development plan for 1996-2000.
- c. The ninth social and economic development plan for 2001-2005

This plan concentrated on environmental issues particularly combating desertification and determines the means to prevent the negative effects of such cases:

- formulating an integrated program to develop AL-Badiah and rangeland management and increase the services offered to the local population.
- reclassify forest areas and their environmental division, and invest in them economically, combat firers, and support governmental institutions.

This plan focused on supporting projects under construction, in addition to implementation of new projects related to desertification combating and enhance living standard for the rural communities.

The tenth social and economic development plan for 2006-2010:

The tenth five year plan forms an extension to the economic reform policies which have started in the ninth yearly plan (2001-2005) as this period experienced very important changes in the public life of the Syrian society. In term of economics, it was translated in the open economy and attracting the private investment in many sectors which were restricted for the public sector such as banks, insurance, and other activities.

At the same time the government prepared the suitable services which needed in the business sector by releasing, adjusting, and modernizing many of related laws and legislations.

The tenth five yearly plans are distinguished from others in many ways:

- Adopting the indicative planning.
- Participatory methodology in formulating aims.
- Adopting the future expectations.
- Developing and following a national system for priorities in projects selection.
- Linking up planning and implementing stages.
- Clarity in allocating the roles in implementing the plan.
- National plan with regional and local plans.
- Adoption the poverty control plan.

In addition, the tenth-five-yearly-plan includes many national plans' programs to combat desertification especially in the steppe and basins, and many other issues related to the plan implementation. For example:

1. Create job opportunities and poverty alleviation by:
 - Link up economic policies with poverty alleviation and considering social cost.
 - extend economic opportunity for poor and less developed regions by projects and programs.
2. Environmental sector and disasters management:
 - mitigating all pollution aspects, combating desertification and conserving biodiversity.
 - design a national plan to facing environmental emergencies and mitigate pollution and making a time-table to implement the environmental plan.
3. Developing the Eastern region:

Design a special development plan for Al-Badiah region in the three governorates which comprise 40% of total area of Syria and include 17% of the total population.
4. Irrigation and Agriculture sector:
 - Steppe development in Al-Badiah.
 - determining effected regions and create projects to prevent land degradation and rehabilitating it for investment.

- improving irrigation efficiency by using modern irrigation systems.
- protecting water resources from pollution.
- creating firm legislation to protect steppes.
- Integrate the priorities of agriculture research with issues to help sustainability of resources and improve environment.

* The attached tables to the Arabic version show the above point.

II. Poverty reduction strategies paper:

The main aims at the end of tenth five year plan in 2010 are to decrease the ratio of population who live under high line of poverty (about 5.3 millions) to 30.13%, and decrease the ratio of population who live in extreme poverty (about 2 million) from 11.39 % in 2004 to 7.8 % in 2010, then to reach 7.13% in 2015.

In addition, the report determine eight directions and properties related to the mutation in poverty range and distribution in Syria from 1996 – 2004.

*for more details refer to the Arabic version of the report.

III. National strategy for sustainable development:

The National Strategy is being finalized, however the framework of the strategy include the following themes:

- Poverty reduction and decrease of unemployment.
- Strengthen rational utilization.
- Development of education sector.
- Sustainable use of land resources.
- Sustainable management of water resources.
- Participate of the private sector.
- Agriculture and rural development.
- Sustainable tourism.

IV. Environmental action plans:

- National environmental action plan.
- National plan to combat desertification.
- National plan of biodiversity.
- Agricultural policies.

V. National Agenda of 21st Century:

The Arabic version of the report and the previous report for 2002 has more details.

Institutional arrangements taken to implement the convention, including legislative and institutional frame or arrangement, linkages and coordination faces with other environmental conventions and, as appropriate, with national development strategies:

- National action plan as a part of the national economic and social plans and development protection:

According to the strategies and plans, the national action plan to combat desertification is integrated with other national plan for social development and environment protection and it considered as a part of it. The tenth-five-year-plan tried to enhance the participation of the private sector and filling the gaps between sustainable development policies and undertaking one (strategy of poverty reduction, education strategy, and water legislation).

According to the proposal of State Planning commission, projects plan were adopted by the Economic Committee of the Cabinet to be presented to the donors for funding and to be considered as a priority in the government's plans and join some of these projects of Al Badiah and basins programs in the tenth five yearly plans (2006-2010).

- achieved linkages with sub-regional and regional programs:

- Establishment and functional national coordination body:

National coordination body (NCB) is linked to the Ministry of Local Administration and Environment, chaired by the Minister of Local Administration and Environment. The NCB plays an important role in enhancing the sustainable administration of lands within the program frameworks, as it represents all concerned bodies in combat desertification. All members of NCB have all rights to get all information and data and provide it to the related focal points and using all techniques to deliver information.

- Institutional framework for coherent and functional desertification control:

The implementation of national plan to combat desertification and carrying out items of the convention haven't been implemented with out active institutional framework. The framework consists of the following:

- 1) Environmental Protection and Sustainable Development Council.
- 2) Ministry of Local Administration and Environment.
- 3) State Planning Commission.
- 4) Ministry of Agriculture and Agrarian Reform.
- 5) Ministry of Irrigation.
- 6) Ministry of Housing and Construction.
- 7) Ministry of Information.
- 8) Educational Institutions and Research Centers.
- 9) Public Organizations.
- 10) Non-governmental Organizations.

There are additional important six points in activating the implementation of the national action plan which weren't included in the previous report:

- Rename the Environmental Protection Council to Environmental Protection and Sustainable Development Council.
- Allegation of Environmental Affairs and Ministry of Local Administration to became Ministry of Local Administration and Environment.
- Participating of State Planning Commission strongly in determining the priorities of social and economic development and sustainable development, focused on poverty issue and link it with land degradation and combat desertification.
- Establishing many of non-governmental organizations related to environment and sustainable development and including land degradation & combat desertification in its priorities.
- Include some programs of national plan to combat desertification in the tenth five yearly plan (2006- 2010) and linkage plans with indicators.
- Establishing the Eastern Region Development Committee (at the ministerial level).

- Coherent and scientific legal and regulatory frame:

The laws and legislations which were issued during the last few years are considered an important frame in carrying out the national action plan to combat desertification:

- o Environmental law number (50) issued in 8\7\2002.
- o Forest law number (7) issued in 20\6\1994 .and recent amendments.
- o Water legislation law number (31) issued in 16\11\2005.
- o Transformation to modern irrigation decree number (91) in 2005.

These laws aimed to conserve soil, mitigate land degradation, and combat desertification. In this context we have to support what was included in the tenth five-year plan (2006-2010). The projects and the mainstreams and considered natural resources management, especially soil & water, the main phase of economic transmutation and social economy and enhancing the role of local communities and local authorities in making decisions related to land degradation and combat desertification and enforcement of the local administration law in achieving the decentralization.

5. Participatory process in supporting the preparing and implementing the action programs, particularly processes concerning the civil society, non-governmental organizations and community-based organizations:

- Active participation of relevant sectors in defining national priorities:

Relevant institutions to combat desertification contributed directly in preparing and supporting the implementation of national action program in all fields.

Many awareness activities were executed in many subjects such as:

- 1) Increased the danger due to over utilization of the ecological and sustainable systems with the frame of drastic climatic phenomena.
- 2) Advocate the participation in the rural development and considering this as an important issue in poverty reduction.
- 3) Confirming the economic and social results of the immigration as a result of land degradation and poverty.
- 4) Combating land degradation is less cost than the bad obstacles of desertification.
- 5) Exchanging expertise, and distribution of successful projects.

6. Consultative process to support the preparation and implementation of national action programs and partnership agreements with forth-going country parties and other related entities, particularly mobilization and coordination both of national and international resources.

- Effective support from international partners for cooperation:

Many important steps were executed to insure the participation of international partners in the financial support to execute the national plan to combat desertification, such as:

- 1) Approval of Economic Committee which chaired by the prime minister to request the donors particularly the German side in financial support of the plan program and reducing some debts, on the other side implementing the programs by the Syrian Government and follow up by the German side.
- 2) Arranging a round table meeting for the donors represented by many countries such as (Canada, Switzerland, France, Finland, Japan, Holland, and Kuwait) and many Banks and international supporting organizations.
- 3) A Plan was developed and a pilot project in the affected area was implemented with the support of the UNDP and Dry land Developing Center (DDC).
- 4) The Global Mechanism of the Convention contributed to the financial support to arrange another meeting for the donors and mobilizing support for the national action plan program.

- 5) A draft project was prepared in cooperation with GEF for the Eastern Region in Syria which aims mainly poverty alleviation and developing affected areas. Approval of this project was in condition with the connection point of the UNCCD.
- 6) The State Planning Commission is the interdependent is the party to coordinate efforts with donating parties in cooperation of the focal point.

7. Procedures taken or planned within the frame of national action programs included that aims to improve the economic environment and conserve natural resources and encourage it's sustainable use, and to rehabilitate degraded land, and enhancing knowledge related to combating desertification and drought mitigation.

- Adequate diagnosis of past experiences:

The process of Combating desertification has attracted a great attention due to the importance of land resources in Syria. All priorities of relevant plans and strategies are land resources and its sustainable management. This was reflected positively in the socio-economic five-year plans, particularly the tenth five- year plan (2006-2010). During the ninth-year plan (2001-2005) many actions related to combat desertification were implemented by relevant ministries.

- Forestation, deteriorated areas rehabilitation and expansion of the rehabilitated project's areas.
- Expansion of the grazing protectorates, from (750000) hectares in the previous report to 970000 hectares.
- Focusing on natural resources administration.

Establishing modern irrigation projects and many developing projects, and preparing important strategies related to resources management such as poverty strategy, human development (education) which were included in the tenth five year plan (Arabic attachment No2) and agreement of economic committee to present the programs included in the national action plan to combat desertification, to the donors to find additional opportunities for funding and implementation. It is necessary to point out that data for land degradation and to combat desertification needs a lot of work to be updated.

- Technical programs and integrated programs to combat desertification process:

Many projects are implemented in Syria, all are related to national resources management, especially decrease land degradation and combat desertification which comply with the principles of UNCCD and was reflected in the NAP through what were implemented by the ministries and stakeholders.

- **Projects implemented by the Ministry of Agriculture and Agrarian reform:**
 1. Forests development.
 2. Integrated Development Project in Al-Badiah.
 3. Drilling and equipping wells in Al-Badiah.
 4. Development of Al-Badiah.
 5. Directorate of range development and national protectorates areas.
 6. Survey of natural and agricultural resources in Syria by using remote sensing technique and GIS.
 7. Green Belt Project around Deir Elzour.
 8. Forest protection and combat fire.
 9. Forest development.
 10. Rural development in Jabal Al Huss.

11. Transmutation to modern irrigation.
12. Coastal and Middle Region Agricultural Development.

- **Projects implemented by Ministry of Irrigation:**

1. Project of Flood Treatment and Rehabilitation of Al seha plain.
2. Project of Second priority Rehabilitation in southern Aleppo plains.
3. Al Rasafa Basin rehabilitation project (Al rakka Governorate – Eastern Region).
4. Third phase of the Eastern Al Balikh Rehabilitation project (Al rakka governorate – Eastern region).
5. Rehabilitation project in Al journea plains.
6. Project of Rehabilitation eight sector of lower Euphrates (Deir El Zour mohafathat- Eastern Region).
7. Project of Rehabilitation of lands near al Khabour River (Deir El Zour mohafathat- eastern region).
8. Project of Rehabilitation first region rest of lower Euphrates (Deir El Zour mohafathat- Eastern Region).
9. Modern Irrigation Fund.

* (more details are included in the Arabic version of the report)

- **Effectiveness of measures of local capacity building:**

Syria is currently following a modern economic system. Through the social market economic system which depends on decentralization, the local authorities were given wide validities to administrate institutions and local activities in all fields as training the local and non-governmental organizations in accordance with plans and strategies which have been approved.

8. Financial allocations from national budgets in support of implementation as well as financial assistance and technical cooperation including their inflows, and processes to identify their requirements, funding, priorities.

- **Adopted financial mechanism:**

The Syrian Government is committed to provide financial support for the projects related to combat desertification and natural resources conservation.

Allocating financial support mechanism is within plans of concerned ministries and commissions to combat desertification and land degradation.

The required funds allocated after the approval of State Planning Commission and approved by the government, then it allocated on the plan's years in January of every year then transferred to the concerned implementing sectors.

The State Planning Commission contacts the donating international organizations to get additional financial opportunities. For example, GEF will finance a project in the eastern region aiming at combating desertification:

- **Project of Sustainable Integrated Administration in Eastern Region:**

The Initial document of the project aims at sustainable integrated administration for lands in eastern region (Al Badiah and the Euphrates Basin), and to prepare final project and implement for eight years to review the problems of land degradation and desertification and soil salinity. The facility Initial document allocated finance as follow:

- Global Environment Facility (GEF) contribution 350000 \$
- Dry Land Development Center (DDC) contribution 25000 \$
- UNDP contribution 30000 \$

- The Syrian Government contribution. 132000 \$
- United Arab Emirate contribution. 2500 \$

The Final document of the project will be financed by:

GEF/ 4.5/ million \$ and the Syrian Government / 10 /million \$

The Syrian Government is encouraging investments in dry lands through income generating projects as small donations and revolving funds.

-Finance of the National Action Program:

Some projects of National Action Plan to combat desertification (which were changed to programs) were included in the economic and social five-year plans. The Syrian Government allocated a huge amount of money to carry out the activities as it was illustrated in the report. The total amount to carry out the projects and activities included in the tenth- five-year plan is (107,506,700,000) Syrian Pounds. In addition, some projects are financed by external resources or as donations, but this kind of projects is limited and the participation of Global Mechanism and external finance resources do not correspond with what is allocated by the Syrian Government for projects of combating desertification (as it was illustrated in the Arabic version of the report).

Technical cooperation developed:

The Syrian Government decided to use irrigation technology, and allocated 73.8 billion Syrian pounds, in addition to sub regional cooperation by UNDP office in Western Asia.

Syria is hosting the Thematic Program Network Management for Agricultural Use. However, Syria did not get any technical cooperation in the field of combating desertification yet.

9. Review of benchmarks and indicators to measure progress and assessment:

Operational mechanisms for monitoring and evaluation such as:

- Using remote sensing and GIS (index 4)
- Using drought and early warning strategy (index 5)

There isn't any special observatory system to study & evaluate national action program, even though many suggested projects in the program become a part of social and economic of tenth five-year plan (2006-2010) which will be followed up and evaluated.

10. Newly introduced indicators, according to decision 10/m a-5:

- Scientific and technical desertification control activities:

The most important technique used in the field of combating desertification are using transmutation to modern irrigation project in addition to using hollows to collect water and use it for animals and water harvesting, which include the net work of water resources management for agricultural use.

- Implementation of the recommendation of the Science and Technology Committee:

Many activities and recommendations of Science and Technology Committee are used in the field of combating desertification and mitigate drought impacts. For example, the institutional side of implementing the Convention especially the connection between desertification, poverty and education which was focused in the tenth five-year plan, in addition to what was included in the NAP such as using and improving traditional knowledge, using early warning system for

drought controlling within the national drought strategy in addition to other activities of environmental capacity assessment project (Assessment of the UNCCD and UNCBD and UNFCCC), training, using modern technologies (Remote Sensing and GIS).

* For more details, refer to the projects, activities, and plans which were included in the report.

TAJIKISTAN

The problem of land degradation and desertification every year gets increasingly urgent. The basic driving factors of desertification are change of a climate, cutting down of woods, wrong methods of irrigation, overexploitation of agricultural lands and overgrazing.

All these factors have led to decrease in a standard of living of the population. The low level of incomes has caused strengthening negative consequences of land degradation and desertification.

Despite of riches of water resources and high moisture of some areas, the part of territory of Tajikistan desert. Up to 40-50 % of East Pamir, the small areas (30-40 thousand hectares) southern and northern Tajikistan in the lower reaches of the rivers Pjandzh, Vakhsh, Kafirnigan and Syr-Darya here concern. Natural desertification is traced in many natural zones that are connected with position of Tajikistan among large deserts of the Euroasian continent - Gobi, Kara Kum, Kyzyl Kum and Taklamakan.

There are strengths and weaknesses in each country during the realization of the United Nations Convention to Combat Desertification (UNCCD) which depend on complexes of social and economic, political, ecological and other factors. The analysis of the Republic Tajikistan economy development for last years shows that, as a result of the measures accepted by the government on realization of structural transformations in economy and acceleration of economic reforms, it will reach essential growth on a number of economic parameters that have positive influences on realization of the National Action Programme to combat desertification. The strengths of the country in relation to realization of the UNCCD , first of all, depend on behaviour of the state bodies, financing of actions on struggle against land degradation, etc. To increase the strengths for realization of the UNCCD by the government a number of the vital problems and first of all greater acceleration of process of economic transformations, strengthenings of the further development of various patterns of ownership in all spheres, including measures on struggle against desertification, overcoming of a drought and other kinds disasters and increase the standards of living of the population within the framework of sustainable development policy are solved.

The strengths:

- On August 12, 1997 Republic Tajikistan officially joined the UNCCD;
- In December 1998 the UNCCD has been ratified by the Decree No 1144 of the President of the country;
- The National Action Programme to combat desertification is prepared;
- National seminars are held in various regions of the country on different problems of desertification with various layers of the population, including women and youth;
- The Second National Forum was held, attended by state, public and non-governmental organizations;

There are taken following measures which also enter into strengths of UNCCD realization:

- The Programme of economic transformations of agricultural complex for 1995-2003. There are accepted a number of Decrees of the President and the Governmental orders according to this programme, such as: Decrees “About reorganization of the agricultural enterprises and the organizations”, “About measures to increase of soil fertility, to preservation and improvement of environment” and many other things;
- Under the initiative of the President of the country and support of the population with a view of preservation, duplication of forest resources and struggle against desertification, since 1993 to the present, actions on gardening are annually spent;
- With the purpose of preservation and rational use of lands, stay of land degradation and overcoming desertification, the governmental order of the country No 294 “About the state control over use and protection of the lands in Republic Tajikistan” is accepted in 1997:
- With the purpose of perfection of system of nature protection education and transition to qualitatively new level of a professional training and education of the population concerning preservation of the environment and its rational use, in 1996 the government accepts the Programme of ecological education of the population of the Republic of Tajikistan till 2000 and on prospect till 2010. In this Programme the great value is given also to education of a society concerning struggle against desertification and to overcoming drought;
- With a view to maintenance of rational use of natural resources of the country, maintenance of an optimum condition of the lands, pastures, forests, water resources, atmospheric air, a condition of biological balance, protection of rare and disappearing kinds of flora and fauna, improvement of health of the population by the Government, the State Ecological Programme for 1998–2008 is accepted;
- With a view to preservation of the irrigated lands from salinisation and process of desertification in a zone of irrigated agriculture, the Government of the Republic of Tajikistan accepts the Programme on improvement of the irrigated lands for 1998-2003;
- With a view to satisfaction of needs of the population and the national economy of the country in grain and grain products, increasing the level of food security of the country, in 2000 the Government accepts the Programme of increasing of grain crops productivity and increasing in manufacture of grain in the Republic of Tajikistan in 2001-2005;
- For overcoming a level of recession of development of agriculture and acceptance of measures on improvement of this branch with the purpose of increasing production volume in 2000 the Intermediate term programme crisis recovery of agriculture of the Republic of Tajikistan and priority directions of strategy of development of its branches for the period till 2005 is accepted;
- With a view to elimination of infectious growth and other illnesses and stay of deterioration of health of the population, especially in countryside, the Government of the country in 2001 accepts the Concept of reform of public health services of the Republic of Tajikistan. Before the Programme of reforms in public health services of the Republic of Tajikistan till 2001 has been accepted;

- For overcoming process of desertification in the country and in conformity to the context of the UNCCD in the country the Governmental order No 598 “About the acceptance of the National Action Programme (NAP) to combat desertification” was accepted on 30 December 2001. This programme is the basic document of the country to combat desertification;
- The Document of Strategy of Poverty Reduction (DSPR) is approved.

All these undertaken steps testify to concern of the Government of the country on preservation of natural resources and strengthening of struggle against desertification in the Republic of Tajikistan and are strengths in realization of the basic ideas of the UNCCD.

It initiative in the decision of problems of desertification and acceptance of measures on its simplification is one of the cores as all reasonable decisions should be scientifically proved. One of most strengths of realization of the UNCCD is the scientific potential. In Tajikistan there is an experience of the scientifically proved actions on struggle against desertification, and also, the control over them. For this purpose a number of scientific research institutes which were engaged in studying various methods of overcoming land degradation and mapping of desertification zones have been created. Besides there was conducted the supervision over degradation of pastures by means of geobotanical inspections. All these actions basically, were financed by the state budget.

Except abovementioned strengths in Tajikistan there is a powerful source of realization of the UNCCD –local communities and non-governmental organizations (NGSs). Realization of some actions on struggle against desertification in the form of khashar (voluntary joint activity of the population), is well proved method of attraction of wide layers of the population, including women, youth and even children.

As well as strengths in realization of the UNCCD in Tajikistan there are also weaknesses:

- Insufficient financing;
- Shortage of the literature on basic ideas UNCCD in national language;
- Insufficient attention from the international organizations;
- Weak coordination between the state bodies which deal with various problems of desertification;
- Absence of monitoring;
- Weak knowledge of wide layers of the population on basic ideas of UNCCD in Tajikistan;
- Weak development of technical base;
- Non-observance of traditional methods of struggle against desertification;
- Absence of an opportunity of rational use of natural resources for local population;
- Non rational use natural resources by the local population;
- Insufficient explanatory work with local population.

It is necessary to note, that the society in figurative expression plays the main role in sustainable development of the country. On the one hand the society can reveal itself from a strength, i.e. the behaviour it can suspend erosive processes, raise soil fertility, increase the forests area, reduce development of dynamic processes, rational use the resources, etc. On the

other hand the society is weak in realization of UNCCD, i.e. to strengthen development of desertification.

Tajikistan has joined the UNCCD according to which, seminars are held, and the National Action Programme to combat desertification is developed and approved. In the State Ecological Programme the measures on prevention of erosive processes on various regions of Tajikistan are stipulated.

Legislatively, the problems of desertification are considered within the framework of land protection from degradation in the Land Code. This document stipulates sanctions for the irrational use of the land resources which have caused development of erosion, salinisation and bogging of soils. In the Law on bowels the norms of land tenure are established at conducting mountain works. Mechanisms of consecutive land recultivation are stipulated at extraction from bowels of minerals. The Law on wildlife management obligates the nature users to provide safety and rational use of land resources.

Numerous efforts on prevention of land degradation are accepted by the government; however, serious deficiency of financing does not allow realizing all the planned measures. Attraction of target international investments and increase in budgetary financing is required.

The basic directions of actions on improvement of the land resources conditions, decreasing the risk of soil degradation and prevention of consequences of desertification are:

- Establishment of requirements to a pasturable turn, grazing of public, farmer and private cattle;
- Definition of requirements and criteria of use of the lands of steep slopes, and prohibition of their illegal and unreasonable use;
- Introduction of soil- and water-saving methods of an irrigation;
- Restoration of collector-drainage networks;
- Protection, restoration and expansion of the area of large forests;
- Improvement of high-mountainous pastures and planting of bushes vegetation;
- Providing access of rural population, especially in mountain regions, to alternative (renewed) energy sources;
- Monitoring of the desertification process;
- Development of recommendations and instructions on rational land tenure;
- Increasing the role of local population and communities in struggle against land degradation and desertification.

Considering, that on a problem of desertification all complex of the basic environmental problems influences – change of a climate, cutting down of woods, losses of biodiversity, degradation of water resources – the development of the National Action Plan (NAP) on preservation of the environment, combining the integrated approach is very actual. Also perfection of legislation on the given problem is necessary.

Now the significant areas of semi deserted - deserted ecosystems are alienated for cultivation of agricultural products and in their territory it is observed the overgrazing. Here the high degree of a fragmentation in view of development of an automobile high system is observed. Processes of land degradation also disturb the balance of this ecosystem.

Middle mountain ecosystems are used for rain-fed crops. It quite often causes soil erosion and is accompanied by clearing of the additional lands. There is also a big influence of cutting down of woods, overgrazing, gathering of herbs and development of the mining industry. More than 40 mines, pits and mountain manufactures are located in this zone, thus there are no actions on land recultivation.

The ecosystems of reservoirs as a result of seasonal fluctuation of a water level, mainly in water basins, appear subject to influence of erosion of a coastal line, as for example, in area of Nurek water basin. Degradation of these ecosystems occurs in view of available flow of the rivers and pollution of reservoirs.

Negative tendencies are seen in high-mountainous ecosystems under influence of overgrazing, grubbing of bushes vegetation in last years. Poaching on rare representatives of fauna takes place: snow leopard, Siberian wild goat, etc.

In bottom zone of highest tops in places of climbing and tourist camps, thousand tons of household waste, fragments of techniques and equipment are left. It considerably reduces recreational value and appeal of these ecosystems. Besides the increasing influence on a condition of these ecosystems renders the global climate warming; therefore their area tends to reduction.

Constantly increases the influence on historical landscapes. Many monuments of history, archeology and ethnography have appeared much mentioned and now require protection more and more. It concerns rock drawing of the Stone Age on Pamir, traces of ancient metallurgists in Shirkent and Adrasman, sites of ancient settlement of Penjikent, Gissar and other objects.

Tajikistan ratified a number of the international conventions, including the Convention on Biological Diversity, the UNCCD, the Ramsar Convention on wetlands, and the Convention on the Conservation of Migratory Species of Wild Animals. All this is good preconditions for harmonization of protecting ecosystems of Tajikistan and all central-Asian region.

Institutionally, the State committee on nature protection and forestry, the State committee for land management, local authorities, administrations of reserves, areas protection, the historian-natural and national parks are engaged in protection of ecosystems.

Within the framework of realization of the State Ecological Programme measures on restoration of vulnerable landscape complexes on separate ecological areas of Tajikistan are stipulated. In developing the national strategy and action plan on preservation and sustainable use of biodiversity it is applied highly effective ecosystem approach to realization of reciprocal measures.

For ordering a state policy in the field of wildlife management and with a view of increasing of a level of public consciousness and formation on these questions in Tajikistan, the State Ecological Programme of the Republic of Tajikistan (1996) and the State programme of ecological education of population of the Republic of Tajikistan (1997) have been developed and approved.

The state documents under the decision of the most important environmental problems are developed: the National Action Plan on hygiene of an environment (2000), the National Action Programme to combat desertification (2001), the National programme and action plan on the

termination of use ozone-destroying substances (2001), National strategy on public health care (2002), National Action Plan on mitigation of consequences of climate change and the First National Report on climate change (2002). The National report on sustainable development (2002) is prepared. The National strategy and plan of action on preservation of a biodiversity (2003) is at the stage of completion. Tajikistan takes part in development of the Subregional Action Plan on environment protection.

Considering the urgency of global environmental problems and their close communication with local conditions and a condition of an environment, the republic has joined and ratified a number of the major international agreements, including:

- Vienna Convention for the Protection of the Ozone Layer (1996);
- Montreal Protocol on Substances that Deplete the Ozone Layer (1997);
- Convention on Biological Diversity (1997);
- United Nations Convention to Combat Desertification (1997);
- United Nations Framework Convention on Climate Change (1998);
- Ramsar Convention on wetlands (2000);
- Convention on Conservation of Migratory Species of Wild Animals (2000);
- Convention on access to information, public participation in decision-making and access to justice concerning in environmental matters (Aarhus Convention) (2001);
- Stockholm Convention on Persistent Organic Pollutants (POPS) (2002).

The national report is prepared on the basis of the Guide submitted by Secretariat of the UNCCD where all necessary information on the Republic of Tajikistan is presented.

THAILAND

The Kingdom of Thailand is a tropical country with a total population of 64.233 million and total land area of 514,000 sq. km. Climate is humid and mean annual rainfall is 1,579.3 mm. Rainy season starts from May to Oct. and dry season starts from Nov. to April.

Thailand has acceded to the United Nations Convention to Combat Desertification (UNCCD) on March 7th, 2001. The Thai UNCCD Office is under the leadership of Ministry of Agriculture and Cooperatives, set up at the Land Development Department of Thai Government, responsible of all UNCCD implementation under the supervision of National Coordination Body which composed of twelve ministries, departments and governmental offices. Following the UNCCD, Thai UNCCD Office has validated its NAP in March 2004 and this NAP has been integrated into National Poverty Reduction Strategy, which is one of the main parts of Ninth National Economic and Social Development Plan 2002-2006. The following Acts and State Laws have been adopted:

1. Land Development Act;
2. National Land Reform Act;
3. National Forest Act;
4. National Park Act.

Thailand faces following challenges:

Harmonization of national policies and strategies

During the compilation, formulation and validation of Thai NAP, the following four sources of policy and strategy were taken:

- 1) The Constitution of the Kingdom of Thailand 1997 in section 79 and 84 provide basic principles on public participation, accession to land holding by farmers, supporting means to achieve maximum benefits;
- 2) The Ninth National Economic and Social Development Plan (2002-2006) has been put in place the management system of natural resources with clear idea of share responsibility, transparency and practicability. People in community and local administrative units will be delivered knowledge and information for active participation. Priorities of the 9th NESDP are in line with solving the nation's urgent problems;
- 3) Government policy supports farmers to have adequate land for livelihood by implementing a comprehensive land utilization policy and optimizing the use of idle land. Management efficiency of water resources at every level will also be improved to suit production system of each crop and terrain conditions. Emphasis will be placed on full participation of people in restoration, conservation and development of land on upstream as well as in river basins, reservoirs, irrigation canals, water quality, and piped irrigation;
- 4) A strategic plan of the Ministry of Agriculture and Cooperatives was considered a strategic guidance from formulation process up to successful implementation of the National Action Program for Combating Desertification.

Inter-department coordination and collaboration

Practically, the inter-departmental cooperation can be officially done as usual by establishment of specific steering committees and working groups to serve specific purposes. Since Land Development Department (LDD) was assigned by Thai Government to be the National Coordination Body. The LDD itself operates under Land Development Act (1983) which is governed by Board of Land Development.

Coherency of the NAP with other environmental strategies and planning frameworks

The NAP is consistent with both the Ninth National Economic and Social Development Plan (2002-2006) and the Policy and Perspective Plan for Enhancement and Conservation of National Environmental Quality (1997-2016) in focal areas below:

1. Natural resources are resource base for sustainable development and utilization is based on conservation,
2. Public and community participation is a key role for resource management and administration, and
3. Strengthening local institutions and grass-root level for resource management.

Financial resources

Financial budget for the Secretariat Office of Thai National Coordination Body is being annually allocated by the LDD. All office spaces and facilities and admin service of Thai NFP and NCB are supported by LDD through its annual budgetary plan. The office receives the same amount as it was established by Thai Government and the number of staff and posts remain the same as its beginning. Thai UNCCD Office expects to open and establish channels to mobilize resources to implement its NAP at provincial and community levels through partnership building and bilateral or multilateral sources.

Legislation

The environmental legislation is coherent and functional in both prevention and remedy as a whole. Still, there is a need of some specific legislations and enforcement to control land use and management in private own land for example land and water conservation act.

Adaptation of current legislation and introduction of new enactments are needed in Thai legislation processes:

1. Land tenure reform;
2. Decentralization;
3. Natural resources management (forest code, pastoral code, extraction industries guidelines, etc.)

NAP does not indicate particular projects that deal with law enforcement relating to the combat against desertification. However, law enforcement, incentives, and compensation have been foreseen for supporting some specific implementation activities like soil and water conservation and land use planning.

Thailand stresses the following priority areas

Participatory processes in the implementation of NAP and its related activities

There are evident showing that participatory processes are effective with regard to continuous exchange of success stories among volunteer soil doctors as well as engaging in the proposal to suit their requirement. Active broad involvement of grass root citizen is the essential of the success of the NAP implementation. Technicians and technical officers from governmental offices or provincial subdivisions are substantially encouraged to transfer their technical discoveries and best practices from labs to field and help farmers raise their income in sustainable way, particularly in the affected regions under the threats of drought, salinization, landslide and deforestation.

Private sector

Private sector has been increasingly involved in NAP implementation but no gender element specifically indicated, however, no any prevention or disadvantages for women to involve in any program of the NAP. Private sector increasingly plays a cooperative role in supplying materials for sustainable land use practices.

Information and technology

The LDD has established an interactive internet system and information to serve public with expert to response to all the questions raised by interested persons and entities. In addition, the LDD provides best practices, traditional knowledge, know-how and technology for land users to manage their land in sustainable way and all kind of booklets on new techniques developed by national or local institutions and scientists to local communities and extension services at various levels. Sub-LDD stations in all provinces organize seminars, workshops, training courses to local farmers, land contractors and provide organic fertilizers, botanical species for soil protection and water conservation, drought-resistant varieties and anti-salinization plants while conducting on ground extensions in affected provinces.

National consultations at the local level

The concerns of national consultations at the local level are being focused on awareness raising and participation on food safety and sustainable land resources management. Consequently, the demand for food safety technology such as biological accelerating agents of the LDD keeps increasing.

Technical and scientific capacity

In brief, the main features for capacity building at the institutional, participatory and consultative levels within the NAP process include:

1. development of Geo-information technology,
2. organizing consultative meeting for planning and monitoring purpose,
3. conducting innovative research,
4. allowing access to information system and interactive communication and
5. provision of training for staff, volunteer soil doctors, and farmers.

Monitoring of Land degradation

By and large, the processes and dynamics of land degradation are being monitored but priorities have been given to higher level of intensity and immediate impact on people livelihood. Drought monitoring is prominent among others. Practically, soil salinization and soil erosion have been monitored in some specific localities where there is a need for urgent reaction.

Assessment of degradation rate

Forest cover has been monitored by interpretation and comparison of the data from the satellite imagery. Soil erosion has been estimated and compared by the application of the universal soil loss equation considering the change in cultural practices and vegetation cover. Expansion of saline soil received from interpretation of satellite data considering the effect of saline on crop growth and forming of salt crust on top soil. Resource degradation can be attributed to drought and climate change.

Early warning mechanisms

Early warning mechanism has been set up to inform public about risky areas where drought, flooding and land-slide may occur. However, there is a need for innovative technology and networking for up to date and more accurate warning system. The Public Service Outcome system has been adopted to ensure successful implementation of NAP and the impact of NAP can be achieved from how the implementation meets the targets.

TURKMENISTAN

Turkmenistan joined the United Nation Convention to Combat Desertification (UNCCD) in 1996. The following year, 1997, the National Action Programme (NPA) to Combat Desertification was designed by effort of the scientists of the Deserts Research Institute of Turkmenistan. The Third National Report on implementation of the NAP in Turkmenistan presents information on activities conducted after submission of Second National Report in 2002.

In order to integrate UNCCD realization into national development, the priorities of the NAP were included into the national and bilateral development plans and programmes, such as the National Environmental Action Plan of the President of Turkmenistan (2002), Strategy of Economic, Political and Cultural Development of Turkmenistan till the period of 2020 (2003), United Nations Development Assistance Framework (2004), Country Programme Action Plan 2005-2009 (2005), Central Asian Country Initiative on Land Management (2004).

At the national level realization of the UNCCD is closely linked to implementation of the NEAP. The State Commission on realization of country's obligations under United Nations environmental conventions continues to function within the structure of the Ministry of Nature Protection. The Working Group on UNCCD is one of the eight working groups composing the structure of State Commission. The State Commission plays the role of the National Coordinating Body (NCB) while the National Institute of Deserts, Flora and Fauna is a National Focal Point (NFP) to Combat Desertification. National Focal Point hosts a Center on Desertification Combat which is headed by the National Coordinator of UNCCD in Turkmenistan equipped with a team of experts.

After submission of Second National Report significant changes took place in environmental legislation. New Land and Water Codes were adopted in 2004. In Land Code a special article stimulates the responsibilities of land users to conduct pasture conservation measures and not to lead to land degradation. To reinforce the existing legislation the measures on information dissemination are necessary to increase responsibilities of state institutions for rational use of nature resources.

In Turkmenistan no special financial fund to combat desertification was established. Nevertheless, there are numbers of state sectoral funds which direct their resources to implementation of sectoral investment projects to combat desertification. Since 1996, State Environmental Fund of Turkmenistan is functioning to provide financial support to nature conservation measures.

Despite the governmental and international interventions to combat desertification in Turkmenistan coherent and coordinated realization of activities under UNCCD is hindered by programmatic and methodological shortcomings of the NAP. With the view of more effective realization of Rio conventions a project National Capacity Self-Assessment (NCSA) financed by the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP) started in 2004. The project reveals shortcomings of existing NAP, such as: (i) weak consultation mechanism during design phase, (ii) lack of coherence with national planning and budget, (iii) weak intersectoral cooperation, (iv) lack of monitoring and evaluation mechanism and as a consequences (v) low attractiveness for external cooperation. The NCSA project proposes capacity building action plan, one specific recommendation of which is a updating of existing NAP. Presently, NFP conducts negotiation and consultation with external partners to seek for financial and consultation support for updating the NAP based on lessons learnt.

It has been already mentioned that NAP is realized through the governmental and international initiatives. It should be added that after submission of the Second National Report new subregional programmes were initiated under UNCCD, such as: Subregional Action Programme for the Central Asian Countries on Combating Desertification in UNCCD Context (2003), Central Asian Countries Initiative on Land Management (CACILM) (2004) and Central Asian Subregional Training Programme for Sustainable Land Management (2005). Launching of subregional programmes gives a stimulus for more coherent and consolidated efforts on UNCCD realization in the context of Central Asia. The results of NCSA project and the National Programming Framework of CACILM will be effectively used for harmonization of existing national plans and programmes.

After submission of the Second National Report measures were taken to involve civil society and non-governmental organizations (NGOs) to the process of implementation of UNCCD as well as the measures to support local communities. In 2005, the NGO Society of Nature Protection of Turkmenistan was elected as the focal point of the International Network of Non-Governmental Organizations for Desertification (RIOD). This fact gives a chance to expand the scope of RIOD in Turkmenistan. Besides, in 2004, the project of UNDP and the Global Mechanism “Promoting Community Based Sustainable Land Management and Capacity Building in Central Asia” was commenced in Turkmenistan with objective to support capacity building of RIOD and local communities for better natural resources management.

One can state a fact, that during the current phase the capacity building component is given much bigger attention at the national and local levels. Nowadays in Turkmenistan, many projects include the capacity building component while working at the level of local communities and creating rural extension services. At the national level attention is given to creating an enabling environment for land use and strengthening feedback mechanism between governmental structures and land users. Focus is shifted to optimization of existing documents and structures.

Currently, wider involvement of scientific and technical activities to the process of planning and realization of projects on dissemination of technologies and know-how takes place in the country. Broad consultation mechanism initiated under CACILM provides the opportunity for scientific and technical experts from all institutions of the country to participate in formulation of priorities for combating land degradation.

Hence, once can observe significant changes in approaches to implement the UNCCD in Turkmenistan since the time of submission the Second National Report in 2002. Such changes

are marked by creation of conditions for broader stakeholders participation to the planning process, harmonization of existing plans and programmes, intersectoral cooperation, effective consultation and negotiation with external partners.

The Third National Report has been prepared by the National Center to Combat Desertification. Thirteen experts of different fields of expertise contributed to the preparation of National Report. The National Coordinator of UNCCD in Turkmenistan, Dr. Muhamet Durikov and Assistant of the National Coordinator, Dr. Jamal Annaklycheva, are responsible for the development of the Report.

TUVALU

Tuvalu acceded the United Nation Convention to Combat Desertification (UNCCD) in September 1998. This Third National Report gives updated information on measures taken by Tuvalu to support the implementation of the UNCCD. This background information also explains the procedures involved for the communication of information. The final section of this document deals with how the National Action Plan (NAP) was compiled.

Tuvalu is a highly fragmented tropical state comprising nine atolls and low islands located 5-11°S and 176-179°E. The total land area of the country is only 26 km² spread within a sea area of over 900,000 km². The islands are low in relief and subject to cyclones, variable rainfall and tidal inundation. The existing environmental and socio-economic challenges facing Tuvalu are limited land for housing and development, shortage of groundwater resources, erosion, and problems of disposal of solid and liquid wastes.

Tuvalu does not only place great importance to desertification/land degradation rehabilitation at the national level and to the implementation of her NAP, but also pays serious attention to the cooperation between countries of Parties, to the implementation of the UNCCD and to the global efforts to combat desertification.

Land Degradation and Drought hazards in Tuvalu

Within Tuvalu's context, the pattern of land degradation and drought affecting the land varies in causes and formation. This includes more and more trees being cut down, damaged or killed on the islands as a result of increase infrastructure development. Here the islands are very thin and fragile and vulnerable to damage by storms. The islands are low in relief and subject to cyclones, variable rainfall and tidal inundation. Clear evidence of inundation and saltwater intrusion has become more pronounced over the last decade and coincide with spring tides. As a result, salinity in soil increases considerably with coastal erosion extensively affecting some parts of the islands. This is further exacerbated by the fact that Tuvalu's soil is of poor quality, which supports a limited variety of flora.

In addition to that, although surface freshwater reserves such as river and lakes do not exist in Tuvalu, natural underground freshwater lenses are an alternative which people can turn to on the islands. However, these underground reserves are now contaminated from increase wastewater infiltration, an issue that is closely associated with rapid increase of the population as experienced currently on the main capital island of Funafuti. Not only that, root crops such as

pulaka¹ which form an essential part of the subsistence economy have been damaged due to inundation and saltwater intrusion. Further deterioration of such magnitude was clearly shown by the 1998 El Niño drought and massive extraction of groundwater. Similarly, the impact of sea level rise on coastal infrastructure, beaches and the coastal communities of Tuvalu will be detrimental.

In addition to the problem of desertification/land degradation, sea level rise and drought are also considered as the most important climatic induced threats of concern to Tuvalu in the long term. All impacts of climate change are likely to be exacerbated by changes in socio-economic and environmental factors, which are expected to occur independently of climate change. Population increases will result in more wastes, increase the demand for water and land and worsen the effects of inundation and erosion.

Increased pressure on natural resources is expected to compound effects of land degradation on both terrestrial and marine ecosystems. These effects are unlikely to be simply additive and there are fears that they may lead to the collapse of parts of the natural resource base of the country.

Concrete activities for implementing UNCCD and effects

Establishment of coordination unit

Since the adoption of the UNCCD in September 1998, Tuvalu has developed its first and second national report and the National Action Plan (NAP) which was completed recently. The Tuvalu Government has also set up the Tuvalu National Coordinating Committee (TNCC) in 2006 with an objective in mind to effectively carry out the implementation of the UNCCD. The TNCC is made up of stakeholders from various sectors of the Government, community and non-governmental organizations (NGOs). Its Secretariat that is the focal point of the UNCCD is located within the Department of Environment. Its main responsibilities are to provide guidance, supervision and coordination of the work in combating land degradation and drought preparedness at the national level.

Strengthening Legal Guarantee System

- Although formal environmental legislation has been drafted for the country, this has not yet been passed. Most environmentally related policies currently in existence in the country are in the form of approximately 20 Acts and additional bylaws associated with the local government on each island. In the meantime, there is an absence of an overarching institutional environment arrangement, which is one of the main drawbacks that has hindered the proper management of the environment in Tuvalu. The Government of Tuvalu through the Environment Department is currently proposing to recruit an expatriate who will specifically responsible to review the National Environmental Management Strategy (NEMS) and to formulate an environment policy. Tuvalu is a signatory to a number of international environmental agreements. These include: the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, the UNCCD, the United Nations Law of the Sea Convention, the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on

¹ Pulaka – (*Cyrtosperma chamissonis*) a gigantic taro-like tuber plant.

Substances that Deplete the Ozone Layer, and the International Convention for the Prevention of Pollution from Ships.

Sustainable development programme and the priority area

In the efforts to protect the environment and to realize sustainable development, the Tuvalu Government's National Strategies for Sustainable Development recognizes the importance of sustainable development – development without compromising the ability of future generations to meet their needs. The Environment Department is the only government agency that deals with all environmental related issues in the country. In the meantime, the NAP has just completed and still pending for administrative clearance. The key locations and main projects of the priority areas of the Plan includes: the Water Management in the northern islands of Nanumea, Nanumaga Niutao and Nui; Tuvalu Community Tree Care Project which targets all the nine islands; Developing a National Environmental Protection Legislation; Water Catchment Development for the main capital island of Funafuti; Tuvalu Land-Based Protected Area Survey Project and an Integrated Solid Waste Management Project for Funafuti as well.

Compilation and implementation of NAP

The Tuvalu Government formulated its NAP in early 2006. The formulation of the NAP is in line with UNCCD and Chapter 12 of Agenda 21 of which seven specific programme areas are outlined to enable small island developing States (SIDS)s to address and combat problems relating to desertification/land degradation. In developing the NAP, three areas of great importance were identified from the seven specific programmes that are relevant to Tuvalu and also require immediate attention if our efforts in managing Tuvalu's fragile ecosystems are to be realized. These three areas are:

- Combating land degradation through, inter alia, intensified soil conservation, afforestation and reforestation activities;
- Developing comprehensive drought preparedness and drought-relief schemes, including self-help arrangements, for drought-prone areas and designing programmes to cope with environmental refugees;
- Encouraging and promoting popular participation and environmental education, focusing on land degradation control and management of the effects of drought.

The framework of NAP

The issues of land degradation and drought in Tuvalu are unique in their own situation and therefore this has raised the need for a coordinated and strategic approach to sustainable natural resource management. The NAP was developed in the framework of a collaborative participatory approach which focuses on the involvement of all level of the Government, the local communities, the church and NGOs. Such approach identifies the practical steps and measures to be taken to combat desertification in specific ecosystems. The NAP also addresses the underlying causes of land degradation and drought, and identifies measures to prevent and rehabilitate it.

Strategic Objectives in Different Phases

Tuvalu has identified the following strategies as means of addressing land degradation under the UNCCD framework:

- Developing a partnership with local institutions and communities and NGOs for an effective implementation of land degradation control;
- Coordinating the implementation of UNCCD, CBD and UNFCCC activities to ensure synergy and effectiveness;
- Strengthening cooperation with related regional institutions, regional UNCCD Thematic Programme Networks and international organizations;
- Establishing priorities and developing action plans through active involvement in the decision-making by local communities in the implementation, monitoring and evaluation;
- Awareness raising about ensuring a good quality environment and sustainable land management;
- Ensuring that the activities are holistically concerned about the unique characteristics of the community in the respective degraded land (integrated and sites special projects)

Priority Areas

The priority areas of the NAP include seven main aspects:

- Providing enabling activities, for example; strengthening of existing legislation to support the programme and/or enacting new laws to support implementation of the programme if necessary;
- Land degradation inventory and monitoring such as the inventory and mapping of degraded land using geographic information systems and hazard maps;
- Prevention of land degradation. This could be done by promoting urban and community greenspace activities;
- Rehabilitation of degraded land such as developing coastal erosion mitigation action plans;
- Establishment of Sustainable Land Management Plans through providing assistance and capacity building to government and private organizations, island communities, traditional leaders, as well as individual landowners, on the benefits and techniques of development of sustainable land use plans;
- Monitoring and mitigating the impact of drought through establishing and improving early warning systems;
- Integrating of traditional knowledge into modern ways by collating traditional knowledge from island elders and leaders and incorporating it into sustainable land management practices.

Guarantee System to Implement Projects

The guarantee system for implementing projects should include clear defined responsibilities to all levels of the Government, local governments, communities, the church and NGOs for implementing the project. The establishment of sound mechanism to implement project, the adaptation of advanced practical technologies and research results through a precautionary approach, and promotion and optimization of management mechanism of project are the

essential guarantees.

Finance Support for NAP

Despite of the very limited financial resources, the development of the NAP was made possible with the valuable financial and technical support of the UNCCD Secretariat and the Global Mechanism for UNCCD.

UZBEKISTAN

1. Краткое изложение национального доклада

Преамбула

Для Республики Узбекистан, 80 % территорий которой занято пустынями и полупустынями, вопросы борьбы с опустыниванием и засухой занимают приоритетное место в обеспечении устойчивого развития.

Около 10 миллионов гектаров пастбищ нуждаются в коренном улучшении. Перевыпас скота, вырубка лесов на топливо и другие цели привели к значительному сокращению древесно-кустарниковой растительности в пустынной зоне. Площадь лесного фонда сократилась, в сравнении с 1965 годом, в два раза.

Подвижные пески на территории Республики Узбекистан занимают около одного миллиона гектаров, двести тысяч из которых возникли в последнее время по периферии орошаемых массивов, что представляет собой серьезную угрозу активизации процессов опустынивания.

Деградация земель происходит и на орошаемой территории, вовлеченной в сельскохозяйственное производство. Более 50% орошаемых земель подвержено вторичному засолению. На площади более одного миллиона гектара пахотных земель развита водная эрозия.

В течение последней четверти века происходит деградация одного из крупнейших замкнутых водоемов мира – Аральского моря, уровень которого понизился на семнадцать метров, а акватория сократилась более чем в два раза. На месте осушенного дна Аральского моря возникла новая песчано-солевая пустыня, площадь которой составляет более тридцати тысяч квадратных километров. Изменение климата, ландшафта, фауны и флоры, увеличение соле-пылепереноса в Приаралье и на прилегающей территории активизируют процессы опустынивания в этом регионе. Ухудшение экологической ситуации оказывает прямое и косвенное негативное влияние на качество жизни 35 миллионов жителей в бассейне Аральского моря, на состояние их здоровья.

Эти обстоятельства объясняют активное участие Республики Узбекистан в работе над подготовкой и осуществлением Конвенции ООН по борьбе с опустыниванием и засухой. Республика Узбекистан первая из всех государств Азиатского региона и СНГ ратифицировала Конвенцию и приняла активное участие во всех этапах ее подготовки.

Правительство Республики Узбекистан выполняет ряд проектов, направленных на борьбу с опустыниванием. Эти проекты, связаны с обеспечением сельского населения чистой питьевой водой, газификацией населенных пунктов, развитием малой энергетики с использованием альтернативных источников энергии. Большие работы проводятся по изменению структуры сельскохозяйственных культур, отказу от монокультуры хлопчатника и увеличению посевов зерновых культур, овощей, кормовых трав.

Выражаем искреннюю признательность Секретариату Конвенции ООН по борьбе с опустыниванием, Глобальному Механизму Конвенции ООН по борьбе с опустыниванием, Азиатскому Банку Развития, членам Соглашения о стратегическом партнерстве, UNEP, UNDP за поддержку Республики Узбекистан в вопросах осуществления Конвенции ООН по борьбе с опустыниванием и засухой.

1.1. Стратегии и приоритетные направления в рамках планов устойчивого развития и политики.

Для Республики Узбекистан стратегическими целями устойчивого развития определяются:

- обеспечение здоровой и плодотворной жизни каждого гражданина;
- поступательный и стабильный социально-экономический рост и духовное становление нации;
- завершение структурных и институциональных преобразований;
- формирование демократического государства и социально-ориентированной рыночной экономики;
- оздоровление экологической ситуации, преодоление последствий Кризиса Аральского моря;
- рационализация и эффективное земле и водопользование и других природных ресурсов;
- борьба с опустыниванием и улучшение окружающей среды.

1.2. Институциональные меры, предпринятые для осуществления КБО.

В 1995 году Олий Мажлис Республики Узбекистан (Парламент) ратифицировал Конвенцию ООН по борьбе с опустыниванием и засухой.

Создан координационный комитет по выполнению НПД по борьбе с опустыниванием.

Агентством по выполнению КБО ООН определен Узгидромет, который от имени правительства РУз активно участвует в международной деятельности по КБО на республиканском и на локальном уровнях.

В основе правового регулирования экологических отношений положена Конституция Республики Узбекистан, законы, указы, нормативные и правовые акты Президента, Правительства, международные обязательства, ведомственные акты.

1.3. Участники процессов внедрения НПД.

Участниками процесса внедрения НПД в Узбекистане являются правительственные органы и Государственные институты, местные органы управления, неправительственные организации, представители широкой общественности, жители районов, подверженных процессам опустынивания. Широко привлечены ученые, специалисты водного и сельского хозяйства, женщины и молодежь, студенты.

Активное участие во внедрении НПД принимает Секретариат КБО. Разработаны технические мероприятия по борьбе с опустыниванием, проводятся научные исследования, предпроектные и проектные работы по проблемам опустынивания, укрепляется межведомственное, межгосударственное, межрегиональное сотрудничество в решении задач по выполнению КБО.

1.4. Меры, предпринятые или планируемые внутри рамок НПД.

Определен стратегический подход к решению проблем развития страны, национальные цели и приоритеты. Происходит консолидация населения на реализацию национальных целей, привлечение широких социальных слоев к решению задач НПД. Широко используется международная помощь, формируются новые национальные научно-технические кадры. Разрабатываются системы: инвестиционных программ, мониторинга устойчивого развития, укрепления структуры НПД.

1.5. Финансовые ассигнования.

Все взносы Республики Узбекистан на период 1999-2006 гг. в Конвенцию ООН по борьбе с опустыниванием полностью уплачены.

1.6. Обзор индикаторов, используемых для оценки прогресса.

Группой экспертов был подготовлен доклад, в котором отражены потребности и роль национальной системы информации по борьбе с опустыниванием в Узбекистане. В докладе отражены многие идентификаторы, которые являются необходимыми для оценки опустынивания. Эта информация распространена среди заинтересованных организаций государственных, неправительственных, университетов, докладывалась на региональных семинарах. Было предложено, чтобы подготовленные материалы использовались более широко, и были включены в информационную сеть обмена.

VIET NAM

In Viet Nam, according to the latest inventory, there is still 9.3 million ha of desertified land (28% of the total land territory of the country), among which 7.3 million ha of unused land and 2.0 million ha of seriously degraded land. The land has completely lost its biological productivity due to erosion, landslide, laterization, acidification. The forest resources have also been significantly depleted. In 1943, there was 43% of forest cover. However, due to many reasons, the forest cover had been decreased down to 28% in 1990, and after almost 60 years with a number of efforts, it has been reached back to 36.7 % by 31 December 2004. Forests had been seriously destroyed in two periods: 1960-1970 and 1976-1990. Forest loss made more serious land degradation, significant deterioration of ecosystems and watershed areas. Beside that, the water pollution had also become more and more serious problem due to overuse of chemicals in agriculture, uncontrolled management of industrial wastage. The underground water has deteriorated in quantity as well as in quality. It is estimated that the lack of water will be a serious problem in the next decade. During the last 10 years, droughts have happened more seriously in the whole country, but especially in Central Region. The most serious and longest drought over the last 65 years happened and lasted 9 months during the dry season of 2004-2005

due to the climate change, with tremendous loss for agriculture and forestry activities in many regions, especially in Central Highland and in Central Region. Land cracking and soil erosion have also become more and more serious in Cuu Long river delta. A survey has recorded 51 cracking points with 350 ha of land lost every year. It is estimated that the total land lost by cracking and erosion will reach to 10,000 ha. The sea resource exploitation has also been another reason of water and land pollution.

Realizing the importance of international cooperation in combating desertification, Vietnam ratified several conventions on environment and in 1998, Vietnam became the 134th country Party of the United Nation Convention to Combat Desertification (UNCCD).

Vietnam has long and narrow deserts. The yellow and white sand areas are located along the central coastal areas with 419,000 ha and in Mekong River Delta with 43,000 ha. According to a map drawn by the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), there are about 462,000 ha of coastal sand area (1.4% of the total geographical area of the country) and 87,800 ha out of this are the yellow sand dunes. The sand areas are concentrated in 10 central coastal provinces from Quang Binh to Binh Thuan with the total area of 400,000 ha. During the last thirty-two years (1967-1999) there has been a serious desertification process. Every year, there is a loss of 10-20 ha of agriculture land due to the sand dune moving. In the above-mentioned provinces there is a very arid hot climate with annual rainfall only 500-700 mm (the arid hottest is Binh Thuan province). Some international environmental experts when they visited those sites had seen the similar landscape as in Africa because the climate and natural conditions of the areas were similar to those in some areas of Africa. Besides sand areas, there are 2 million hectares of seriously degraded land scattered all over the country, but particularly in Northern mountainous areas and Central Coastal Region.

The desertification process is summarized and characterized by the following factors:

- It is the process of land degradation, unfertilized for flora growing;
- It is the result of deforestation by inappropriate agricultural practices, extensive logging and chemical using during the wars;
- It is the cause of soil erosion;
- It is caused by unsustainable land use;
- It is the cause of extensive water use;
- It is caused by sand dune moving;
- It is a result of water and soil pollution;
- And it is the impact of extensive silvopastoral practices.

Since 1989, the economic system has changed from the concentrated planned mechanism to market oriented mechanism. And since then several programmes and projects not only in socio-economic development but also on environment protection have been intensively implemented. Viet Nam, since that time benchmark, has not only presented its great progress in hunger eradication. Viet Nam continuously holds the second position in rice export (The rice export of Viet Nam in 2005 with 5.2 million tons) but also committed its responsibilities in global environment protection propagation. The Year 1990 has been the milestone marking a significant achievement of Viet Nam in environment protection. A number of laws relating to desertification combating process had been formulated during the period 1990-1998 and revised or developed as new laws during the recent years, such as Law on Water Resources 1999, Land Law 2003, Law on Forest Protection and Development 2004, Law on Environment Protection 2005. Viet

Nam has stressed its responsibilities and commitments in joining the world in global environmental issues by signing agreements to become a member of several international conventions on environment. A number of programmes and projects have also been intensively implemented since 1990. Viet Nam also has developed Viet Nam Agenda 21, National strategy on environment protection, National Strategy on Forestry Development, National Strategy on Science and Technology Development, National Strategy on Irrigation Development, National Strategy on Growth and Poverty Reduction, National Action Programme to Combat Desertification, etc. All the strategies had been developed for the period 2006-2010 and the Vision to 2020.

Beside the great achievement, there are still, however, many problems and constraints caused by the economic changes. There is still lack of adequate knowledge of people on environment protection. The environment protection is still not mentioned as the major issue to be taken in many provincial plans on socio-economic development. A more appropriate policy system for environment protection is still to be adjusted and adopted to meet the new requirement of the new development period.

In this situation, being a member of several international conventions on environment issues as well as of UNCCD is an essential further step of Viet Nam in joining to the global environment propagation and in setting up long-term strategies of the country on environment protection and sustainable development, not only for the development of international and regional community but also for the long future of the country.

The national report has followed exactly the Guidelines of UNCCD in decision 11/COP.1. It has drawn briefly the main information on environment protection as well as in land conservation, forest protection and development, water conservation and sand dune fixation activities of Viet Nam. This report is the working result of National Coordinating Body for UNCCD, that consist of reliable information sources of Government agencies, the national and international organizations and the collaboration/cooperation among the representatives of the Government Office, the Ministry of Foreign Affairs, the Ministry of Planning and Investment, the Ministry of Science, Technology and Environment, the Ministry of Agriculture and Rural Development, the Vietnam Forestry Science Association, the United Nations Development Programme (UNDP), the World Conservation Union (IUCN), the Swedish International Development Agency (SIDA), etc. and the executing agencies of international programmes and projects ongoing in Vietnam. The report is also the result of a national workshop with the participation of many other social, economical, environmental sectors and institutions relating to the environment protection and sustainable development in Viet Nam, which was held in Hanoi on 4 May 2006.

The report also draws up some achievements and lessons learnt from the past experience in the process of combating desertification, results of forest development, natural forest rehabilitation, plantations for sand dune fixation, agro-forestry development, drip irrigation system, etc. It also stresses the important role of local people and community, including women, in activities related to desertification control.

The report has also mentioned the organization structure of National Coordination Body (NCB), the key information on National Focal Agency and the participatory approach for NAP development process.

The important role of international cooperation and the necessity of integrated programmes/projects to mobilize all available resources as well as technical assistance in the process of combating desertification are also emphasized. The great contribution in term of financial support and technical assistance of international organizations, of government and non-government organizations in activities on desertification combating in Vietnam has also been highly appreciated.

YEMEN

The Republic of Yemen, more than any time before, realized the impacts on the environment during the last three decades that have resulted from the degradation as consequences to the growing population pressure. The population of Yemen according to the 2004 census approached 21,700,000. This has lead to developing human activities, rising pressure on natural resources and ended with imbalance between human being and the environment. The effects of this imbalance appeared in vegetation cover, agricultural land, water, and soil resources. In addition, this imbalance slowed the development pace and this lead to deteriorated quality of life.

The progressive desertification can be observed in all eco-regions; the desert, coastal and mountainous region. Specifically, the southern and northern-east regions (Hadramout, Shabwah, Marib and Aljawf) are exposed to serious degree of desert encroachment. The height of dunes in these areas exceeds 100 metres. The water erosion, as well, is continuing threat in the main wadis and high lands. The coastal region (from the Yemen boarder along the Red Sea in the north to Hodiedah Governorate in the south and from Almahrah Governorate in the east to Bad Almandab in the west) suffered from the active sand dunes that invaded the residential area, industrial area, agricultural land, roads and water resources.

The last study, executed in 2002, by the Agricultural Research and Extension Authority (AREA) showed that Yemen area covered 455,502.471 square km and there are different types of land degradation. The land area that is not suitable for any kind of use was found to be 389,179.842 sq. km. The total degraded area by the water factor was 50,706.09 sq. km, the wind factor affected 5,781.886 sq. km, the area affected by salinization was 370.896 and area affected by physical degradation was 127.175 sq. km. Thus, the sum up of the degraded area becomes 56,858.151 sq. km. Desertification increased due to the irresponsible usage of forests and rangelands through over cutting, over grazing and malpractices for agricultural lands. Therefore, the Yemen government hastens the ratification and approval of the United Nations Convention to Combat Desertification (UNCCD) in 1996, to share with the international societies the efforts in combating desertification.

This report shows the Yemen's efforts in implementing the UNCCD with the available resources. However, difficulties and obstacles stand as hurdles for full implementation of the Convention. The report also shows the continuous bilateral and multilateral cooperation to obtain financial and institutional support.

The report followed the UNCCD Secretariat's guidelines in respect of the items and tables 1-8.

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