

IMPLEMENTATION OF THE
UN CONVENTION TO COMBAT DESERTIFICATION

Second National Report
Nepal

His Majesty's Government
Ministry of Population and Environment
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Executive Summary

Nepal's State of the Environment (SOE) report, 2001 prioritises land degradation and desertification as significant environmental issues because of "too much water" and "too little water" situation, and physical, biological and socio-economic conditions. Wind erosion also prevails in deep valleys, trans-Himalayan region and the Terai. Drought is experienced even in wet season. The ratio of precipitation to evapo-transpiration ranges from 0.02 to 0.77 in some areas indicating arid, semi-arid and sub-humid characteristics. With due consideration of these phenomena, the Ministry of Population and Environment (MOPE) - the focal ministry for UNCCD - organised a national workshop as a part of National Action Programme (NAP) formulation process in December 2001, conducted some studies, and drafted NAP during the last two years. This Second National Report follows the format outlined in decision 11/COP.1 and the Second Reporting Process on UNCCD Implementation Help Guide (ICCD/CRIC (1)/INF.5). This report attempts to update the national report submitted to the UNCCD Secretariat in April 2000 and include measures taken within the last two years.

Sustainable Development Plans, Strategies and Priorities

Nepal has mainstreamed national development policies, plans and strategies towards poverty reduction. A poverty reduction strategy has a target of increasing GDP growth from 2.7 to 4.0 per cent, non-agricultural GDP growth from 5.7 to 8.0 per cent, revenue from 10.2 to 13.1 per cent, and national saving from 17.8 to 20.7 per cent over a period of five years. A long-term vision of empowering the local bodies - the District Development Committees, Village Development Committees and the Municipalities - through the devolution of resources, authority, roles and responsibilities is in place in order to bring them in the mainstream of natural resource management (NRM) programmes. In addition, emphasis has been given to involve other stakeholders, particularly the user groups to best utilise their accumulated knowledge and experience to increase NRM productivity. During the last two years, Nepal has drafted a Sustainable Development Agenda (SDAN) within the broad framework of Agenda 21 which focuses on cross-sectoral issues and provides a basis for inter-sectoral co-ordination. Nepal is also in the process of preparing a detail Tenth Plan (2002-2007). This Plan has four broad strategies of obtaining high sustainable and widened economic growth, social sector and infrastructure development, targeted programmes for poverty reduction, and good governance to meet the single objective of poverty reduction. It has prioritised the agricultural development, sustainable management of natural resources, and biodiversity conservation and about 12.8 per cent of the total budget will be allocated for the Plan period. Halting further degradation of land and water resources is one of the major thrusts of the national development policy. The Tenth Plan focuses on maintaining and/or increasing land productivity and restoring the degraded lands, implementing agricultural activities, minimising land fragmentation, distributing acquired land to landless and economically disadvantaged people, and avoiding dual land ownership. It also focuses on discouraging the use of fertile land for non-agricultural purposes and encouraging cultivation in unused land through land leasing and so on. This Plan considers the need for further understanding highland-lowland interaction and implement conventions including desertification.

A 21-year Master Plan for Forestry Sector (MPFS) 1988 emphasises, inter alia, to protect the land against degradation. The Agricultural Perspective Plan 1995 aims to increase farm production. A Water Resources Strategy, 2002 recently endorsed by the government, priorities, inter alia,

water-induced disaster management, watershed management, and initiation irrigation for agricultural development. The government has also introduced land reform programme and has lowered down the land ceiling for each family in mid-2001. The land obtained from this mechanism will be provided to landless, bonded labour, indigenous and disadvantaged group of people.

The draft NAP underscores the importance of scientific and technological study and research in degraded lands to promote problem-solving studies and developing cost-effective technologies. Special focus has been given to refine conservation methods for degraded lands, promote research internship and mobilise the scientific community to map the areas affected by land degradation and desertification.

Information on land use change, vegetation cover, principal soil types, soil fertility of the cultivated land, crop performance etc. have been updated periodically. Landslide and flood-induced land loss is recorded annually. However, much still remains to be done for quantitative assessment of the land and water system and know the extent and magnitude of land degradation, desertification and drought. With regard to traditional knowledge and practices, efforts are underway to enhance their replication in different ecological zones.

Research on water-induced disaster prevention has been started to develop appropriate technologies and human resources, and cost effective models. Curative approach prevails than preventive ones in disaster relief system. Public awareness and capacity building activities have also been initiated but its pace is slow. Nepal has continued to recognise the contribution of the individuals, NGOs, CBOs or institutions by awarding them prizes on an annual basis.

Institutional and Legal Measures

As also mentioned in the First National Report 2000, MOPE is the National Coordinating Body (NCB) and Chief of the Environment Division is the contact person (national focal point) for UNCCD. MOPE is responsible, inter alia, for the formulation and implementation of policies, plans and programmes; and acting as a focal point for national and international organisations. It is a legal entity and coordinates environment and environment-related conventions in Nepal.

In April 2002, His Majesty's Government of Nepal (HMG) has also constituted a National Commission for Sustainable Development (NCSD) - an advisory body - under the chairmanship of the Right Honourable Prime Minister to promote sustainable development and ensure inter-sectoral coordination. In addition, a number of institutions provide policy guidance, advisory services, formulate policies and laws, and implement convention-related programmes. However, effective coordination amongst the institutions has been felt as the need of the hour.

Nepal has continued to empower and strengthen the institutions and provide additional responsibilities, particularly to the local bodies, community user groups, NGOs and private sectors. The government will play facilitative and regulatory roles and the local bodies and other stakeholders will implement the activities. Social mobilisation is growing and has promoted ownership and genuine participation of stakeholders in groups, consensus building, benefit-sharing and maintaining accountability.

The NAP has been drafted with detail review of existing policies, plans, programmes and regulatory measures. Most of the programmes and actions are proposed for continuation and area

increment. As the NAP does not differ with the existing broader strategies and planning frameworks, it would be an integral part of the national planning process, and will be encouraged to integrate with the district level planning process.

The sub-regional bodies such as SAARC, SACEP and ICIMOD are the prominent institutions promoting environmental management. The draft NAP accommodates the concerns and issues as reflected in the TPN2 and RAP and hence provide a basis to share information and experience to promote sub-regional cooperation. The NAP is expected to address land- and water-based problems in the sub-region.

Laws related to soil and water conservation, water resources, environment protection, forests, agriculture, protected areas management etc. have been reviewed with an objective of identifying gaps and areas requiring regulatory measures for the effective implementation of the Convention. The study suggests to including provisions for handing over of barren lands to community, promoting agroforestry, enhancing public participation in disaster management efforts and so on.

A study conducted in July 2001 on tracing linkages amongst the UNCCD, CBD and UNFCCC has thrashed out common concerns and problems, and has recommended, inter alia, to implementing common programmes, and expanding monitoring activities at the local level including codification of the environment-related laws.

NAP Preparation: Participatory Process

During the NAP formulation, interaction meetings, workshops and seminars were organised, and resource persons were consulted to thrash issues and generate ideas to combat land degradation and mitigate the effects of drought. The preliminary draft NAP was discussed with over 225 individuals representing different stakeholders - the government institutions, local bodies, private sector, NGOs, media, user groups and academic institutions, and the NAP is in the process of seeking official comments and suggestions.

The draft NAP defines goals, objectives and strategies. The goal of the NAP is to mitigate land degradation, desertification process and effects of drought through improved land use and sustained land management. The NAP aims to prevent, mitigate and reduce the consequences of land degradation and drought and also aims to identify factors contributing to land degradation and drought; implement preventive and rehabilitative measures; and specify the roles and responsibilities of the government, local bodies, NGOs and the civil society in programme implementation. The strategy is to promote the participation of local bodies, users, farmers and other stakeholders in NAP implementation by empowering and strengthening them, and encouraging research institutions for problem-solving research, and developing appropriate technologies. The government institutions will play a catalytic role and the different stakeholders will have the implementation responsibility.

The NAP includes main programmes in seven areas and supportive programmes in nine areas. The programmes and actions are prioritised with time frame, catalytic and implementation role and indicative budget. A total of 24 programmes and 88 numbers of actions have been proposed in 16 areas. Of them, 48, 36 and 4 numbers of actions are put in first, second and third priority respectively. In terms of time frame, 25, 41 and 22 numbers of actions are considered as short-term, medium-term and long-term actions respectively. Similarly 60, 25 and 3 numbers of actions

are categorised as small, medium and large-scale actions respectively. Most of the proposed programmes are applicable for all ecological zones and priority is given to the Siwalik and Hill - the degraded lands. The draft NAP underscores the need for its periodic review, and also need for developing and implementing projects to translate the programmes into actions.

Main Programme Areas	Supportive Programme Areas
<ul style="list-style-type: none"> ▪ Forest Management ▪ Soil and Water Conservation ▪ Pasture Management ▪ Special Programmes for the Mountains ▪ Food Security ▪ Early Warning and Disaster Relief Systems ▪ Cross-sectoral Programmes 	<ul style="list-style-type: none"> ▪ Policy Development ▪ Legal Instruments ▪ Institutional Strengthening ▪ Demonstration, Scientific Studies and Research ▪ Indigenous Knowledge and Its Practice ▪ Data and Information Sharing ▪ Technology Development and its Transfer ▪ Education, Public Awareness and Media Campaign ▪ Capacity Building

The proposed National Coordinating Body (NCB), which shall be represented by the stakeholders will facilitate programme implementation and monitoring, and ensure inter-agency coordination. Similarly, local level coordination mechanism has been proposed. A Technical Advisory Group will provide scientific, technical and technological inputs to the NCB.

NAP Consultative Process and Partnership Arrangement

Nepal is continuously receiving technical and financial assistance from the developed and developing partners in social and economic development, and NRM programme expects additional assistance. Partnership arrangement at the national level has been promoted and there is yet a need to work out with the donor community. Nepal has clearly indicated to supplement national initiatives financially and technically in launching action-oriented programmes on the environment, capacity building and technology transfer in the earlier donor consultative meetings.

Measures Taken or Planned within NAP Framework

During the NAP formulation process, a series of interaction meetings and studies were carried out during the last two years, and the outcome has been used as building block for NAP formulation. Programmes and projects related with poverty reduction, forest management, rehabilitation of degraded lands, management of protected areas, sustainable development, energy conservation and efficiency are ongoing with donor's assistance. However, its coverage is limited in addressing the ever-increasing magnitude and extent of the problem. Interest of the local people and other stakeholders is increasing over NRM through public awareness activities while capacity building in the local bodies is still lacking and needs strengthening at the earliest possible.

People's participation has been promoted to continue and expand the coverage of NRM activities by further empowering and strengthening the local bodies, NGOs, CBOs and other stakeholders. These processes require additional technical and financial resources in order to speed up the activities in the spirit of the Convention. Information on land degradation and forest depletion is regularly disseminated to enhance knowledge and skill and bring the people further in the mainstream of NRM programmes. The draft NAP emphasises to continue public awareness,

education and capacity building programmes. Nepal realises the additional needs for developing capacities of the local bodies and grass-root institutions to translate policies into actions.

Effectiveness of most of the project-based activities are regularly monitored and evaluated through in-built mechanism. Soil loss monitoring in the demonstration plots and selected watershed is limited and monitoring and evaluation system is yet to be internalised and utilised to maximise the use of monitoring results.

In the spirit of the Convention, income-generating activities have been integrated with NRM activities. User groups in the field of community forests, irrigation water, buffer zone resources are entitled to share the benefits legally and it has generated some funds at the local level.

A number practices have been continued to conserve soil and water, and increase productivity. A SABO technique - a Japanese technique - is recently introduced in some places of Nepal to stabilise roadside slopes and reduce water-induced soil erosion. Although this technique has been effective, it is rather expensive.

Nepal has developed partnership at the national level and the NAP emphasises to maximise the use of this strength and to promote cost and benefit-sharing approaches. The NAP contains actions to promote the participation of different stakeholders right from policy to implementation levels.

Financial Allocation and Technical Cooperation

At present, the Environment Conservation Fund, administered by MOPE is the legal funding mechanism, which receives grant from the consolidated fund. It has limited fund to cater the services of the local demand. However, this fund, if replenished, provides hopes to mobilise local NGOs and CBOs. Nepal has also established the Poverty Alleviation Fund and establishment of the Trust Fund for Biodiversity Conservation is in the process. Local bodies, NGOs, CBOs and the civil society will have access to such funding sources. Besides, funds generated by the community users, and funds received from bilateral and multilateral donors, GM, GEF and UN bodies etc. would be instrumental to implement NAP activities.

In order to implement the NAP, an indicative budget of US\$ 96.9 million has been estimated to continue ongoing activities and initiate new ones. Of this, about 14 per cent is estimated for supportive actions, which are very important to institutionalise the implementation of the main programmes. It is estimated that about 10-12 per cent of the total indicative budget could be channelled through domestic sources. With regard to external funding, Nepal has so far received US\$ 18,000/ (US\$ 10,000/ from the UNCCD Secretariat and US\$ 8,000/ from the GM) for national reporting and public awareness activities, and has spent about US\$ 16,000/ through national consolidated fund to conduct necessary studies as a part of UNCCD implementation during the last two years. These resources are grossly inadequate to address the magnitude and extent of land degradation and desertification problems.

Programmes that promote the conservation of the Siwaliks and degraded hills are priority concerns of Nepal. In addition, preparation of maps on land degradation and desertification, sustainable tourism development, establishment of disaster prediction and forecasting facilities, and synergies amongst the relevant environmental conventions are the current priority areas. Furthermore, capacity building deserves special attention for international cooperation and

assistance. Nepal cannot implement all activities contained in the NAP through national resources due to her financial situation. Several programmes have been initiated with donors' assistance which support directly or indirectly to meet the objectives of the Convention. Many programmes and actions can be accomplished through the modality adopted by the Technical Cooperation among Developing Countries (TCDC). In view of the present needs and limitations, Nepal underscores the important role of the donor agencies for NAP implementation.

Benchmarks and Indicators

Some indicators identified in the draft NAP are related with the change in income level, frequency of landslides and floods and its effect on people and land, and flood and drought affected area, areas of community forests, leasehold forests, and protected area. Additional indicators are on productivity of agricultural land and pastureland. The water resources strategy further includes indicators particularly on mapping of the potential disaster zones, providing emergency relief materials and year-round irrigation facilities by the year 2007. As mentioned above, the NCB will have the overall responsibility for coordinating, monitoring and evaluation. In addition, sporadic studies have been conducted to assess the conditions and impacts of land degradation and drought. Although some demonstration plots are used to monitor soil loss, its coverage is too low in view of the magnitude and extent of the problems, and ecological variations. In many areas, Nepal has yet to streamline monitoring and assessment of land degradation and drought in the spirit of the Convention.

Information has been shared with the users. The EIA reports are made public legally before its approval. The print and electronic media are involved to disseminate information. The radio and television broadcasts NRM related issues and concerns regularly to promote public awareness.

Conclusions and Recommendations

Nepal has progressed during the last two years in generating information and drafting the National Action Programme. The NAP recognises the need for continuation of various programmes and actions as preventive and rehabilitative measures. The NAP opens avenues to integrate and expand income-generating activities on NRM programmes. The NAP requires adequate funding, human resources, enabling mechanisms, and monitoring and evaluation system for its successful implementation. In this context, Nepal expects additional technical and financial assistance from bilateral and multilateral donors.

In view of the addressing the emerging issues, Nepal considers that the CRIC in the forth-coming meeting may wish to discuss and recommend on the following issues:

- Mobilising additional resources to the small and least developed countries;
- Establishing linkages and synergies between the relevant conventions, and additional funding for common programmes;
- Implementing pilot projects for the rehabilitation of degraded uplands to minimise downstream effects;
- Enhancing participatory processes; and
- Exploring knowledge, attitude and practices of the community in fighting against land degradation and desertification.

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Acronyms

ADB	Asian Development Bank
APP	Agriculture Perspective Plan
BAP	Bisheswor Among the Poor
CA	Conservation Area
CBD	Convention on Biological Diversity
CBO	Community-Based Organisation
CDG	Community Development Group
CFUG	Community Forestry User Group
COP	Conference of the Parties
CRIC	Committee on Review of the Implementation of the Convention (UNCCD)
CST	Committee on Science and Technology
DANIDA	Danish International Development Assistance
DDC	District Development Committee
DHM	Department of Hydrology and Meteorology
DNPWC	Department of National Parks and Wildlife Conservation
DOA	Department of Agriculture
DOF	Department of Forests
DOI	Department of Irrigation
DOL	Department of Livestock Development
DOR	Department of Roads
DPR	Department of Plant Resources
DSCWM	Department of Soil Conservation and Watershed Management
DWIDP	Department of Water-Induced Disaster Prevention
EIA	Environmental Impact Assessment
ESCAP	UN Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organisation
FARM	Farm Centred Agricultural Resource Management Programme
FECOFUN	Federation of Community Forestry Users, Nepal
FMIS	Farmers-Managed Irrigation Scheme
GEF	Global Environmental Facility
GIS	Geographical Information System
GM	Global Mechanism of the UNCCD
ha	hectare
HDI	Human Development Index
HMG	His Majesty's Government of Nepal
IBSRAM	International Bureau of Soil Resources and Management
ICIMOD	International Centre for Integrated Mountain Development
INCD	Inter-governmental Negotiating Committee On Desertification
INGO	International Non-governmental Organisation
INSAN	Institute for Sustainable Agriculture Nepal
IPM	Integrated Pest Management
kg	kilogram
KMTNC	King Mahendra Trust for Nature Conservation
KU	Kathmandu University
LDC	Least Developed Country
LRMP	Land Resource Mapping Project
MAP	Medicinal and Aromatic Plant
MFSC	Ministry of Forests and Soil Conservation
MLD	Ministry of Local Development
MLRM	Ministry of Land Reform and Management
MOAC	Ministry of Agriculture and Co-operatives
MOCTA	Ministry of Culture, Tourism and Civil Aviation
MOES	Ministry of Education and Sports
MOF	Ministry of Finance
MOH	Ministry of Health
MOHA	Ministry of Home Affairs

MOICS	Ministry of Industry, Commerce and Supplies
MOPE	Ministry of Population and Environment
MOST	Ministry of Science and Technology
MOWR	Ministry of Water Resources
MPFS	Master Plan for Forestry Sector
MPPW	Ministry of Physical Planning and Works
NAF	Nepal Agro-forestry Foundation
NAP	National Action Programme
NARC	Nepal Agricultural Research Council
NCB	National Coordinating Body
NCIT	National College of Information Technology
NCPA	Nepal Coffee Producer's Association
NCSD	National Commission on Sustainable Development
NEFEJ	Nepal Forum for Environmental Journalists
NGO	Non-governmental Organisation
NNGO	National Non-governmental Organisation
NPC	National Planning Commission
NRM	Natural Resource Management
NWFP	Non-Wood Forest Product
PA	Protected Area
PU	Pokhara University
PWMTA	Participatory Watershed Management Training in Asia
SAARC	South Asian Association for Regional Cooperation
SALT	Sloping Agricultural Land Technology
SchEMS	School of Environmental Management and Sustainable Development
SCWM	Soil Conservation and Watershed Management
SDAN	Sustainable Development Agenda for Nepal
SOE	State of the Environment Report
TCDC	Technical Cooperation among Developing Countries
TPN	Thematic Programme Network
TU	Tribhuvan University
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VDC	Village Development Committee
WB	World Bank
WECS	Water and Energy Commission Secretariat
WMTUH	Watershed Management in the Tropics and the Upper Himalayas
WUA	Water Users Association
yr	year

Introduction

Nepal, with an area of 147,181 km² is roughly rectangular in shape with an average North-South width of about 193km and East-West length of 885 km. It is situated between India and the People's Republic of China within the range of 26°22' to 30°27' N latitudes and 80°4' to 88°12' E longitudes. The altitude ranges from 60m in the South to 8,848m (The Mount Everest) in the North. Ecologically, the country is broadly divided into the Terai (extension of fertile Indogangetic plain), the Hills and the Mountains covering 23, 42 and 35 per cent of the total area, and with about 49.06, 43.97 and 6.97 per cent out of the total population of 23.15 million respectively. The average household size is 5.45. Of them, 85.8 per cent of the total population live in rural areas. The average population density is estimated at 154.84 persons/km² with 136 persons/km² in the rural areas and 985 persons/km² in the urban areas. The average population growth rate was recorded at 2.24 per cent from the year 1991 to 2001. The population census in 2001 showed that about 75.6 per cent of the total population have agricultural land and 71.5 per cent kept livestock. About 80 per cent of the economically active population depend upon agriculture for subsistence living. In 1999, it was estimated that about 62.8 per cent of the total land was owned by 16.1 per cent of the farmers, and the per capita agriculture land has declined from 0.16 ha in 1980 to 0.13 ha in 1999 due to high rate of population growth. In other words, about 69 per cent of the people have less than 1 ha of land indicating higher land fragmentation. The number of people with landholdings reached 2.74 million in 1997 as against 2.19 million in 1991 (MOPE, 2001). On an average, about 57 per cent of the total cultivated land is rain fed and about 21 per cent of the total land receive year round irrigation facility (NPC, 2002). Extension of irrigation supply is difficult in the uneven mountain terrain.

Nepal's State of the Environment (SOE) report published in 2001 documents a total number of 17 as pressing environmental issues, and prioritises land degradation and desertification as the most urgent and moderately urgent issues needing immediate programme implementation (Annex 1). About 80 per cent of the total precipitation occurs during June to September, and Nepal faces "too much water" and "too little water" problem. The trans-Himalayan region such as Mustang, Dolpa, Manang and Jumla receives nearly 250mm of annual rainfall. The ratio of precipitation to evapo-transpiration ranges from 0.02 to 0.77 indicating arid, semi-arid and sub-humid characteristics in the selected areas (MOPE/SC, 2001). Some areas are susceptible to floods and landslides, while others are prone to drought even in the wet season. An uneven annual and trans-annual rainfall pattern, and low vegetative cover in the semi-arid and arid zones are the main climatic attributes that contribute to desert-like condition and land degradation. High intensity and irregular distribution of rainfall is one of the main causes of topsoil loss in Nepal. This has affected production of food and cash crops. Increased human and livestock population has exerted additional pressure on natural resources - the forest, land and water.

Poverty is rampant in Nepal because of fluctuation in agricultural growth rates, inadequate delivery of social services, and unsustainable development outputs. If the definition of US dollar a day for poverty line is used, about 37.7 per cent of the total population are estimated to be below the poverty line in 2001 (NPC, 2002), despite the Ninth Plan's (1997-2002) long-term target of reducing poverty from 49 per cent to 32 per cent within the plan period. Close to 9 million people of Nepal are currently classified as income-poor (UNDP, 2002). Noticeable improvement from

0.415 in 1990 to 0.480 in 2001 has been recorded in the Human Development Index (HDI). Although the total percentage is on the decline still the incidence of poverty is severely felt. As a result, there is an increasing pressure on the marginal lands and forests for cultivation.

1.1 State of Land Degradation and Desertification

Landslides and water-induced erosion are pronounced in the hills and mountains with the resultant effect of riverbank cutting, flooding, sedimentation and water-logging in the plains. The problems are accelerated by land fragmentation, farming of erosion-inducing crops in the outward sloping terraces, cultivation of marginal lands and steep slopes and inappropriate use of agro-chemicals, particularly acidic fertilisers and pesticides. Irrigation-induced sedimentation is an emerging issue in the plain areas. Many farmlands in the Terai and valley floors are affected by silt-loaded irrigation system thereby depleting the organic matter and plant nutrients. In some areas, industrial effluents have also reduced the land productivity and increased water pollution.

Many watersheds are in the state of desertification due to physical, biological and socio-economic factors. Out of total watershed in the country, about 0.4 per cent, 1.5 per cent and 11.7 per cent are in very poor, poor and fair condition respectively (Wagley, 1997). Soil erosion ranges from 5-10 tonnes/ha/yr in well-managed forestland to about 200 tonnes/ha/yr in degraded hill slopes. Carson (1992) reported over 200 tonnes/ha/yr of soil loss in overgrazed lands lying below 1,000m. Landslides and floods damaged about 1,140 ha, 41,800 ha and 182 ha of land in 1994, 1995 and 1999 respectively indicating erratic and unpredictable rainfall (Poudyal Chhetri and Bhattarai, 2001). It is estimated that the annual loss of about 5 tonnes/ha of soil would result in the equivalent loss of about 75 kg/ha of organic matter, 3.8 kg/ha of nitrogen, 10 kg/ha of potassium, and 5 kg/ha of phosphorus (Carson, 1992), and hence the yield rate of major cereal crops is not encouraging, primarily because of the loss of nutrient rich topsoil.

Wind erosion is also significant in certain landscapes, particularly in deep valleys of the high Himalayan region such as Dolpa, Mustang and Manang districts. It prevails in the Terai (plains) during March to May while in the arid trans-Himalayan region like Dolpa, Mustang etc. it prevails all the year round.

Nepal experiences "temporary drought" frequently due to delayed onset and early retreat of monsoon (Yogacharya, 1997). For example, about 35 districts were affected by drought in 1994 and about 74,000 ha of cultivable area of 16 districts of east Nepal were affected by drought in 2001.

In Nepal, area showing the process of desertification and extent of land degradation has not been mapped. In terms of low amount of rainfall and productivity of soil and forest resources, about 10,000 ha of land in the trans-Himalayan region exhibit desert-like conditions and such area is considered expanding.

In a nutshell, desertification is a cumulative outcome of unsustainable land use practices. Many cultivated plots in the hills are reported to have been abandoned due to declining use of organic manure. Land is prone to degradation and/or desertification perhaps the soil is young to endure climatic and physiographic variations such as low rainfall, short period of heavy rainfall, high-speed wind, steep slopes and unstable geology. In addition, deforestation, inappropriate farming practices, intensive agriculture, overgrazing, landslides and floods, and shifting cultivation have

accelerated land degradation process. These factors destabilise ecosystems, accelerated silting of reservoirs and other water bodies, and changed hydrological regime.

1.2 Nepal's Participation in UNCCD and its Implementation

After the Convention entered into force in Nepal, since 13 January 1997, a number of activities have been initiated. Nepal has expanded natural resources management (NRM) activities with people's participation all over the country. Fifty-five out of 75 districts are served by soil conservation and watershed management activities, and all geographical areas of Nepal receive services from forestry and agriculture institutions. However, the activities do not cover the areas, to the extent needed, affected by land degradation, natural resources depletion, desertification and drought.

After the first reporting process, in addition to several activities conducted by other organisations, the Ministry of Population and Environment - the focal ministry for UNCCD activities - organised a two-day national workshop on *Land Degradation, Drought and Sustainable Land Management*, as a part of National Action Programme (NAP) formulation process, in December 2001 with the assistance of the UNCCD Secretariat and the Global Mechanism of the UNCCD. It also conducted some studies through national funding (see 6.1). These studies and workshop recommendations are the building blocks and have been used extensively to draft the NAP under the Convention.

Nepal has joined the Thematic Programme Network on Agroforestry and Soil Conservation (TPN2) since its initiation. The December 2001 meeting was instrumental in highlighting the importance and multiple benefits of dry land agroforestry and soil conservation. The meeting urged the participating countries, inter alia, to implement pilot projects with focus on income-generating activities, capacity building and networking of grass-root level institutions, and also to implement enabling policies and legislation. Nepal underscores the importance of linking income-generating activities to bring the poor people in the mainstream of NRM programmes.

Nepal is making efforts to implement various provisions of the Convention in a phased manner and has expanded policies, laws and programmes to ensure people's participation in natural resource management. Major programmes focussed in the spirit of some provisions of the Convention and implemented at the country level are summarised below.

Table 1. A Synopsis on the Implementation of the Selected Provisions of the Convention

SN	Articles	Major Initiatives
1	Article 4	Poverty alleviation as a single objective of the current plan (1997-2002) and the forthcoming Tenth Plan (2002-2007). Interim Poverty Reduction Strategy Paper prepared, Poverty Alleviation Fund established, drought relief mechanism continued in drought affected areas on case-by-case approach, NRM programmes on forests and degraded lands expanded, cooperation with regional and international organisations continued, some assistance received from donor agencies including UNCCD Secretariat and Global Mechanism of the UNCCD.
2	Article 5	Continuation of land improvement programmes in selected land system, management of forests, water and soil given high priority, sustainable development agenda for Nepal under preparation, ongoing public awareness activities, people's participation continued and fiscal incentives provided to forests, protected areas, soil and water conservation, and irrigation schemes through policy and legal measures.

3	Article 8	A study on "potential linkages between the UNCCD, CBD and UNFCCC and identification of issues for the development of necessary regulatory measures for UNCCD, July 2001" recommended to codify all environment-related laws, amend environmental laws, review laws with environmental perspectives with facilitative role, and change the current land holding and land use policy
4	Article 9 and 10	NAP drafted, stakeholders consultation advanced, collection of comments and suggestions ongoing and waiting for endorsement
5	Article 11 and 15	Participation in the TPN2 - Agro-forestry and Soil Conservation continued and information shared.
6	Article 12-14	Cooperation on soil and water conservation and development of enabling activities on environment in progress.
7	Article 16	Information collection on land degradation, desertification process and drought occurrence in progress, information exchange facilitated through print and electronic media, MOPE's website used to disseminate reports.
8	Article 17 and 18	Small-scale research activities continued to develop techniques and technologies for soil and water conservation, forest management, and weather forecasting.
9	Article 19	Environment, NRM and land degradation issues incorporated in formal and non-formal education; public awareness activities ongoing; training and workshops organised occasionally to develop capacities and share information, and activities at massive scale required to develop human resources.
10	Article 20	Limited financial resources mobilised for NRM programmes
11	Article 22	Participated in COP1, COP2, COP3, COP4 COP5 in Rome, Dhakar, Recife, Bonn and Geneva
12	Article 26	First national report prepared with stakeholders' consultation in April 2000, two national level seminars and workshops organised, and all reports published and posted in MOPE's website (www.mope.gov.np)
13	Article 33	Signed the Convention on 12 October 1995
14	Article 34	Ratified by the House of Representative (Parliament - Lower House) on 10 September 1996, instrument of ratification deposited to the Depositary (Article 39) on 15 October 1996
15	Article 36	Convention entered into force in Nepal since 13 January 1997

1.3 The Second National Report

This Second National Report follows the format outlined in decision 11/COP.1 (First Session of the Conference of the Parties) and the Second Reporting Process on UNCCD Implementation Help Guide (ICCD/CRIC (1)/INF.5). This report attempts to update the national report submitted in April 2000 and include measures taken within the last two years.

This report contains nine chapters. This chapter one summarises the state of land degradation, and implementation of several provisions of the convention. Chapter two highlights in brief the existing plans and strategies to combat land degradation and desertification including implementation of the recommendations of the Committee on Science and Technology (CST). Chapter three outlines institutional and legal measures and chapter four elaborates participatory process adopted for the preparation of the NAP. This chapter also includes highlights of the draft NAP, which is in progress for finalisation and endorsement. The NAP consultative process is described in chapter five and measures taken or planned for the implementation of the Convention are briefly outlined in chapter six. Chapter seven describes financial allocation. Chapter eight focuses on benchmarks and indicators and chapter nine includes some thematic issues for discussion on the Committee for the Review of the Implementation of the UN Convention to Combat Desertification (CRIC) meeting.

Sustainable Development Plans, Strategies and Priorities

2.1 National Plans and Strategies in other Social and Economic Areas

Nepal has a long-term vision of empowering the local bodies - the District Development Committees, Village Development Committees and the Municipalities - through the devolution of resources, authority, roles and responsibilities. This policy thrust would also provide a long-term basis to bring the local bodies, community users and other stakeholders in the mainstream of NRM and utilise their accumulated knowledge and experience in increasing the land productivity.

Nepal has recently drafted a Sustainable Development Agenda (SDAN) within the broad framework of Agenda 21. Its vision is to provide a framework for analysis and a focus for debate on sustainable development and process of negotiation, mediation, and consensus building. The Agenda has identified issues, proposed strategies and actions with time-frame and indicating responsible organisations. In case of land resources, the SDAN has spelled out the need for policy formulation on sustainable land use, and development of urban land use maps and zonation on a participatory basis (HMG/UNDP/WWF, 2002). The SDAN has also diagnosed the crosscutting issues, and provided a basis to establish inter-sectoral linkages with coherent policy and programmes.

Nepal has mainstreamed national development policies, plans and strategies to alleviate poverty. A poverty reduction strategy with focus on economic reform and growth, macroeconomic stability, promotion of trade, investment, and public expenditure is under implementation. HMG has also increased expenditures on social sectors and infrastructure developments and established a Poverty Alleviation Fund. Nepal has set an objective for the next 3 years to achieve broad-based, pro-poor growth rate of about 6.0 - 6.5 per cent per annum. It has planned to increase the GDP from 4.5 per cent in 1999 to 6.5 per cent in 2004, agricultural GDP growth from 2.7 to 4.0 per cent, non-agricultural GDP growth from 5.7 to 8.0 per cent, revenue from 10.2 to 13.1 per cent, national saving from 17.8 to 20.7 per cent. The strategy further aims at reducing fiscal deficit from 4.8 to 3.1 per cent, and inflation from 11.3 to 4.5 per cent by the year 2004 (NPC, 2001). In order to address these targets, one of the strategies is to improve the governance through civil service reforms, decentralisation, NGOs' participation in service delivery, and involvement of private sectors.

Nepal has recently endorsed the Water Resources Strategy with the goal of improving significantly the living conditions of the Nepali people in a sustainable manner and achieving the following ten strategic outputs (WECS, 2002).

- Effective measures to manage and mitigate water-induced disasters
- Sustainable management of watersheds and aquatic ecosystems
- Adequate supply of and access to potable water and sanitation and hygiene awareness
- Appropriate and efficient irrigation available to support optimal, sustainable use of irrigable land
- Cost effective hydropower development in a sustainable manner
- Economic uses of water by industries and water bodies by tourism, fisheries and navigation
- Regional cooperation for sustainable mutual benefits
- Enhanced water related information systems
- Appropriate legal frameworks

- Appropriate institutional mechanisms for water sector management.

This strategy will contribute to streamline water resources management and minimise effects on land system through water-induced disasters.

The forth-coming Tenth Plan (2002-2007) has adopted the following broad four strategies to meet the single objective of poverty reduction (NPC, 2002). They are:

- High, sustainable and widened economic growth: HMG will play a role of a facilitator and regulator;
- Social sector and infrastructure development;
- Targeted programmes for poverty reduction; and
- Good governance.

With due consideration on existing problems and development opportunities, HMG has prioritised, inter alia, the following areas for the plan period:

- Agriculture development, sustainable management of natural resources, and biodiversity conservation;
- Rural infrastructures development and rural energy;
- Population management, social service and basic social security
- Role of private sector in tourism, water resources, information technology, and industrial development;
- Human resources development and women empowerment;
- Employment and basic security related targeted programmes to disadvantaged groups;
- Strengthening of the local bodies, NGO and CBOs;
- Refinement of rural technologies and usage of advanced technologies;
- Environment conservation and promotion; etc.

HMG will allocate about NRs. 82.16 billion (1 US\$ = NRs. 78 as of April 2002) for the Plan period in the agriculture, irrigation and forestry sector, which comes to about 12.8 per cent of the total budget estimated.

2.2 National Plans and Strategies in Combating Desertification

Halting further degradation of land and water resources is one of the major thrusts of the national development policy and plan in Nepal since early 1970s. The Fourth Plan (1970-'75) realised the need for soil and water conservation activities in the degraded areas. Since then, a number of policies have been included in each subsequent plan.

The current Ninth Plan (1997-2002), with the single objective of alleviating poverty, re-emphasises the expansion of NRM activities with priority, inter alia, on agriculture and forests, water resources, human resources and social development. The current Plan underlines the need for strengthening disaster management capabilities, particularly on prevention, mitigation and reduction of natural disasters through the use of advanced geological, hydrological and meteorological technologies. The Plan also emphasises hazard mapping, vulnerability assessment, risk analysis and development of early warning systems (NPC, 2001). However, much still remains to translate these policies into actions.

Long-term vision of involving stakeholders and partners in NRM programmes to alleviate poverty is in the spirit of the Convention to Combat Desertification. The concept paper of the Tenth Plan (2002-'07) has a target of attaining the annual economic growth rate from 4.4 in the current plan to 6.2 per cent, decreasing poverty from 38 to 30 per cent, reducing population growth rate from 2.24 to 2.1 per cent, and providing irrigation facility from 1.117 to 1.417 million ha by the end of 2007. The government will play a role of facilitator and regulator while the local bodies, private sectors, and NGOs will be encouraged to implement activities (NPC, 2002). The Plan focuses, inter alia, on the following aspects, which are related to maintain and/or increase land productivity and restore the degraded lands in broader sense, and hence are the policies to address land degradation and desertification issues.

- Implement agricultural activities as a package programmes in different agro-ecological zones and generate employment opportunities through cereal and cash crops production in the Terai through groundwater irrigation, and expand fruits, livestock, vegetables, bee keeping etc. in the hills;
- Minimise land fragmentation, distribute acquired land to landless and economically disadvantaged peoples, and avoid dual land ownership;
- Discourage use of fertile land for non-agricultural purposes and encourage cultivation in unused land through land leasing;
- Continue to avoid use of forest areas for any activities except for priority development projects;
- Expand community forestry programmes with high priority and leasehold forests for the upliftment of the poor community groups, and forage development;
- Continue to protect the Siwalik (ecologically and geologically vulnerable) region, riverbanks, and expand participatory integrated watershed management programmes;
- Rehabilitate degraded lands, implement land use plan and other programmes by considering the highland-lowland interaction;
- Implement the Conventions, including desertification convention on priority basis; and
- Promote adaptive research, and expand hydrological and meteorological services.

Nepal has adopted soil conservation and watershed management policy and strategy with a view to rehabilitate the degraded lands. The policy and strategy promotes:

- Multiple use of land and water to fulfil diverse needs through rational land use planning;
- Implementation of integrated package programmes (vegetative, agronomic and water management measures) to tackle erosion problems taking the sub-watershed area as an unit of planning and management;
- Establishment of linkages and networking with other related sectors like forestry, agriculture, livestock, water and land resources;
- People's participation by developing appropriate technologies and by expanding conservation extension education and demonstration;
- Adoption of measures to minimise environmental damage during infrastructures construction;
- Protection of watersheds near hydroelectric dams, irrigation systems and riverbanks through plantation and other conservation techniques;
- Institutionalisation of soil conservation and watershed management (SCWM) services all over the country; and
- Conservation activities in the Siwaliks and other marginal lands.

A 21-year Master Plan for Forestry Sector (MPFS) under implementation since 1989 emphasises, inter alia, to protect the land against degradation by soil erosion, floods, landslides, desertification, and other effects of ecological disturbance. The Plan has been instrumental in

mainstreaming people's participation for the rehabilitation of the degraded land, increase forest cover and minimise people's dependence on forests. Similar emphasis has been given on preventive and rehabilitative measures on land and water management in the Agriculture Perspective Plan (APP), 1995 which is under implementation since 1997 to attain agricultural growth rate by 2 percentage points from 3 to 5 per cent/annum, and to reduce poverty and promote non-farm employment and/or agro-based commercialisation. The Plan has accorded high priority in irrigation, fertiliser, technology, roads and power as inputs. These all will contribute to maximise production of agriculture and livestock, promote high-value crops, and manage forests and lands (APROSC/JMA, 1995).

The government in mid-2001 has introduced the land reform programme and has lowered down the land ceiling from 25 bighas (16.93 ha) per family to 11 bighas (7.45 ha) per family in the Terai, 80 ropani (4.07 ha) to 40 ropani (2.04 ha) in the hills and 45 ropani (2.29 ha) to 24 ropani (1.22 ha) in the valley. The land obtained from this mechanism will be provided to landless, bonded labour, indigenous and disadvantaged groups of people. The government is also committed to abolish the dual ownership over land within the next two years. These policy instruments will empower the local people and maximise the rational use of land system through ownership feeling. Furthermore, land fragmentation is ongoing, and has squeezed agricultural activities and declined production. In order to address it, HMG has conceptualised a process for land consolidation with an objective of promoting community and joint farming, proper land uses, and increasing production by minimising investment so as to contribute to poverty reduction.

The policies and strategies ensure access over NRM, promote water resources, tourism, cottage industry, information technology and biotechnology to minimise pressure on agricultural land. Emphasis is also given to strengthen local bodies through decentralisation policy. The other policies and strategies, in brief, include to:

- Ensure food security through quality production of cereals, vegetables, fruits and medicinal plants in remote and food deficit areas;
- Implement land zoning based programmes as per scientific standards, and integrate environmental conservation and pollution control aspects in local level plans;
- Promote alternative energy sources to minimise pressure on forests and land;
- Promote the participation of women, youth, labour groups, non-governmental organisations, and private sector in NRM programmes; and
- Encourage scientists, technicians and researchers for the development of new technologies and techniques on environmental management.

Within the framework of these policies and strategies, land and water management programmes are developed and implemented by line agencies and local bodies with the active participation of the non-governmental organisations and the civil society. However, mechanisms are yet to be developed and implemented to promote participation of the partners.

2.3 Scientific and Technical Land Degradation/Desertification Control Activities

The draft NAP underscores the importance of scientific and technological study and research in degraded lands. There is a need for conducting problem-solving studies and developing cost-effective technologies. The NAP focuses to communicate the problems faced by the farmers to the academic and research institutions to find solutions through participatory on-farm studies and researches. Special focus has been given to refine conservation methods for degraded lands,

promote research internship for university graduates and mobilise the scientific community to map the areas affected by land degradation and desertification.

To continue research activities, existing demonstration plots located in different ecological regions will be used extensively. At present, studies have been conducted to assess possible soil loss in different land uses.

2.4 Implementation of the CST Recommendations

Information on change in land use, vegetation cover, principal soil types, soil fertility of the cultivated land, crop performance etc. have been updated periodically. Land loss from water-induced disasters is recorded annually. However, much still remains to make a quantitative assessment of the land and water system and know the extent and magnitude of land degradation, desertification and drought.

Nepalese people, for centuries, have developed and adopted local practices to conserve soil and water resources. For example, local people judge the slope stability according to the presence or absence of *paharo* (exposed massive rock) at the toe of the hill slope (Regmi, 2001). This criterion - presence of such a massive rock which makes the slope stable - is considered while constructing a house or establishing the settlements. Local people have adopted, practiced and selected various conservation methods related with land improvement in different land uses and ecological zones. They are:

- Terracing - an integral part of sloppy land management and use of loose boulders as spurs for reducing soil erosion
- Use of vegetation, bamboo, loose boulders or sand bags and gabion boxes for spurs, embankment and check dams
- Use of nitrogen fixing plants and adoption of SALT (Sloping Agricultural Land Technology) agro-forestry system using hedgerow barriers of nitrogen fixing plants
- Bioengineering - planting trees, shrubs and grasses, seeding plants, bamboo-broom grass planting, brushwood check dams, vegetated rip-rap (reinforces toe walls and gully beds), jute netting and soft engineering structures
- Water harvesting - trapping flood water (diverting sediment-laden runoff water in crop field), farmers-managed irrigation systems, farm pond or conservation pond (storage or plastic sealed ponds) to collect monsoon runoff, diversion channels, drip irrigation for vegetable production and horticulture farming
- Pasture management - seasonal restrictions for grazing, rotational grazing, harvesting of indigenous grasses and legumes.

Research on water-induced disaster prevention has been started to develop appropriate technologies and human resources, and design cost effective models. Emphasis has been given to identify locally suited disaster mitigation measures and construction methods, strengthen technically feasible disaster rehabilitation activities, and share disaster information and mitigation technologies. The research activities have shown that the landslides occurred in the Mid- and Far-Western Development region in 2000 are closely related to the amount of precipitation in June (DWIDP, 2001). At present, disaster relief system is in place rather than early warning facilities, i.e., curative approach prevails than preventive ones. Drought and water-induced disaster prediction and/or forecasting facilities are yet to be developed to minimise crop loss.

Various activities have been continued to raise public awareness on the importance of natural resource management. Efforts of mobilising community forestry users have converted the degraded land into productive forests in the hills and Terai. Documentary videos and radio programmes have been aired, conservation education programmes have been launched, and awareness materials have been repackaged and disseminated. Workshop and training are regularly organised to build local capacity. The demonstration plots have been used to promote study tours, and technology transfer to provide the local people site-specific problems and possible solutions, and to share information and experiences. Nepal has continued to recognise the individual, NGO, CBOs or institutions by giving awards on special days such as World Environment Day. HMG has established *Supreme Leader Ganesh Man Singh Forest Conservation Award* in order to promote community forestry programmes, recognise the contribution of the user groups on an annual basis, and encourage others to conserve the forest ecosystems. This award carries NRs. 100.000/ (US\$ 1 = NRs 78.00 as of April 2002) and is the highest award so far established for natural resource management in Nepal (MOPE, 2002). Similarly, the NGOs and private sector have also started awarding the individuals or institutions doing commendable work in NRM. For example, a *Jarajuri Kosh* (a fund for the conservation of roots and rooting) has been established in the private sector, and *Abraham Conservation Award* by the World Wildlife Fund Nepal Programme (WWF NP). At present, efforts are made to invite the journalists to visit the sites, and publish successful and failure programmes from the third eye, i.e., journalist's point of view. In some instances, local experts are used to carry out activities related to capacity building and studies.

Institutional and Legal Measures

3.1 National Coordination Body

As mentioned in the first national report 2000, the Ministry of Population and Environment (MOPE) established in September 1995 is the National Coordinating Body (NCB) and Chief of the Environment Division is the contact person (national focal point) for UNCCD. The Ministry is responsible for:

1. Formulation and implementation of policies, plans and programs;
2. Conducting study, survey, research, training, national and international conferences;
3. Acting as a focal point for national and international organisations, and promoting coordination;
4. Pollution control, environment conservation and balance;
5. Publication and publicity;
6. Regular and periodical monitoring and evaluation of activities implemented by governmental and non-governmental organisations; and
7. Development of human resources in the domain of population and environment.

In addition, the Ministry has a number of functions based on environmental laws (Environment Protection Act, 1996 and Environment Protection Rules, 1997) related with, inter alia, the institutionalisation of the environmental impact assessment system, pollution mitigation and control, maintenance of environment conservation areas, administration of the environment conservation fund, development of procedures for providing additional incentives, and development of procedures for compensation. The Ministry is a legal entity and coordinates environment and convention related activities.

On 4 April 2002, His Majesty's Government of Nepal has constituted a 19-member National Commission for Sustainable Development (NCSD) - an advisory body - under the chairmanship of the Right Honourable Prime Minister to promote sustainable development and ensure inter-ministerial coordination. The Honourable Minister for Population and Environment will serve as the head of its Secretariat (Annex 2).

In addition, there are other relevant institutions involved in providing policy guidance, advisory services, formulating policies and laws, and implementing programmes (Annex 3).

Some of the organisations are involved in providing policy guidance while the department and district offices implement the programmes. In addition, local bodies - the District Development Committees (75 DDCs), Village Development Committee (3914 VDCs) and Municipalities (58 municipalities or urban centres) - are engaged in implementing the NRM programmes in the field. The non-governmental organisations and community-based organisation have also been instrumental in raising awareness and implementing people-centred soil and water conservation programmes. The network of users is maintained by the Federation of Community Forestry Users (FECOFUN) and Federation of Irrigation Water Users. Buffer zone users, and community development groups (for soil and water conservation activities) have promoted land management through users mobilisation. Similarly, women groups and livestock development groups are also active in this area.

Most of the organisations have posted information in the website. MOPE has developed its own information system to post information and documents in its website (<http://www.mope.gov.np>). The first national report, State of the Environment Report, Environment Journal, and proceeding of the desertification workshop 2001 etc. have been posted for information sharing.

3.2 Institutional Framework for Land Degradation and Desertification Control

Nepal has continued to strengthen the existing institution and provide additional responsibilities in order to implement UNCCD related activities. The departments (Annex 3) and their district officials are involved in implementing the programmes and projects. The recent emphasis is to empower and strengthen the local bodies and community user groups. Emphasis is equally given to strengthen NGOs and private sector, particularly in the field of natural resource management. Associations of DDCs, VDCs and municipalities have been instrumental for devolution of power and responsibilities.

The government's facilitative policy and regulatory framework has expanded the number of community forestry user groups. The Federation of Community Forestry User Group, a NGO, has established its offices in 71 districts (out of total 75 districts) so far. Similarly the Federation of Irrigation Water Users Association has expanded its activities in mobilising users for land and water conservation. Furthermore, HMG has continued to strengthen NGOs and other CBOs such as Community Development Groups (CDGs) for soil and water conservation, and Buffer Zone Management Users Groups (BZMUGs) to implement natural resource management activities. The NGOs such as the King Mahendra Trust for Nature Conservation (KMTNC) is managing a large area - the Annapurna Conservation Area of about 7,630 km². The NGOs such as Institute for Sustainable Development (INSAN) focuses on permaculture for soil conservation, and the Nepal Agro-Forestry Foundation (NAF) is focussing its activities on sustainable management and conservation of non-timber forest products, agro-forestry research and development, and human resources development through training and group mobilisation. The Nepal Coffee Producers' Association (NCPA) is promoting organic coffee farming in steep land plots in the middle hills of Nepal along with integrated and sustainable soil management practices. Efforts are also underway to consolidate leasehold land for agriculture farming at commercial scale and retain the young people at their birthplace through appropriate business partnership with companies, governmental and non-governmental organisations with the initiatives of the local co-operatives. Such initiatives will contribute achieve the twins objectives of arresting land degradation and generate income at the local level through employment generation. However, such initiatives are in preliminary stage.

Social mobilisation is growing in Nepal to manage natural resources. It has promoted ownership and genuine participation of stakeholders in groups, consensus building, benefit sharing and maintaining accountability. The social mobilisers help the group members to pool and manage the financial resources, and raise skills and efficiency. This process has contributed to generate income and reduce poverty in some areas by strengthening the existing institutions. However, there is still much to develop and implement mechanisms to promote effective co-ordination and partnership between the relevant organisations.

3.3 NAP as a Part of National Economic and Social Development and Environment Protection Plans

The NAP has been drafted with detail review of existing policies, plans, programmes and regulatory measures. Most of the programmes and actions are proposed for continuation with

some new actions in the spirit of the Convention. The NAP was built on through participatory and consultative process. The NAP does not differ with the existing national policies and strategies and planning frameworks. Hence, it would be an integral part of the national development planning process.

Recommended actions of the NAP will be implemented through participatory arrangement, and encouraged to integrate with the district level planning process. The district development committees are involved in developing such plans, which accommodate local issues and concerns on natural resource management. In this sense also, the NAP will be integrated with the local level planning process.

The sub-regional and regional bodies working in the field of environment have given high priority to land- and water-based issues. The SAARC (South Asian Association for Regional Co-operation) Plan of action on the environment, including the State of the Environment report, and Food Security Reserve initiatives underscore the importance of maintaining highland-lowland interactions and promoting land and water management through sub-regional co-operation. Nepal as a member of the South Asia Cooperative Environment Programme (SACEP) has also conducted a sub-regional level study on land-based pollution and joined the regional effort in promoting environmental management. Furthermore, International Centre for Integrated Mountain Development (ICIMOD) has developed a database on the mountain ecosystem, identified major environmental problems and is assisting its Member States to implement environment-friendly activities through dissemination of necessary information and human resources development.

As a participating country on the Asian Thematic Programme Network on Agroforestry and Soil Conservation (TPN2), the draft NAP accommodates the concerns and issues in this aspect and hence provides a basis to share information and experience to promote sub-regional cooperation. The soil and water management activities proposed in the NAP will likely minimise soil loss in the mountains and reduce downstream effects, particularly in the plains and valleys. Furthermore, the programmes and actions would contribute to raise income level of the local people at their birthplace - the hills and the mountains, and discourage shifting cultivation, cultivation of marginal land and transfer of forest cover to other uses. In this context, the NAP is expected to contribute land-based problems in the sub-region.

The NAP is in the finalisation stage. The government has continued to fund most of the programmes outlined in the NAP through domestic sources and/or donor's assistance.

3.4 Legal and Regulatory Framework

Laws related with soil and water conservation, water resources, environment protection, forests, agriculture, and disasters were reviewed in July 2001 with an objective of identifying gaps and areas requiring regulatory measures for the effective implementation of the Convention. The review study recommends to amend sectoral laws to include handing over of barren lands to community for afforestation and conservation, evaluation and monitoring of community forests, promotion of agro-forestry, develop alternative livelihood practices to peoples of affected areas, enhance role of public participation in disaster management efforts, promote conservation of wetland, provide compensation to local community in case of environmental damage during mining etc.

Environment and NRM related laws provide provisions to empower the community users, fiscal incentives and subsidise the cost for conservation, and/or provide benefit sharing with the community users. For example, the *Environment Protection Act, 1996* provides additional concessions and facilities in addition to the fiscal incentives provided under prevailing laws in order to manage the environmental resources. The *National Parks and Wildlife Conservation Act, 1973* provides provision to allocate 30 to 50 per cent of the total revenue generated in the protected areas for community development activities around such areas. Furthermore, the *Forest Act, 1993* provides the community forestry user groups to utilise all benefits generated from such forests. However, about 25 per cent of the total income should be utilised for forest management. In 2001, HMG has made a decision to share the benefits of forest management in the Terai, inner Terai and Siwaliks. The revenue generated from the sale of timber in the Terai will be shared at the ratio of 25 per cent for village community development, and 75 per cent for government's consolidated fund. A list of relevant legislation is given in Annex 4.

The Irrigation Policy, 1993 (amendment 1997) provides the Water Users Association (WUA) to invest 5 to 20 per cent of the total investment for the operation of irrigation schemes. The WUAs will receive up to 90 per cent of the irrigation water fee collected from respective irrigation schemes.

In case of soil and water conservation, HMG provided up to 80 per cent of the total cost for terrace improvement and off-farm conservation activities during the early 1980s and this cost has been reduced to about 50 per cent as the soil and water conservation groups have been mobilised for land improvement and water management activities. This cost sharing is based on the nature of the activity, extent and magnitude of the problems.

Nepal started subsidies in biogas plant since the mid-1970s as an alternative energy source to reduce pressure on forests. About 60 per cent of the total cost for biogas plant installation was provided through the Agriculture Development Bank for about a decade. Since 1990, the government has adopted a policy of granting NRs. 7, 10 and 12 thousands to those willing to establish biogas plant of 4 to 6 m³ capacity in the Terai, hills and remote areas respectively.

In order to minimise the effect of drought, HMG has introduced a system of waiving land revenue on case-by-case basis in areas where water-demanding crops could not be grown due to high and/or low rainfall. For example, HMG waived land revenue in drought affected (74,000 ha) 16 districts of eastern Nepal and provided an additional NRs. 1.57 million (USD 1 = NRs. 76.15 as of August 2001) as grant for vegetable seeds, 50 per cent subsidy on winter cereal seeds, construct 20 deep wells and 5,000 shallow tube wells in 5 Terai districts, and for small surface water irrigation and sprinkle irrigation in 11 hill districts in 2001 (NPC, 2001).

These additional incentives have been instrumental in bringing the local people in the mainstream of natural resource management, including land and water conservation and minimise the effects of disasters. In order to empower and strengthen local bodies, the Local Self-Governance Act (LSGA), 1999 and its Rules, 2000 provide provisions to manage and use natural resources, collect revenue and utilise funds. Current efforts at strengthening the local bodies are mostly related to devolution of powers and responsibilities.

3.5 Linkages with other conventions

A study carried out in July 2001 on "Linkages between the UNCCD, CBD and UNFCCC and Identification of Issues for the Development of Necessary Regulatory Measures for UNCCD" has placed an emphasis on the need for conservation of natural resources particularly on land,

vegetation, wildlife, water and air resources. These Conventions focus on poverty alleviation, integration of policies and strategies, formulation and implementation of national action plans/programmes, information sharing, research, training and capacity building. These Conventions also emphasise on the need for using traditional knowledge, skills and know-how, community participation, public awareness, emergency and crisis management. The identified common programmes include information collection and dissemination, public awareness, education and capacity building, income generation and habitat management in forest, soil and watershed, land use, farm, integrated livestock and pasture, alternative energy and water source protection. The study recommended to expand monitoring activities of the following indicators at the local level:

- Change in land use and vegetation cover;
- Hydrology and sediment transport of the key rivers;
- Meteorological measurements at key physiographic locations; and
- Per capita income generation in different physiographic divisions.

The study also recommends to codify the environment-related laws, amend environmental laws in matters related to air, water and land pollution, and change the current land holding and land use policy to minimise pressure on land and water resources. Studies on national communication under UNFCCC, the National Biodiversity Action Plan under CBD and NAP under UNCCD are under final stage and efforts are underway to maintain synergies between these Conventions. A simplified relationship established so far is given below.

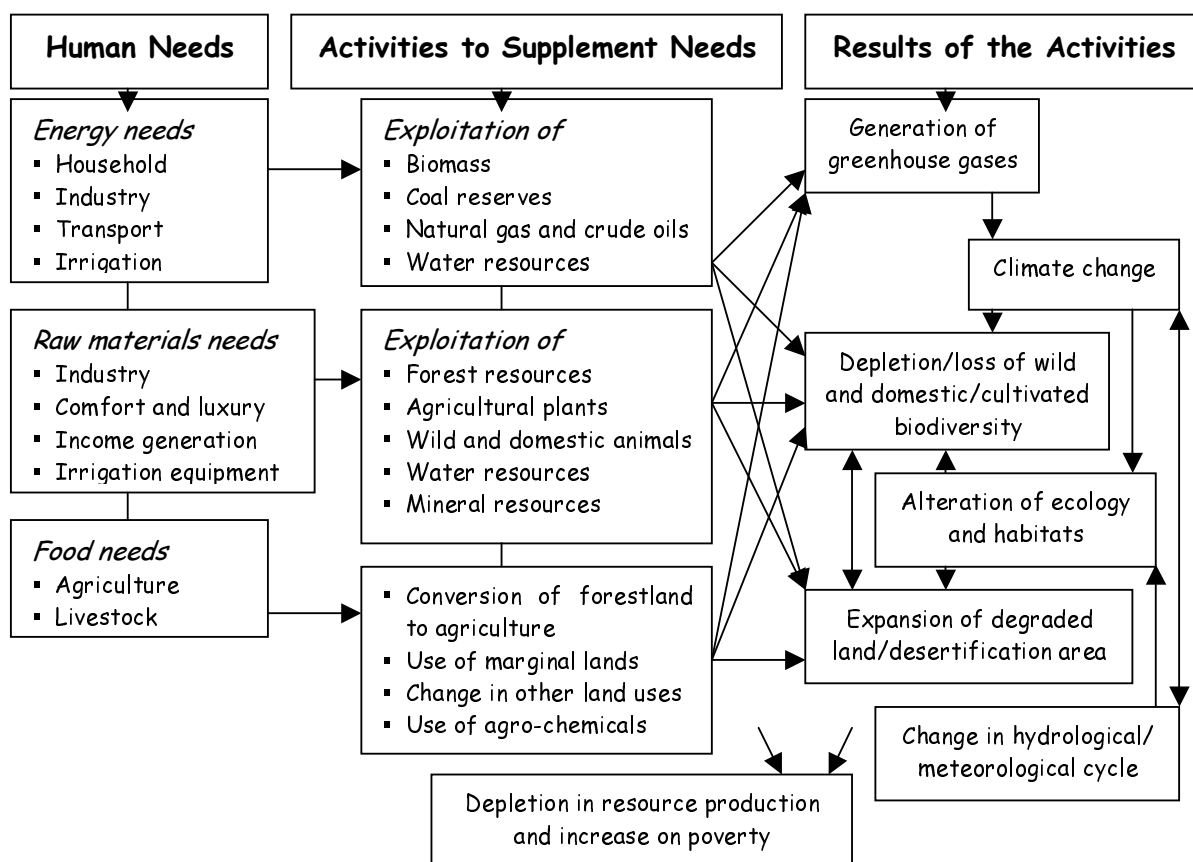


Figure 1. A Simplified Relationship between the Conventions

Source: MOPE/NESS, 2001

NAP Preparation: Participatory Process

4.1 Effective Participation of Actors in Defining NAP Priorities

In the process of formulating the NAP, the Ministry of Population and Environment (MOPE) organised a national seminar in 1997, conducted some studies till July 2001, and organised a national workshop in December 2001. During this period, a number of discussion meetings, interactions, workshops and seminars were organised. Mass media was mobilised to enhance public awareness. A number of resource persons were consulted to thrash issues and generate ideas to combat land degradation and mitigate the effects of drought.

The NAP priorities were extensively discussed during the 1997 national seminar on *desertification and land improvement*. The participants recommended to consider soil erosion, natural resource depletion, land productivity and soil fertility decline, data base and research while formulating the NAP. Similarly, emphasis was given to strengthen institutional capacity, develop human resources, promote information, education and communication, and use indigenous knowledge and practices.

A national workshop on *land degradation, drought and sustainable land management* was organised in 2001 with the assistance of the UNCCD Secretariat and the Global Mechanism of the UNCCD with a view to identify priority issues for NAP. These issues identified by the workshop are on public awareness and education, capacity building and institutional strengthening, appropriate technology, land use planning, food security and agricultural practices, soil and water conservation, energy use, livestock and pasture, and early warning system. Participants also provided input on institutional arrangement for NAP implementation, enabling activities, poverty alleviation, agroforestry, soil conservation practices and water resource management.

During the NAP formulation process, a wide range of actors were involved and the NAP was drafted by involving a team of experts working in natural resources management. After the preliminary draft report was prepared in early January 2002, an in-house discussion programme was organised to further identify areas to be included in the NAP. Initial comments and suggestions were incorporated and circulated for expert review.

The preliminary draft NAP was discussed with over 225 individuals representing different stakeholders. MOPE organised a series of interaction meetings with stakeholders - the government institutions, local bodies, private sector, NGOs, media, user groups and academic institutions. The concerned agencies and MOPE organised the interaction meetings jointly. The NAP has been revised based on the inputs received from experts and different stakeholders, and it is in the process of seeking official comments and suggestions.

As mentioned above, a number of institutions have provided valuable inputs on NAP priorities, programmes and actions. The institutions involved in the consultation process are given below. A number of governmental and non-governmental organisations are actively involved in disseminating information to enhance public awareness through electronic and print media.

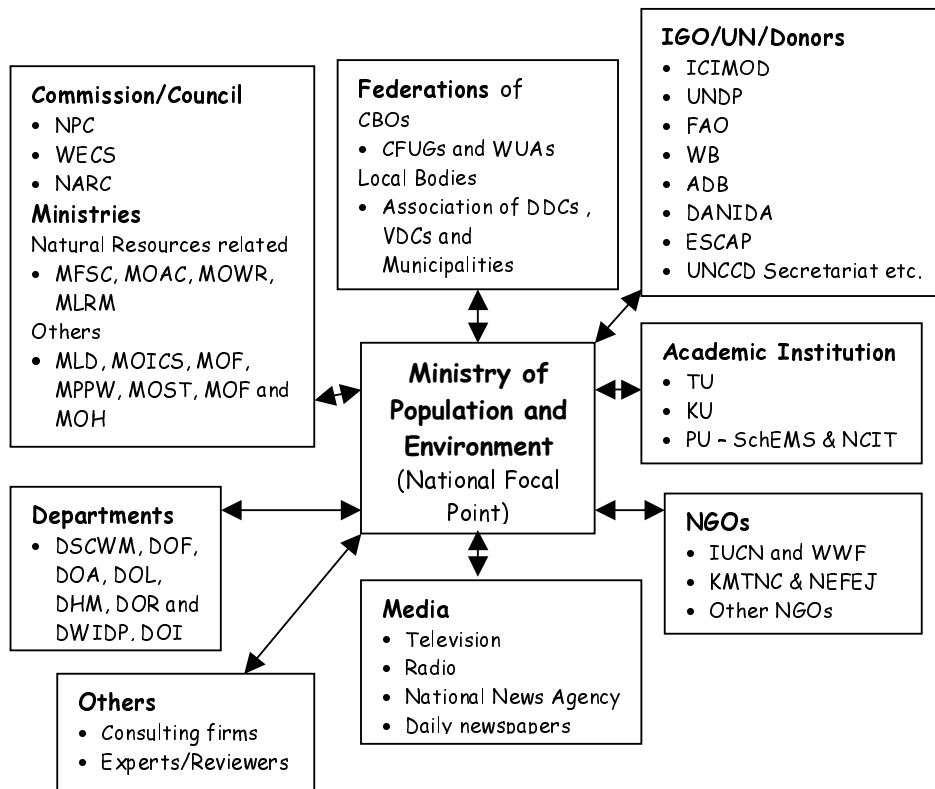


Figure 2 Participating Institutions in Consultative Processes till early January 2002

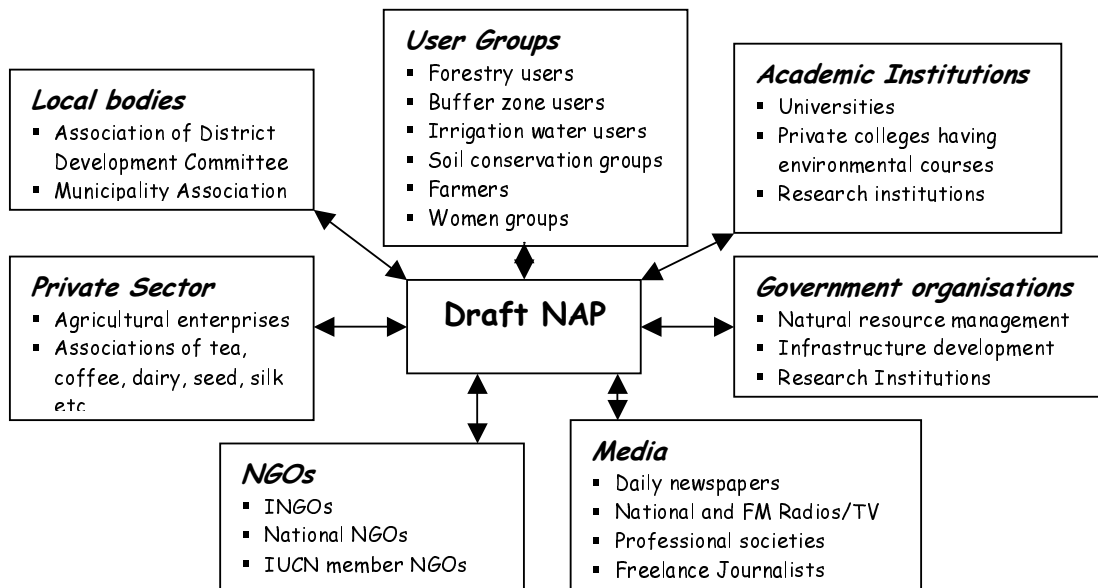


Figure 3 Stakeholders Participation in the Interaction Meetings on the draft NAP until March 2002

In the NAP formulation process, gender perspective has been duly considered. In December 2001 national workshop, one of the papers discussed was on *land degradation and sustainable development: Gender Perspective* with a view to accommodate gender issues and concerns. It has been realised that "land degradation obviously impacts the productive capacity of both women and

men to produce food crops both for consumption and for trade. On the part of women, degradation of land and resultant insufficient produce could pressurise them to adopt unsustainable farming practices ..." (Rana-Deuba, 2001). The recent approach at involving and empowering women in natural resources management, particularly the forest has been encouraging. For example, about 440 community forestry user groups (CFUGs) are exclusively of women, which accounts for about 4 per cent of the total CFUGs (10,901 CFUGs) by November 2001. A Loan Programme for Rural Women has been implemented in 620 VDCs of 67 districts and over 96,000 women were trained, 12,400 women groups have been established and about NRs. 200 million have been invested in the late 1990s. This initiative has been continued to involve more women, in the form of group, so that self-employment could be promoted and income generation could contribute to poverty reduction. There is an increasing realisation on the need for awareness, involvement and empowerment of women in all development programmes designed to improve their condition and position.

Consultation process has been one of key approaches to involve different stakeholders in policy and programme formulation and implementation in natural resources sector. Local bodies, NGOs and CBOs have effective contribution in influencing policies, legislation and other instruments and make instruments that promotes people's empowerment, involvement and benefit sharing.

4.2 Highlights of the draft NAP

The draft NAP defines goals and objectives, and includes main and supportive programmes in 16 areas. The goal of the NAP is to *mitigate land degradation, desertification process and effects of drought through improved land use and sustained land management*. The NAP aims to prevent, mitigate and reduce the consequences of land degradation and drought. Specifically, the NAP emphasises to further:

- Identify factors contributing to land degradation and drought;
- Identify and implement preventive and rehabilitative measures necessary to combat land degradation, desertification and mitigate the effects of drought, and alleviate poverty;
- Identify expected results within the time-frame, and develop measurable indicators; and
- Specify the roles and responsibilities of the government, local bodies, NGOs and the civil society in programme implementation.

The strategy is to promote the participation of local bodies, users, farmers and other stakeholders in NAP implementation. The government institutions will play a catalytic role, develop facilitative policy and regulatory frameworks including standards, guidelines and manuals through stakeholders' consultation to maximise people's participation. Strategies include, inter alia, to empowering and strengthening local bodies and community-based organisation, and encouraging research institutions for problem-solving studies, and developing appropriate technologies.

The NAP includes main programmes in seven areas such as forests, soil and water conservation, pastures, mountains, food security, early warning system and cross-sectoral programmes. In order to implement the proposed programmes, supportive programme areas have been identified in nine areas - policy, law, institution, demonstration studies and research, indigenous knowledge and practices, data and information sharing, technology development and transfer, education public awareness and media campaign, and capacity building. Programmes and actions are prioritised. The programmes have been further divided into major actions. Each action includes time frame (short-term, medium-term and long-term), catalytic and implementation role and indicative budget. Most

of the proposed programmes are applicable to all ecological zones and priority is given to the Siwaliks and Hills - the degraded lands. The draft NAP realises the need for its periodic review, and also need for developing and implementing projects to translate the programmes into action.

A total of 24 programmes and 88 actions have been proposed in 16 areas. Of them, 48, 36 and 4 number of actions are put in first, second and third priority respectively. In terms of time frame, 25, 41 and 22 number of actions are considered as short-term, medium-term and long-term actions respectively. Similarly 60, 25 and 3 number of actions are categorised as small, medium and large-scale actions respectively (MOPE, 2002). The programmes and activities are tabulated below.

Table 2. Main and Supportive Programmes in the Draft NAP

Main Programmes	Actions
1. Forest Management	
1 <i>Promotion of community, leasehold and private forests in degraded areas</i>	<ol style="list-style-type: none"> 1. Continue to promote handing over of community and leasehold forests to poor user groups by simplifying procedures, and mobilise CF income for social development 2. Ensure subsidies for forest development managed by poor user groups 3. Provide technical assistance to users as post-support programme 4. Promote plantation of multi-tiered economic tree crops in private land 5. Promote private forestry in degraded lands 6. Continue forest protection works and stop encroachment 7. Implement operational forest management plans
2 <i>Expansion of Conservation Areas in the Siwaliks and Hills</i>	<ol style="list-style-type: none"> 1. Declare and manage biodiversity rich forests as Conservation Areas 2. Conduct countrywide survey on endemic species and identify "hot spots" of endemic species 3. Declare and manage Nature/Biosphere Reserve rich in endangered and endemic species 4. Promote harvesting of wild animals to generate local funding for species conservation
3 <i>Domestication of high value and low volume plants and sustainable use of Non-Wood Forest Products (NWFPs) in different categories of forests</i>	<ol style="list-style-type: none"> 1. Promote inventory of commercially tradeable NWFPs, conduct studies on stock, sustained yield and marketing 2. Manage NWFPs and encourage plantation of medicinal and aromatic plants (MAPs) 3. Identify low volume and high value NWFPs, develop methods and technologies for cultivation, harvesting and processing inclusive of legally protected and endemic species 4. Develop promotional package of, and enabling mechanism for the sustainable use of endemic species
4 <i>Promotion of renewable energy and energy efficiency</i>	<ol style="list-style-type: none"> 1. Promote locally suited energy efficient stoves and develop capacity building for their construction and usage 2. Subsidise for high-calorie firewood plantation in private land 3. Promote bio-gas, micro-hydro projects and other alternative energy sources for agro-industries including cheese factory in the hills and mountains
5 <i>Conflict Minimisation on forests and benefit sharing</i>	<ol style="list-style-type: none"> 1. Identify users living far from forests 2. Ensure traditional rights for cattle grazing in temperate region and develop regulatory measures for benefit-sharing from forest management

2. Soil and Water Conservation in Degraded Lands

- 6 *Promotion of land consolidation, agro-forestry and block plantation*
1. Prescribe minimum area of each parcel and promote land pooling based on land capability classification
 2. Encourage plantation of nutritious and fast growing plants having water retention and soil binding properties including expansion of on-farm conservation practices
 3. Encourage tea, coffee, fruit and MAPs cultivation even through land consolidation
 4. Promote the use of farmyard and green manure, and integrated plant nutrient system (IPNS) and phase out subsidies on agro-chemicals
 5. Promote sericulture, floriculture, grass raising and other income generating activities
 6. Promote and expand sustainable Farmers-Managed Irrigation Systems (FMIS)
 7. Promote block plantation (fruit, fodder and forage) in sloping lands
- 7 *Enhancement of mixed cropping and terrace improvement, and promotion of greenery along the riverbanks*
1. Expand terrace improvement, water diversion in sloppy farmland and introduce crops having water retention and soil binding properties
 2. Construct water/run-off harvesting dams, and use catchment pond
 3. Integrate sediment trapping facilities in irrigation schemes and promote cultivation of sediment-loving crops (cereals and cash crops)
 4. Promote land husbandry in upland watershed areas
 5. Implement bioengineering activities along stream/riverbank
 6. Promote groundwater extraction for irrigation and shallow tube-wells in drought-prone areas
- 8 *Rehabilitation of degraded lands through bioengineering and evergreen plants having soil binding properties*
1. Expand degraded land rehabilitation activities in sloppy lands with bioengineering treatment, sediment trapping facilities and plantation of evergreen species
 2. Implement integrated ecosystem management programme in Siwaliks and rehabilitate areas prone to landslides in other areas
 3. Implement watershed management activities

3. Pasture Management

- 9 *Conflict resolution between resource users and cattle grazers and conservation of indigenous livestock*
1. Conduct studies on conflicts between cattle herders and community forestry user groups and launch preventive measures
 2. Undertake strategic assessment of rangeland, stock and requirement and develop databases of rangeland and cattle
 3. Develop and manage pasturelands in temperate zone
 4. Conduct census of indigenous livestock and protect endangered and rare species
 5. Strengthen germplasm conservation facilities
 6. Introduce incentive package for stall-feeding and rearing of productive cattle

4. Special Programmes for the Mountains

- 10 *Enhancement of watershed improvement through population management*
1. Promote low-cost vegetative techniques, agro-forestry and implement watershed management plans at sub-watershed basis
 2. Develop and expand financial incentives for small families, and promote reproductive health and family planning facilities
 3. Integrate population and environment management activities in sectoral programmes
 4. Promote cable cars, and social service including rainwater harvesting facilities
- 11 *Promotion of sustainable tourism and natural resource management*
1. Implement natural resource management activities with focus on village tourism
 2. Promote and expand micro-hydro projects and energy efficient

equipment

3. Diversify income-generating activities, develop raw materials and promote cottage industry such as agro- and forest-based industries
4. Select areas for, and promote high-budget travellers
5. Implement code of conduct, and promote health and sanitation facilities including designation of campsites and waste management schemes

5. Food Security

12 *Enhancement of income-generation activities for land and water conservation*

1. Promote MAPs cultivation both in private and public lands and sustainable utilisation of NWFPs (of community and leasehold forests) with operation of semi-processing facilities
2. Develop facilitative mechanisms to lease barren land to user groups of landless people
3. Promote cultivation of raw materials for forest-based industries
4. Improve current land use from cereals to horticulture and/or MAPs
5. Expand farmers-managed irrigation schemes

13 *Enhancement of water management for poverty alleviation and food security*

1. Implement integrated watershed management programme in degraded land and desertification-prone areas

6. Early Warning and Disaster Relief Systems

14 *Promotion of disaster forecasting and relief systems*

1. Expand and network weather and flood monitoring stations
2. Prepare and update dry spell atlas for different weeks and identify drought-prone areas
3. Develop and/or strengthen flood and drought forecasting facilities and promote community-managed early warning system
4. Conduct vulnerability and risk assessment and hazard mapping
5. Expand water induced and sediment related disaster prevention activities
6. Prepare and implement contingency plan on disaster preparedness and rehabilitation
7. Promote coordination of relief committees
8. Promote rainwater harvesting in trans-Himalayan and mountainous regions, and FMIS in drought-prone areas

7 Cross-sectoral Programmes

15 *Development of carbon sinks through biodiversity conservation*

1. Promote *in situ* conservation of biodiversity and natural habitats
2. Promote germplasm collection and preservation
3. Conserve mature forests and plant broad-leaved evergreen trees massively in degraded lands to develop these areas for carbon sinks
4. Establish synergy between relevant conventions, and implement common programmes

Supportive Programmes

8. Policy Development

16 *Avoidance of duplication and bridging gaps on policies for land and water management*

Develop and implement an integrated policy on land and water including land use and commercial plantation

9. Legal Instruments

17 *Avoidance of duplication of authority, roles and responsibilities and development of necessary legal instruments in the spirit of the UNCCD in taking into account other relevant conventions*

Develop regulatory framework including land use

10. Institutional Strengthening

18 *Establishment and/or strengthening of institutions*

Provide additional mandates and strengthen local level implementing agencies, and develop coordination mechanism

- at different level*
2. Establish Desertification Cell in MOPE and promote coordination
- 11. Demonstration, Scientific Studies and Research**
- 19 *Development of demonstration plots and promotion of scientific and technological research*
- 1 Refine conservation methods for degraded lands and process NWFPs through scientific studies
 - 2 Promote participatory on-farm research and provide research internship for university students
 - 3 Update land resource mapping project (LRMP) information and launch land degradation mapping periodically
 - 4 Establish and/or strengthen demonstration plots for studies and research in different ecological zones
 - 5 Establish monitoring and evaluation facilities for land degradation and desertification in arid and semi-arid regions
 - 6 Update climate change effects on grasslands and wildlife habitat
- 12. Indigenous Knowledge and Its Practice**
- 20 *Utilisation of indigenous knowledge and replication of proven techniques and conservation practices*
- Refine and replicate site-specific proven conservation techniques, raise awareness and develop capacity for use
- 13. Data and Information Sharing**
- 21 *Institutionalisation of information collection and sharing system*
1. Collect and process data through remote sensing and geographical information system (GIS)
 2. Develop Management Information System
 3. Exchange experts between national and international institutions, and promote participation in regional and international workshops
- 14. Technology Development and its Transfer**
- 22 *Promotion of technology transfer and capacity building for its use*
- Collect information on available technologies, promote their transfer and use
- 15. Education, Public Awareness and Media Campaign**
- 23 *Expansion of land and drought issues in formal and non-formal education and promotion of public awareness*
1. Integrate and/or expand land management issues in environmental education courses at different levels
 2. Develop, repackage and disseminate information and award media
 3. Organise awareness seminars and mobilise mass media including community radios, and NGOs for information campaign
- 16. Capacity Building**
- 24 *Development of human resources at all levels, particularly of local bodies and community based organisations*
- Promote advanced studies, organise skill development training for human resources development

4.2.1 Programme Implementation

As mentioned above, local bodies, natural resource users and other stakeholders will be actively involved in NAP implementation. A National Coordinating Body (NCB) will be constituted with adequate representation of the stakeholders to facilitate programme implementation and monitoring and ensure inter-agency coordination (Annex 5). The major stakeholders identified include local bodies, NGOs and CBOs, private sector, media, academia and research institutions, women and farmers. Similarly, a local coordination mechanism will also be developed for programme implementation. A Technical Advisory Group will be formed to provide scientific, technical and technological inputs to the NCB. The proposed coordination mechanism is given in Annex 6. The government will play a catalytic role and the local bodies, NGOs, CBOs, private sector and other stakeholders will be involved in programme implementation.

4.2.2 Monitoring and Evaluation

The Tenth Plan has proposed to strengthen the existing monitoring and evaluation to be result-oriented and effective. A logframe will be developed before project approval in order to ensure and institutionalise monitoring and evaluation system by allocating necessary budget. This mechanism will be adopted for NAP monitoring. A series of indicators and means of verifications have been identified for NAP. Major indicators are on change in landslides, flood and drought affected areas, reduction in the area of degraded lands, increased productivity of natural resources and farmland, moisture retention in the farmland, land use based nutrient loss etc. The means of verification are related to the publications of reports and specific studies.

4.2.3 Assumptions

Some of the assumptions made as pre-requisites for the successful implementation of this NAP are related with effective participation of the local bodies, private sector, user groups, academic and research institutions and NGOs. Halting further degradation of the land system and desertification process, and natural resources management will receive continued priority and support. The most important assumption is that the bilateral and multilateral donors will provide additional technical and financial assistance to implement the NAP in the spirit of the Convention.

NAP Consultative Process and Partnership Arrangement

5.1 Effective Support from International Partners for Cooperation

Nepal is continuously receiving technical and financial assistance from the developed and developing country partners in various areas of social and economic development and NRM programmes. The government of Australia, Canada, Denmark, Finland, Germany, Japan, Norway, United Kingdom, United States of America, Switzerland etc. have continued their assistance in forestry, soil conservation and watershed management, disaster preparedness and agriculture development activities.

Based on the experience of the implementation of some projects on NRM, it is obvious that the public participation is crucial to make the project successful and effective. The green sector - the NRM - is ahead than the brown sector in formulating necessary policies and legal measures, and developing necessary instruments to promote people's participation in land and water management and increase the production of cereals, and forest resources. In this venture, donor assistance has been instrumental in developing processes and procedures.

In August 2001, MOPE organised a donor consultative meeting and presented the status of environmental condition, and outlined focus of the government in implementing multilateral environmental agreements. MOPE has formed an Environment Coordination Group of donors to discuss environment-related matters with the donor communities. The Group may be instrumental for informal consultation and in raising concerns and priorities on land degradation and desertification and NAP implementation as well. Furthermore, NAP focuses on continuation of most of already existing activities and expansion of coverage in such a way that the emerging issues could be handled in time and preventive measures could be institutionalised instead of curative ones.

The concerned agencies have also continuously organised such meetings with the donor community. However, a consultative meeting is yet to be organised to implement NAP. It has been planned to discuss NAP with the donors in due course of time to seek their concerns, suggestions and possible assistance.

5.2 Partnership Arrangement for NAP Implementation

There is an increasing awareness on the need for extended partnership in NRM programmes with community users at the national level, and this potential has been tapped through policy and legal measures. However, much still remains to be done to strengthen this partnership and increase the coverage of NRM activities in different ecological zones.

As the NAP is in the finalisation stage, partnership arrangement is yet to be worked out in consultation with the donor community. One of the issues in the Donors' Consultative Meeting organised by MOPE on 6 April 2001 was on preparation and implementation of the Action Programmes on UNCCD. HMG expected, inter alia, from the donors community to supplement national initiatives financially and technically in launching action-oriented programmes on the environment, and help in building professional/institutional affiliation with related institutions of the donor countries. The response of the donor community in these areas was noted positive. Similar consultation meetings are organised by the concerned agencies to seek donors' support in implementing NRM activities with peoples' participation.

There are possibilities to arrange partnership amongst North and South and South-South cooperation particularly in capacity building and technology transfer. Once the NAP is finalised efforts will be made to invite donor community and enhance their participation in mainstreaming the local needs during NAP implementation.

Measures Taken or Planned within NAP Framework

6.1 Adequate Diagnosis of Past Experience

Land degradation and desertification have been clearly stated as the most important issue requiring urgent action in the State of the Environment Report, 2001 (UNEP, 2001; Annex 1). Besides other studies conducted by different organisation, Nepal has completed the following six studies directly related with the Convention (MOPE, 2001) after the submission of the First National Report in 2000. They are:

1. *National Programme and Country Status Paper on Combating Desertification, July 2000* - synthesises UNCCD obligations, present status and recommended actions along with capacity building needs.
2. *Traditional knowledge, know-how, practices and technologies, July 2001* - documents major practices and technologies currently in use.
3. *Identification of financial, technical and technological needs, July 2001* - documents financial needs on capacity building of grass-root institutions, and development and transfer of appropriate technologies; technical needs on research and extension, integration of poverty alleviation, classification and mapping of degraded land, community empowerment, partnership building, and involvement of private sector; proposes needs for water harvesting and management, appropriate farm technologies for non-cereal crops, early warning system, non-forest-based alternative energy, and reduction of CFC emitting substances.
4. *Identification of capacity building and public awareness activities, July 2001* - outlines activities on improving knowledge base, access to information, capacity building for information dissemination, maximise the use of print and electronic media, provide research internship etc.
5. *Identification of data needs, desertification monitoring and evaluation parameters (indicators), July 2001* - documents data requirements on land classification, stock and yield rate of different land uses such as agriculture, forests, and pasture, monitoring of weather, soil, ground water, population and migration etc.
6. *Linkages amongst UNCCD, CBD and UNFCCC and identification of issues for the development of necessary regulatory measures for UNCCD, July 2001* - describes common approaches to these three conventions particularly on objectives, poverty alleviation, national policies and strategies, information sharing, research and training, traditional knowledge and know-how, community participation, public awareness and emergency responses. This study recommends to codify and amend environmental laws, and to change the current landholding and land use policy.

6.2 Technical Programmes and Functional Projects

A number of projects are ongoing with donor's assistance. Programmes and projects related with poverty alleviation focus on employment generation, human resource development, and social service facilities. A broad-based poverty alleviation programme named Bishweshwor Among the Poor (BAP) has been launched to address the problems of the ultra poor, which constitute about 17.1 per cent of the total population. The BAP focuses to form community organisation(s), promote self-reliance and self-help, create social capital and promote traditional institutions at the grass-root levels. The BAP envisaged to cover about 20,500 ultra poor families, 100 families from each

205 parliamentary constituencies in the year 2000. The major activities include disbursement of demand-based micro-credit, development of skill and leadership through training, availing access to literacy, extension of basic health and housing facilities, and promote saving mobilisation with a view to uplift the living standard of the targeted people. The poverty alleviation programmes will be further focused and expanded in line with the single objective of the forth-coming Tenth Plan (2002-2007).

In addition, a number of projects are underway in small areas in forest management through user group concept, rehabilitation of degraded lands, management of protected areas, sustainable development, energy conservation and efficiency, water-induced disaster prevention etc. The major projects related with natural resources are listed in Annex 7. However, there is inadequate information on drought mitigation and early warning system, research and development, integration of income-generating activities - a vital component for land and water management. Interest of the local people and other stakeholders is increasing over NRM through public awareness activities while capacity building in the local bodies is still lacking and needs strengthening.

As mentioned above, the projects aiming at rehabilitating the degraded lands are ongoing in selected areas but its coverage is too small as compared to the magnitude and extent of the problems. A number of projects have been launched with donors' assistance. However, Nepal has yet to develop and/or expand effective system for early warning, and develop programmes to mitigate the effects of drought.

6.3 Evolution of Participatory Process in Soil and Water Conservation

Since 1970s, Nepal introduced user group mobilisation in forest management. Successful participation of the users in forest management paved the road for empowering local people to manage other natural resources as well. Accordingly, peoples were encouraged to form groups, plan and implement their conservation programmes. Such participation has been evolved slowly. This participation in case of soil and water conservation could be grouped into five stages (Wagley and Bogati, 1999). They are:

1. Stage 1 (1974-'80): Public awareness activities were launched along with the assessment of land resources. In order to encourage local people in terrace improvement, HMG provided subsidy up to 80 per cent of its total cost.
2. Stage 2 (1981-'85): HMG expanded public awareness activities and local people were invited to assess their needs. In order to phase out the subsidy and minimise dependency, it was reduced to 70 per cent for terrace improvements and local people were encouraged to form catchment conservation committees to implement soil and water conservation activities.
3. Stage 3 (1986-'90): The Village Development Committees, and the District Development Committees were involved in watershed planning, and the subsidies were reduced to 50 per cent for terrace improvements in private land. Furthermore, HMG continued to provide assistance to users developed facilities for maintenance, and handover natural and planted forests to local communities.
4. Stage 4 (1991-'94): In this stage, the sub-watershed planning was institutionalised and up to 60 per cent of the total resources was channelled to priority sub-watersheds (15 to 25 km² area). On-farm conservation packages, and guidelines for people's participation were developed. Emphasis was given to establish user groups as a mandatory provision to launch soil and water conservation activities.

5. Stage 5 (1995-'99): HMG continued to promote the establishment of the community development groups as a platforms for interaction, planning and management, provide direct investments to farmers to strengthen such groups, and implement soil and water conservation activities with people's participation. This approach is in continuum.

At present, involvement of local people has been continued and promoted in community forestry management, soil and water conservation, buffer zone management, and irrigation management through policy and legal measures. The Community Development Groups (CDGs) has been expanded in all priority soil conservation and watershed management activities. These groups are registered with the District Administration Office as an NGO while others are registered with the concerned agencies in accordance with the provisions of the sectoral legislations.

In order to increase the coverage of these activities, emphasis has been given on ongoing and new field-based programmes and projects with people's involvement so as to maximise the benefits. As the Conventions emphasise to focus on NAP implementation and capacity building, almost all the projects have given due importance on it.

6.4 Action Programme Implemented in Compliance with Priority Fields set out in the Convention

As also mentioned in the First National Report 2000, a number of actions are ongoing to manage the natural resource base with people's participation. The draft NAP also documents various activities to continue and expand the coverage with a view to increase stock and growth rate of the forest products. In order to ensure effective implementation of these activities, efforts will also be continued to empower and strengthen local bodies, NGOs, CBOs and other stakeholders to provide additional services. However, these processes require additional technical and financial resources in order to speed up the activities in the spirit of the Convention.

Sporadic studies are ongoing to document traditional knowledge and practices. Information generated on land degradation and forest depletion is regularly disseminated to enhance knowledge and skill and bring the people in the mainstream of natural resource management. The draft NAP emphasises continuation of public awareness and education programmes to increase the level of understanding and sharing of information on these priority issues of national importance.

Effectiveness of most of the project-based activities are occasionally monitored and evaluated through in-built mechanism. Implications of the programmes and actions on improving the land conditions and increasing the productivity of the cereals and other resources are monitored. Soil loss monitoring in the demonstration plots and selected watershed is very limited. However, monitoring and evaluation system is yet to be internalised to maximise the use of monitoring results in the new programmes.

In the spirit of the Convention, income-generating activities have been integrated in NRM. User groups in the field of community forests, irrigation water, buffer zone resources are entitled to share the benefits legally. Generation of funds at the local level has increased, and sharing of cost and benefit has been instrumental to conserve and promote sustainable use of natural resources. The draft NAP further streamlines to improve the economic conditions of the local people by involving them in land improvement and water management.

6.5 Linkage Achieved with Sub-regional and Regional Action Programmes

The sub-region faces a number of similar types of environmental problems. As also mentioned in section 3.3, SAARC has initiated a number of programmes with sustainable development approach. The land-based activities in the mountains have tremendous impacts on the downstream. This issue has been dealt in the SAARC Regional Action Plan on the environment. This Plan outlines activities and calls upon the Member States to continue cooperation and collaboration on environmental management and natural resource conservation. The draft NAP, although national in character, includes a number of programmes that addresses highland-lowland issues and will likely contribute to address sub-regional issues as well.

As also mentioned in the First National Report 2000, most of the programmes proposed in the draft NAP have linkages with the programmes included in the SACEP land-based pollution study. Watershed Management in the Tropics and Upper Himalayas (WMTUH)/Farm centred Agriculture Resource Management Program (FARM) and Participatory Watershed Management Training in Asia (PWMTA) are also implemented with the assistance of UNDP/FAO/NET. However, information sharing is yet to be institutionalised and make effective.

Although adequate emphasis has been laid by the Convention for scientific and technological studies and implementation of their recommendations, Nepal has as of yet, perhaps due to late start exerted a limited effort on such activities. Some academic and research institutions have maintained collaboration with the regional institutions for strengthening scientific networks. For example, NARC has initiated collaborating with ICIMOD, IBSRAM, FAO and UNDP. Some NGOs have also established working relationship with soil and water conservation institutions in the sub-region. However, there is still a need for strengthening such networking to promote collaborative research and to finding solutions for the problems faced by the farmers.

6.6 Effectiveness of Measures in Local Capacity Building

Nepal has institutionalised users' participation in NRM programmes, and has continued to build local capacity in developing and implementing operational plans in community and leasehold forests. Local people are being promoted in an effort to resources management and their sustainable use through policies and legislation. The government institutions and NGOs have continued to build the capacity of the users. However, its coverage is low. Nepal realises an additional need for developing capacities of the local bodies and grass-root institutions so that policies and legislative provisions are adequately translated into actions.

As is mentioned in the First National Report 2000, Nepal's legal regime on natural resources management is people-centred. The Forestry Sector Master Plan 1988 and the Forest Act, 1993 emphasise to handover government-managed forests to users in the form of community forestry. By this provision, a total of 11,065 community forestry user groups are legally recognised as of 9 April 2002 and about 0.852 million ha of government-managed forests are handed over to these groups, and about 1.2 million households (average of 5.45 persons/household) are involved directly in managing community forests. This effort of decentralisation has also been well established in buffer zone areas, soil conservation and irrigation water management schemes.

Nepal has also introduced legal provisions for stakeholders' participation in environmental assessment process. The Environment Protection Act, 1996 and the Environment Protection Rules, 1997 provide provisions to involve the local people at least three times during the preparation and approval of environmental impact assessment (EIA) report and its associated process. Local people

must be informed about the nature of the proposal and planned activities for implementation prior to the submission of the Scoping Document to the government for its approval. The proponent must conduct a public hearing on the project site before the finalisation of the EIA report, and MOPE must make the EIA report public for 30 days before approval. These initiatives are meant for providing adequate information to the local people, empower and strengthen local institutions, and also strengthen decentralisation process and encourage the people in natural resource management. Similarly, the law mandates for environmental monitoring of the proposal in question. There are ample opportunities to link and see the project-related damages to the land and water system. However, monitoring and evaluation of environmental impacts are yet to be strengthened. In recent years, some practices have been made to mobilise the local NGOs and users in monitoring activities, particularly in the road development projects.

6.7 Access to Appropriate technology, knowledge and know-how

As mentioned in section 2.4, a number practices have been in continuum to conserve soil and water and increase productivity. In view of the pros and cons of these techniques in relation to their efficiency and effectiveness, local techniques and practices, such as terracing, use of vegetation and loose boulders, contour hedgerow, windbreak, bioengineering techniques, trapping flood water, farmers-managed irrigation systems, water harvesting and pasture management, have been prioritised for soil and water management in the hills. These practices have been improved by blending the local skills and knowledge with scientific and technological studies. These studies are ongoing with the support from external assistance. Foreign experts involved in the concerned projects have contributed to refine the local know-how.

At present, SALT (Sloping Agricultural Land Technology) and agroforestry system has been promoted. A SABO technique - a Japanese technique - is recently introduced in some places of Nepal to stabilise roadside slopes and reduce water-induced soil erosion. Although this technique has been effective, it is rather expensive. In view of the cost-effectiveness and technical know-how on the use of techniques and technologies, Nepal is promoting the use of local practices.

6.8 Partnership Agreements Applied

Nepal has over two decades of experience in mobilising community users for natural resource management. The draft NAP emphasises to maximise the use of this strength and promote cost and benefit sharing approaches. Operationalisation of internal partnership has been very effective in managing natural resources, particularly forests and water for irrigation purposes. Nepal's legal regime on NRM promotes users' participation and hence, a clear functional agreement is working in this area. While developing the enabling mechanisms, consultation process has been continued with local bodies, users, NGOs and private sector on case-by-case approach. The recent policy and legal focus on empowering and strengthening local bodies will further streamline such partnership at the national level. It is hoped that such partnership will be institutionalised during the NAP implementation as the draft NAP defines the implementation role of different stakeholders.

The NAP contains actions to promote the participation of different stakeholders' right from the policy to implementation levels, i.e., the grass-root level. In order to effectively implement the NAP, a coordinating body has been proposed for policy guidance, supervision and monitoring (Annex 5 and 6). It is envisaged that the implementing agencies, particularly the government departments and district level line agencies will develop mechanisms to ensure the participation of farmers, NGOs and CBOs, academic and research institutions, and scientific communities. The

private sector, particularly the business community will be encouraged in achieving the twin goals of meeting the raw materials and rehabilitating the degraded lands.

Local NGOs and CBOs will be the main facilitators and implementers in promoting public awareness. They will develop farmers' capabilities in implementing NAP activities. The academic, scientific and research institutions will be encouraged in conducting site-specific research and refine locally suited techniques and technologies blended with scientific innovation. The academic and research institutions such as the Royal Nepal Academy of Science and Technology (RONAST), Institute of Science and Technology, Institute of Agriculture and Animal Sciences, Institute of Forestry, Department of Forest Research and Survey, Department of Plant Resources, and Nepal Agriculture Research Council, Department of Water-induced Disaster Prevention, Department of Hydrology and Meteorology will be encouraged to participate in problem-solving action research, develop technologies, provide scientific advices and facilitate the farmers to adopt proven techniques and technologies independently or through collaborative arrangement.

Financial Allocation and Technical Cooperation

7.1 Adopted Financial Mechanism

Benefits of natural resource management programmes could be obtained after years of continuous efforts. At present, the Environment Conservation Fund, administered by the Ministry of Population and Environment is the legal funding mechanism and receives grant from the central consolidated fund. It has limited funding to cater the services of the local demand. However, this fund, if replenished, provides hopes to mobilise local bodies, NGOs and CBOs. As per the provisions of the Environment Protection Rules 1997, this fund could be used, inter alia, for the conservation of national endowments, education, training and research.

HMG has established the Poverty Alleviation Fund and planned for the establishment of the Trust Fund for Biodiversity Conservation. Implementation of various activities through these funds would also contribute to increase land productivity in the process of poverty reduction and biodiversity conservation. Local bodies, NGOs, CBOs and the civil society will have access to such funding sources.

In this context, the possible funding sources are:

- National Consolidated Fund
- Environment Conservation Fund
- Poverty Alleviation Fund and proposed Trust Fund for Biodiversity Conservation
- National Agricultural Research and Development Fund
- Funds generated by the community users such as Community Forestry User Groups, Irrigation Water users, and buffer zone users
- Bilateral and multilateral donors
- The Global Mechanism of the UNCCD
- Global Environmental Facility
- UN bodies etc.

7.2 NAP Financing

In order to implement the actions as mentioned in section 4.2, both domestic and external funding sources have to be tapped. A total of US\$ 96.9 million has been estimated for NAP implementation and increase the coverage of the ongoing programmes and projects. The indicative budget is given in Table 3 and it includes continuation of ongoing activities. About 14 per cent of the total budget is estimated for supportive actions, which are very important to institutionalise the implementation of the main sector programmes.

Table 3. Indicative Budget for NAP Implementation

SN	Sector	Programmes			Estimated Budget (US\$)
		Small	Medium	Large	
1	Forests Management	4.9 mill	11.5 mill	5 mill	21.4 million
2	Soil and Water Conservation	3.3 mill	21 mill	4 mill	28.3 million
3	Pasture Management	2.4 mill	2 mill		4.4 million
4	Special Programmes for the Mountains	1 mill	9 mill		10 million
5	Food Security and Poverty Alleviation	0.9 mill	2 mill	5 mill	7.9 million
6	Early Warning and Disaster Relief Systems	2.5 mill	3 mill		5.5 million

7	Cross-sectoral Programmes	0.4 mill	5 mill		5.4 million
	<i>Sub-total</i>	<i>15.4 mill</i>	<i>53.5 mill</i>	<i>14 mill</i>	<i>82.9 million</i>
	Supportive Programmes¹	6 mill	8 mill		14 million
	Total	21.4 mill	61.5 mill	14 mill	96.9 million

Implementation of the NAP requires much needed financial resources and technical assistance. These resources could be channelled through national and international funding mechanisms. In the spirit of the Convention, the developed country Parties would commence to provide the Least Developed Country (LDC) Parties additional technical and financial assistance. The Global Mechanism would be instrumental in channelling the financial resources for the developing countries, particularly the LDC Parties like Nepal. The UNCCD Secretariat would also further expand its activities to assist the poor countries in finding technical and financial resources. After the inclusion of land degradation, primarily desertification and deforestation, eligible for funding under the GEF portfolio, this will be one of the dependable sources for financial assistance.

At the national level, Nepal has continued to allocate funding for land improvement and water management activities regularly and about 12 per cent of the total annual budget is spent in NRM programmes each year. Donors' assistance has been effective to increase the coverage of activities. In case of drought mitigation, irrigation facilities have continuously been developed. HMG provides disaster relief fund on case-by-case approach. The Poverty Alleviation Fund will support activities that directly contribute to poverty reduction, and institutionalise decentralisation process to empower the people by taking resources at their doorsteps. The Environment Protection Fund has been established in 1997 as per the provisions of the Environment Protection Act, 1996. The amounts received from HMG, foreign governments or international organisations, and from other sources shall be deposited in this Fund. HMG provides a modest amount (about US\$ 50,000/) annually to this Fund. Similarly, the user groups such as community forestry users, buffer zone users and irrigation water users could make some surplus at the local level and may provide seed input financially for the implementation of these programmes. However, the existing Funds should be replenished in such a way that necessary financial resources are available to cater the demand-based services, initiate new activities and/or continue ongoing ones, and increase area coverage by such activities.

As high priority is given to continue ongoing activities, additional external assistance is expected, in the spirit of the Convention, in implementing the main programmes including mapping of the degraded land and desertified area, developing human resources, preparing enabling mechanisms for activities, information sharing, technology development, transfer and use, and scientific studies and research. Nepal expects an additional assistance of the developed country Parties for NAP implementation.

The Global Mechanism (GM) has partly assisted in organising a national workshop in December 2001 and borne the preparatory cost for drafting NAP. Once the NAP is on board, Nepal expects the role of the Global Mechanism in channelling additional funds for NAP implementation, particularly in field level activities and capacity building.

¹ Includes programmes on policy, regulatory framework, institutional strengthening, research and scientific studies, indigenous technology use and development, data and information management, education, public awareness and capacity building.

During the immediate past two years, the UNCCD Secretariat and the Global Mechanism has provided grant to initiate NAP formulation process. Other donors have not been contacted so far for UNCCD activities directly. Nepal has so far received US\$ 18,000/ (US\$ 10,000/ from the UNCCD Secretariat and US\$ 8,000/ from the GM). Besides, Nepal spent about US\$ 16,000/ through national consolidated fund to conduct necessary studies as a part of UNCCD implementation. A number of stakeholders have provided space and logistics in organising interaction meetings on the preliminary draft NAP in the country. In view of the increasing problems of land degradation, these resources are grossly inadequate and external funding is urgently required.

7.3 Technical Cooperation and Priority Areas

As mentioned above, several programmes have been initiated with donor's assistance. These activities support directly or indirectly to meet the objectives of the Convention. Because of the magnitude and extent of the problem, the ongoing activities should be expanded to rehabilitate degraded lands and implement preventive measures so as to minimise potential land degradation and mitigate the effects of drought.

In view of the present needs and limitations, Nepal underscores the important role of the donor agencies for NAP implementation. The NAP will be ready for implementation within few months and it requires significant amount of financial resources for its implementation. As a least-developed country, Nepal would not be in a position to invest a substantial amount of financial resources through national sources for NAP implementation.

As mentioned above, programmes that promote the conservation of the Siwaliks and degraded hills are priority concerns of Nepal. Introduction of NWFPs harvesting and domestication will provide a basis to attract poor people, as an entry point, in the restoration of the degraded lands through income-generating activities. The NAP could be made more practical by mapping the degraded areas and prone to land degradation and desertification, and hence this mapping activity deserves special attention. As the international community is observing this year (2002) - an International Year of the Mountains, funding for sustainable tourism development integrated with natural resources management activities is another priority concern for Nepal. In addition, Nepal needs international assistance for the development of disaster prediction and forecasting facilities and establishing synergies amongst the relevant environmental conventions. There is a need for external financial support to accelerate the pace of rehabilitation of the degraded lands. Furthermore, capacity building deserves special attention for international cooperation and assistance. In order to promote NAP implementation, it is necessary to build the capacity of the local level institutions involved in programme implementation. In this context, capacity building and mapping of the degraded areas and land prone to degradation and desertification are the top priorities for international cooperation and assistance at the initial stage.

Nepal on its own cannot implement all activities contained in the NAP through national resources due to her financial situation. Many programmes and actions can be accomplished through the modality adopted in Technical Cooperation among Developing Countries (TCDC). Adequate financial and human resources are needed to take greater advantage of the technical assistance opportunities, and most of the programmes could be implemented within the framework of the expanded technical assistance and/or cooperation.

Benchmarks and Indicators

8.1 Major Indicators

Some indicators identified in the draft NAP are related with change in land use, income level, frequency of landslides and floods and its effect on people and land, and flood and drought affected area. Other indicators could include areas like community forests, leasehold forests, protected area, growth rate and yield of selected species and forest types. Furthermore, area and productivity of pastureland in the temperate region, productivity of agricultural land, cropping intensity, amount of chemical fertiliser use, soil degradation and compaction, soil quality, nutrient loss from demonstration plots, salinisation, acidification, ecological succession etc. are also taken as the monitoring indicators. However, these indicators will be refined during NAP finalisation.

The water resources strategy has clearly defined the indicators. For example, potential disaster zones will be identified by type and located on district maps. Emergency relief materials will be made available in all five (development) regions by 2007. Management plan for pilot watersheds will be prepared and initiated by 2007. Year-round irrigation facility will be increased to 50 per cent of the irrigated land; and all 120 DHM hydro-meteorological stations will be equipped and operationalised by 2007 etc. Similarly, water-induced disaster prevention, warning/preparedness and mitigation measures will be established in at least 20 priority districts by 2010. These indicators are meant to provide a basis for developing and/or strengthening activities to improve land condition and minimise the effects of drought.

8.2 Operational Mechanisms for Monitoring and Evaluation

The NCB and coordination mechanism mentioned in sub-section 4.2.2 is a mechanism for monitoring and evaluation of NAP activities and this facilitates stakeholders' participation. Potential exists to seek the active participation of the local bodies and user groups in programme monitoring and evaluation. In addition, there are other established mechanisms. For example, environmental monitoring of the projects that require environmental assessment should be carried out as an integral part of project implementation as per the EPA 1996 and EPR 1997. In general project specific indicators are developed, monitored and evaluated through an in-built system.

Sectoral agencies and other various institutions have developed and managed information system, and a national coordinating body has been proposed for coordinating monitoring activities under the NAP.

In order to ensure information sharing, Nepal published a comprehensive State of the Environment Report in 2001 in pressure-state-impact-response (P-S-I-R) framework. It includes information at national level on the status of natural resources particularly forests, land, water, and soil degradation. Furthermore, the State of the Environment (Agriculture and Forests) documents issues, concerns and approaches within the PSIR framework on land degradation and desertification. These documents have been posted in the website as a part of information exchange. The data bank development is also on progress.

As per the Constitution of the Kingdom of Nepal 1990, every citizen has constitutional rights to be informed and all actors have equal access to those information. However, they have been prepared in the English language and demand exists for national language for local people.

Although all users have equal access to available information, intellectuals, academic groups, NGOs, researchers, and students are the noted dominant users based on web statistics. It means, much still remains to be done to provide necessary information to local people and grass-root organisations who require information in local or national languages.

Information is generated and processed with the help of consultants, professional organisation and academic and research institutions. A practice has been institutionalised to discuss and share information with stakeholders. In case of environmental assessment reports, a practice of sharing information has been legally institutionalised. As mentioned above, the public should be informed through media or other means about the proposal prior to the submission of the Scoping Document for EIA study, conduct a public hearing on the project site after the preparation of the draft EIA report, and make public the final EIA report before its approval by the Ministry of Population and Environment.

The concerned agencies particularly the scientific and technical institutions have been encouraged to generate and share information on natural resources including land degradation and desertification. The research institutions such as the DFRS, DPR, NARC, and other academic and research institutions are involved in this process. At the project level, involvement of academic and research institutions is limited in monitoring and evaluation. Publication and dissemination of the study reports are practiced as a part of information sharing. Furthermore, the print and electronic media are involved in disseminating the information. In each of the stakeholders' consultation, workshops and interaction meetings, media participation is highly encouraged and the local media has also been instrumental in generating public awareness. The radio and television broadcast on NRM related issues and concerns on a regular basis is needed to promote public awareness.

8.3 Monitoring and Assessment of Land Degradation and Drought

Sporadic studies are conducted to assess the conditions and impacts of land degradation and drought. Although some demonstration plots are used to monitor soil loss, its coverage is very low in view of the magnitude and extent of the problems, and ecological variations.

As drought is temporary in nature and occurs even in the "wet season", a regular monitoring system is yet to be established with stakeholders' participation. Once the drought occurs, there is a practice of evaluating the area of affected productive land, and loss of production from such phenomenon. In case of heavy loss, there is also a practice of waiving the land tax for the affected season and subsidising the cost for shallow tube wells, seed and fertiliser for the following season. In a nutshell, Nepal yet needs to work more to streamline monitoring and assessment of land degradation and drought in the spirit of the Convention. This assessment could be more effective after mapping the degraded land and desertified areas and hence, Nepal expects additional assistance in this area as well.

Conclusion and Recommendations

Land degradation and desertification are the prominent environmental issues in Nepal. The State of the Environment Report 2001 urged to implement land improvement activities to arrest further land degradation as curative and/or rehabilitative measures while desertification is a moderate problem at present and requires preventive actions.

Nepal has progressed since the last two years in generating information and drafting the NAP. The NAP recognises the need for continuation of various programmes and actions as preventive and rehabilitative measures for increasing the productivity of land and water system with a bearing on poverty reduction. The NAP opens avenues to integrate and expand income-generating activities in NRM programmes. The NAP requires adequate funding, trained human resources, enabling mechanisms and expanded monitoring and evaluation system for its successful implementation. In this context, Nepal expects additional technical and financial assistance from bilateral and multilateral donors. Nepal also expects that NAP implementation will help in addressing the major problems of the mountains, reducing poverty, further bringing the people in the mainstream of natural resource management, and establishing highland-lowland issues at the sub-regional level.

In view of the emerging issues and need to address them, Nepal considers that the Committee for the review of the Implementation of the UN Convention to Combat Desertification (CRIC) in the forth-coming meeting may wish to discuss and recommend on the following issues:

- Mobilising additional resource to the small and least developed countries;
- Establishing linkages and synergies between the relevant conventions, and additional funding for common programmes;
- Implementing pilot projects for the rehabilitation of degraded uplands to minimise downstream effects;
- Enhancing participatory processes; and
- Exploring knowledge, attitude and practices of the community in fighting against land degradation and desertification.

These initiatives will further streamline UNCCD implementation and poverty reduction.

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Annex 1

Prioritisation of Significant Environmental Issues

Most urgent environmental issues	Moderately urgent environmental issues	Less urgent but still significant
<ul style="list-style-type: none"> ▪ Forest depletion ▪ <i>Land degradation</i> ▪ Solid waste management ▪ Water pollution ▪ Air pollution 	<ul style="list-style-type: none"> ▪ Dwindling biodiversity ▪ <i>Desertification</i> ▪ Haphazard urbanisation ▪ Forest fire ▪ Groundwater depletion ▪ Glacial lake outburst flood events ▪ Food security ▪ Alternative energy 	<ul style="list-style-type: none"> ▪ Waning fisheries ▪ Decreasing biomass energy ▪ Transboundary movement of wastes ▪ Noise pollution

Source: UNEP, 2001

Annex 2

Composition of the National Commission on Sustainable Development

1	Right Honourable Prime Minister	Chairman
2	Hon'ble Minister for Finance	Vice-Chairman
3	Hon'ble Minister for Population and Environment	Member and Secretariat Head
4	Hon'ble Minister for Agriculture and Co-operatives	Member
5	Hon'ble Minister for Industry, Commerce and Supplies	Member
6	Hon'ble Minister for Foreign Affairs	Member
7	Hon'ble Minister for Forests and Soil Conservation	Member
8	Hon'ble Minister for Health	Member
9	Hon'ble Minister for Water Resources	Member
10	Hon'ble Minister for Science and Technology	Member
11	Hon'ble Minister for Women, Children and Social Welfare	Member
12	Representatives from women, ethnic group, youth, NGO, locally elected body, labour organisations, industry and commerce, scientific and technical community, and farmers	Members (7 members as nominated by the Prime Minister)
13	Secretary, Ministry of Population and Environment	Member Secretary

Annex 3

Selected Institutions involved in Natural Resource Management

SN	Institutions	Major Responsibilities
<i>Advisory Bodies</i>		
1	Parliamentary Committee on Environment	Discuss bill, review, monitor and prepare annual report on implementation status of HMG's policies, programs and activities on environment, forests, soil conservation, industry, housing and physical planning and propose alternative policies, resource mobilisation and administration, ratification of treaties and affiliation with international institutions
2	National Planning Commission	A principal policy advisor of the government, formulate policies and strategies, design and monitor programmes including in the field of environment and resource management at national level
3	Environment Protection Council	Provide policy guidance and suggestion and ensure coordination on environmental matters, re-constituted in 1998 in accordance with the provision of the Environment Protection Act, 1996
4	National Commission on Sustainable Development	Conducts studies on economic, social and environmental aspects and advise to NPC on achieve the goals of sustainable development (SD), ensure inter-ministerial coordination, develop mechanisms to bring the national NGOs in the mainstream to implement SD concept and strategies including of Agenda 21, implement SD Agenda for Nepal, provide suggestions on environmental policies and laws, coordinate to meet the duties and obligations of the international conventions, and coordinate with international institutions and make necessary agreement for financial assistance
5	Water and Energy Commission	Formulate policies and develop guidelines to integrate environmental aspects in water resources and energy development projects and programmes
6	Central Natural Disaster Relief Committee	Develop and implement disaster preparedness, mitigation and relief measures
<i>Policy-making Bodies related to environment, land and water management</i>		
7	Ministry of Population and Environment	Formulation and implementation of policies, plans and programs, focal point for national and international organisations, pollution control, environmental conservation and balance, publication and publicity, regular and periodical monitoring and evaluation of activities, and human resources development
8	Ministry of Forests and Soil Conservation	Conservation, management and sustainable use of forest products, conservation of national parks, wildlife reserves and hunting reserves, soil and watershed conservation, development of botanical gardens and herbarium, conservation, and balance of natural environment
9	Ministry of Water Resources	Promotion of water resources and environment conservation, irrigation development
10	Ministry of Agriculture and Co-operatives	Research and usage of knowledge of agriculture chemistry and soil, development of agriculture technology, compost and chemical fertilisers, and quality certification of agricultural seeds, plants, and livestock
11	Ministry of Local Development	Promotion and implementation of environmental activities through local bodies
12	Major HMG Departments	Soil Conservation and Watershed Management, Forests, Agriculture, Livestock, Water Induced Disaster Prevention, Hydrology and Meteorology etc.
<i>Local Bodies</i>		
13	District Development Committees	Formulation and implementation of plans related with forests, plants, biodiversity and soil conservation; and other activities which facilitates environmental conservation and its promotion
14	Municipalities	Integration and implementation of the environment protection measures
15	Village Development Committees	Soil conservation, irrigation and river training, fallow, hills and sloppy areas and public land afforestation, development and implementation of activities for the conservation of forests, plants, biodiversity and soil

<i>Selected NGOs</i>		
16	King Mahendra Trust for Nature Conservation	Conservation, promotion and management of wildlife and natural resources
17	Social Welfare Council	Surveillance, counselling to and monitoring of NGOs, assistance for developing plans and programs, and channelling of funds
18	Other NGOs	Jara Juri Kosh (Fund for Root and Rooting), Nepal Forum of Environmental Journalists, Nepal Agro-forestry Foundation, Institute for Sustainable Agriculture etc.
		Major Entities
19	<i>Selected CBOs</i>	Federation of Community Forestry Users, Federation of Water Users Association, Community Development Groups, Buffer Zone Management User Groups, Associations of coffee, tea, silk, seed, flower etc.
20	<i>Research Institutions</i>	Department of Forest Research and Survey, Nepal Agriculture Research Council, Royal Nepal Academy of Science and Technology and universities etc.

Annex 4

Major Legislations dealing with Forests, Land and Water Management

SN	Legislations	Major Provisions
1	Muluki Ain (Civil Code Act), 1963	Provides general rules concerning water rights including upper riparian rights to use water for irrigation purposes
2	Land Act, 1964	Provides land ceiling (upper limit of land)
	National Parks and Wildlife Conservation Act, 1973	Expansion of protected areas (PAs) and launching of wildlife conservation activities with people's participation in buffer zones and Conservation Areas (CA)
3	Land Acquisition Act, 1977	Provisions on land acquisition and compensation processes and provides the Compensation Determination Committee to decide for cash or land compensation or both in consultation with the landowners
4	King Mahendra Trust for Nature Conservation Act, 1982	Implementation of nature conservation activities in the designated areas
5	Soil and Watershed Conservation Act, 1982	Regulate land use in the designated watershed areas to minimize soil erosion, and landslides, control natural climates such as flood, and landslides, conserve watershed areas, and classify lands protected areas
6	Natural Disaster Relief Act, 1982	Provides provisions to constitute Natural Disaster Relief Committees at the central, regional, district and local levels along with Relief and Treatment Sub-Committees, and Shelter and Rehabilitation Sub-Committees to co-operate and co-ordinate on disasters
7	Seed Act, 1989	Provisions for registration and release of crops, vegetables, pulses and oil plants varieties for cultivation
8	Nepal Agricultural Research Council (NARC) Act, 1991	Carry out research on problems and solutions including development of technologies in the agricultural sector
9	Pesticide Act, 1992	Register and regulate the use, production and distribution of pesticides so as to avoid or minimise the impacts of agro-chemicals on soil, environment and foodstuffs
10	Water Resource Act, 1992	Use of water resources without adversely affecting the environment from soil erosion, landslide, flood or other means
11	Forest Act, 1993	Handing over parts of government-managed forests to community and leasehold forestry user groups, and develop as private forests based on operational forest management plan, provide forest area to national priority projects, in case of no alternative, by ensuring no significant adverse impacts on the environment
12	Environment Protection Act, 1996	Institutionalise environmental assessment system, control pollution, maintain environment conservation area, administer environment protection fund, provide stakeholders participation three times (before Scoping Report preparation, public hearing after draft EIA report preparation and release of final EIA report for public review before approval) of each projects undergoing EIA
13	Livestock Health and Service Act, 1998	Import regulation through quarantine services and livestock development and services
14	Local Self-Governance Act, 1999	Integrate forests, soil and biodiversity conservation, promote land use and environmental planning as an integral part of area development by the local bodies

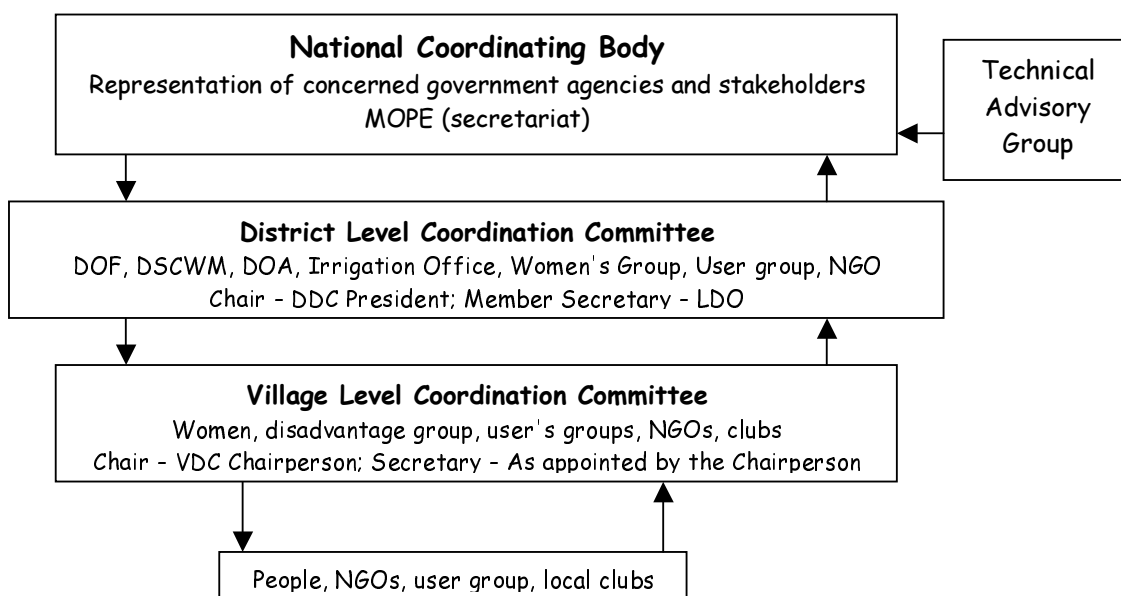
Annex 5

Composition of the Proposed National Coordinating Body

1	Hon'ble Minister for Population and Environment	Chairman
2	Hon'ble Vice-Chairman, National Planning Commission	Vice-Chairman
3	Hon'ble Member, Parliamentary Committee on Environment	Member
4	Secretary, Ministry of Population and Environment	Member
5	Secretary, Ministry of Forests and Soil Conservation	Member
6	Secretary, Ministry of Local Development	Member
7	Secretary, Ministry of Agriculture and Cooperatives	Member
8	Secretary, Ministry of Science and Technology	Member
10	Member, Royal Nepal Academy of Science and Technology	Member
11	Chairperson, Association of District Development Committees	Member
12	Chairperson, Association of Village Development Committees	Member
13	Chairperson, Municipality Association of Nepal	Member
14	President, Federation of Nepalese Chambers of Commerce and Industry	Member
15	Chairperson, NGO Federation	Member
16	President, Federation of Nepalese Journalists	
17	President, Federation of Community Forestry Users	Member
18	President, Federation of Irrigation Water Users Association	Member
19	Representative, donor agency	Member
20	Government nominated three experts (women, academic institution and INGO)	Member
21	Joint-Secretary, Environment Division, MOPE	Member-Secretary

Annex 6

Proposed Coordination Mechanism



Note: At all levels, concerned development agencies should be accommodated.

Annex 7

Ongoing Some Projects Pertaining to Natural Resource Management

Name of the project	Donors	Amounts	Date	
			Commencement	Completion
Bagmati Integrated Watershed Management Project	EU	EURO 12.2 mill	1998	2003
Bardia Integrated Conservation Project	WWF	USD 1.5 mill	1995	2000
Bhutani Refugee Project	UNHCR			1998
Buffer Zone Development Project, Bardiya	CARE	USD 0.97 mill	1997	2003
Churia Forestry Development Project II phase	GTZ	TDM 15,000	1998	2001
Churiya Watershed Management Project	CARE		2002	2007
Community based Poverty Alleviation Programme for Development	DFID, UK		2000	2003
Community Development and Forest/watershed Cons. Project II Phase	JICA		1999	2004
Community Forestry Field Implementation Component	DANIDA	DKK 45 mill	1999	2003
Dhading Resource Management Project (DRMP)	UMN	NRs. 45 mill		2002
Enabling activities for the preparation for the initial communication related to UNFCCC in Nepal	UNEP/ GEF	UDS 0.310 mill	1999	2003
Environmental and Forest Enterprises Activity Project	USAID	USD 88 mill	1996	2002
Inform and Analysis for Sustainable Forest Management Linking National & International effort in South and South- East Asia	FAO	USD 2 mill	2000	2004
Leasehold forest Project	IFAD			2003
Middle Range Development Project, Bardia	CARE Nepal			2002
Natural Resource Management Sector Assistance Programme (NARMSP) Project	DANIDA	USD 17.4 mill	1998	2003
Natural Resource Management Sector Assistance Programme (NARMSAP) Project	DANIDA	USD 17.4 mill	1999	2004
Nepal - Denmark Watershed Management Project	DANIDA	DKK 15.8 mill	1996	2001
Nepal Australia Community Resource Management Project	Australia	AUS\$ 9.85 mill	1997	2002
Nepal Swiss Community Forestry Development Project (Fourth Phase)	Swiss			2004
Nepal Swiss Community Forestry Project (III phase)	Switzerland	CHF 3.6 mill	1997	2001
Nepal: Livelihoods and Forestry Programmes	DFID			2010
Northern Mountains Conservation Project	USAID / WWF	UDS 0.644 mill	1996	2001
Soil Conservation and Watershed Management Component Project (NARMSAP)	DANIDA	DKK 32.4 mill	1998	2003
Sustainable Community Development Programme (Cap 21)	UNDP	USD 0.819 mill	2000	2002
Sustainable Soil Management	SWISS	CHF 1.674 mill	1998	2002
Tree Improvement and Silviculture Component, NARMSAP Project	DANIDA	NRs 62.37 mill	1998	2003
Upper Andhikhola Watershed Management Project	CARE	USD 1.11 mill	1997	2002

Annex 8

Seminar Programme

Nepal: Second National Report on the Implementation of the UN Convention to Combat Desertification

Venue: Conference Hall of the Nepal Agriculture Research Council (NARC), Singhdurbar Plaza

Date: 19 April 2002

Time: 09:30am - 16:00pm

Organiser: Ministry of Population and Environment in collaboration with the UNCCD Secretariat

Time	Programme
09:30 - 09:45	Arrival of the participants
09:45 - 09:50	Chairman's Statement and Welcome Address Mr. Kaladhar Sharma, Officiating Secretary, MOPE
09:50 - 10:25	Presentation of the Draft Second National Report on UNCCD Implementation Mr. Batu K. Uprety, Ecologist, Environment Division, MOPE
10:25 - 11:25	<i>Statement by the Commentators</i> Mrs. Sunita Uprety, Sociologist, Tribhuvan University Dr. Mohan P. Wagley, Director-General, Department of Soil Conservation and Watershed Management, Ministry of Forests and Soil Conservation Dr. Devendra Chapagain, Agri-Economist and Ex-Member, National Planning Commission Dr. Madhav P. Ghimire, Joint-Secretary and Chief, Budget and Programme Division, Ministry of Finance
11:25 - 13:00	Question/Answer and Discussion
13:00 - 14:00	Lunch/Tiffin Chairman: Mr. Janak Raj Joshi, Joint-Secretary and Chief, Environment Division, MOPE
14:00 - 15:30	Collection of opinions, comments and suggestions
15:30 - 16:00	Sum-up and closing remark by the chairman

End of the Programme

Annex 9

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