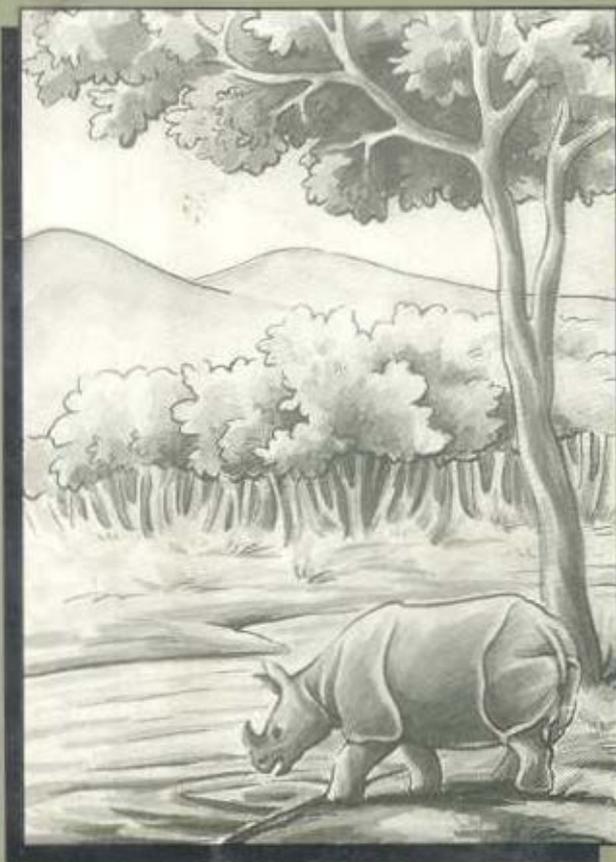


EIA Guidelines for the Forestry Sector



National Conservation Strategy Implementation Project

A Collaboration Between the National Planning Commission and
IUCN-The World Conservation Union



Nepal's National Conservation Strategy is being implemented under the National Planning Commission/IUCN NCS Implementation Project, through a series of programmes in the key areas of environmental planning and assessment, national heritage conservation, education and public awareness. Coordinated by the National Planning Commission, the implementation project involves representatives of all the major ministries and government departments concerned with environmental issues, as well as an increasing number of local non-governmental organisations.

Nepal is among more than 40 governments that have been assisted by IUCN in developing National Conservation Strategies. The National Conservation Strategy (NCS) for Nepal was completed in 1987 and endorsed as policy in 1988. IUCN was then requested by His Majesty's Government of Nepal to assist in the implementation of the NCS for Nepal.

Founded in 1948, The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organisations in a unique world partnership: over 865 members in all, spread across some 133 countries. As a union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

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1995

National Conservation Strategy Implementation Project
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The designations of geographical entities in this book, wherever applicable, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of the National Planning Commission and IUCN - The World Conservation Union concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views of the authors expressed in this publication do not necessarily reflect those of National Planning Commission, His Majesty's Government of Nepal.

Preface

Nepal's socio-economic development largely depends upon the conservation, management and sustainable use of renewable natural resource base, particularly the forests. Inadequate *ex ante* consideration of the environmental aspects, in the past, led to the degradation of the forest environment in particular. Economic growth which proceeds without proper attention to the management and sustainable use of the forestry resources may even be detrimental to the whole process of improving the quality of life. Numerous examples confirm the fact that development and conservation must go hand in hand for sustainability.

With this in perspective, His Majesty's Government of Nepal endorsed this *Environmental Impact Assessment Guidelines for the Forestry Sector* on 3 April 1995 in order to ensure the integration of environmental aspects in Nepal's forestry development proposals or the development proposals of other sectors to be implemented in the forest areas. Thus, these guidelines were gazetted in Volume 45, Number 19 on 21 August 1995 .

During the process of developing these Guidelines, the Ministry of Forests and Soil Conservation, in collaboration with the NPC/IUCN National Conservation Strategy (NCS) Implementation Project, organised a two-week long workshop from 17 to 28 August 1992. Senior officials of the Ministry of Forests and Soil Conservation and related ministries, departments, including officer representatives of the Environment Protection Council and National Planning Commission participated in the workshop. Participants drafted the Guidelines which were thoroughly reviewed and commented upon. The suggestions made by the concerned institutions were discussed in a half-day workshop organised by the Ministry in collaboration with the NPC/IUCN NCS Implementation Project on 28 January 1993. The Guidelines were updated by incorporating the suggestions of the relevant organisations, including those made by the Environment Protection Council.

These Guidelines were prepared entirely through a participatory process to produce a document suitable to the Nepalese context. These Guidelines are in line with the National Environmental Impact Assessment Guidelines, 1993 and details the steps required to ensure the incorporation of environmental aspects in project planning and implementation processes.

It is hoped that the Guidelines will assist in improving the environmental quality of the country by integrating environmental aspects right from the planning stage to the actual implementation of development proposals by forestry organisations, and/or other organisations planning to implement programmes in forest areas.

I would like to take this opportunity to thank all the individuals and organisations involved in developing these guidelines. I acknowledge the contribution of the NPC/IUCN NCS Implementation Project for providing logistical and technical support in developing these guidelines.



(Amrit Lal Joshi)
Chief Planning Officer
Ministry of Forests and Soil Conservation

August 1995

Introduction

Forests and the Environment

Nepal presents an unique landscape of ecological differences with contrast climatic and altitudinal variations within a small area. Nepal's socio-economic development largely depends on the sustainable use of renewable natural resources. Forests are Nepal's prime natural resource, traditionally used for meeting people's basic needs such as fuel, fodder, timber and medicines. The intense pressure on forests for socio-economic development and subsistence living have resulted in the emergence of a number of environmental challenges with equal and ample opportunities for improving environmental quality by restoring and/or reclaiming the degraded forest areas. Forests have become the most dependable source of rural energy as the clean energy is still untapped.

Forests have tremendous beneficial impacts in regulating the environmental changes. The plant directly contributes to balance the oxygen-carbon dioxide ratio in the atmosphere, regulates climate changes, reduces the noise level, absorbs different pollutants, minimises soil loss, and enhances water absorption potential of the soil. Forests also provide habitat for number of wild animals and conserve genetic resources not only for today's development but also for future generations. In this direction, along with the international initiatives, Nepal has been undertaking various measures to conserve the forests for improving environmental quality in a broader sense.

Major Environmental Concerns

Environmental problems are stemmed up not only from overuse of natural resources such as soil and forest, and the under-use of water and mineral resources but also due to the relative lack of economic opportunities and infrastructural facilities, including the *ex ante* consideration of the environment in socio-economic development process.

Nepal's environmental problems are broadly of rural and urban nature. The rural environmental problems are emerged practically due to forest degradation, and inadequate conservation measures. The problem is further accelerated with increased population growth. It has resulted to the loss of soil and nutrient, and loss of biological diversity, increase on landslides, floods, downstream sedimentation, drying-up of drinking water sources and contamination of drinking water etc. It has also direct linkages with the loss

in per unit area agriculture production, and encroachment to marginal, and environmentally sensitive lands.

The urban environmental problems differ with the rural ones and are the result of draining of untreated effluent, both domestic and industrial wastes, disposal and dumping of wastes, gaseous emission (industrial and vehicular emission), poor working condition, inadequate and the mal-functioning of the existing sanitation facilities. However, the problems could be reduced, to some extent, by introducing urban forestry programmes that may support to regulate air quality, noise level, and absorb other environmental pollutants.

In brief, Nepal's environmental problems, both of rural and urban nature, could be substantially reduced through the proper management of the green sector, and introduction of greenery in urban and industrial areas.

Environmental Initiatives

The forestry organisations, by integrating the environmental aspects, aim, *inter alia*, to;

- meet people's basic needs of forestry products
- contribute to food production through effective conservation of land resources
- protect land against accelerated degradation through ecological disturbance
- conserve the ecosystem, genetic resources and biodiversity
- ensure sustainable use of forestry resources for socio-economic development
- involve local people in all aspects of forestry, wildlife and land management and ensure equitable sharing of benefits accrued from their conservation.

In order to achieve the above objectives, by addressing the emerging needs of environment conservation, various measures have been initiated, through translating enunciated policies into action, enforcement of legislative provisions, programme implementation, human resources development and developing in-built mechanism for integrating environmental aspects in forestry programmes and other programmes to be implemented in the forest areas.

Policy and Legal Instruments

In accordance with the 21-year Master Plan for the Forestry Sector, the current Eighth Five Year Plan (1992-97), and the Nepal Environmental Policy and Action Plan, forestry organisations are committed to translate the enunciated forestry sector policies into action along with the enforcement of legislative provision. Forestry sector policies include, *inter alia*, ensuring development, conservation, management and sustainable use of forests,

wildlife and land resources with due consideration on regenerative and ecological capability of, particularly, the terrestrial ecosystem; conserving forests and land resources by categorising the natural forests into government-managed, community, leasehold, private and religious forests, and restoring/reclaiming degraded lands with soil conservation initiatives involving people's participation; multiple utilisation of forest resources of the private, community and leasehold forests in their own interest; carry out plant and forest research, and commercial farming and utilisation of herbs etc.

Forests, soil conservation and wildlife management activities are supported through the enforcement of the *Forest Act, 1993* and the *Forest Act Rules, 1995*, *National Parks and Wildlife Conservation Act, 1973* and *National Parks and Wildlife Conservation Act Rules*, and *Soil and Water Conservation Act, 1982* and *Soil and Water Conservation Act Rules 1985*.

Institutional Base

Forest conservation activities were institutionalised with the establishment of the Department of Forests in 1942. The Ministry of Forests, established in 1950, is one of the oldest government organisation, among current 21 ministries. This ministry has decentralised offices in all 75 districts and 5 regional directorates. The Ministry also has four departments, namely the Departments of Forests, Soil Conservation, Plant Resources, and National Parks and Wildlife Conservation; a Forest Research and Survey Centre, and four parastatals, viz. Central Zoo, Forest Products Development Board, Herbs Production and Processing Co. Ltd., and Nepal Rosin and Turpentine Co. Ltd.

Under different departments, there are, at present, forest offices in 74 districts, soil conservation offices in 43 districts, 8 national parks, 3 wildlife reserves, 1 hunting reserve, and 2 conservation areas, covering one or more districts, and the herbal centre.

HMG restructured forestry organisations in 1993, and defined their responsibilities and working areas with greater focus on strengthening field level organisations. Forestry organisations are more focussed towards conserving green areas by integrating environmental aspects in forestry development programmes. The Environment Section, under the Planning Division in the Ministry, approaches to ensure *ex ante* consideration of the environmental aspects in forestry development plans and programmes; and other development projects that intend to operate in the forest areas. Attempts are underway to strengthen the departments by orientation on forests and environmental issues.

The Ministry has been involved in integrating environmental aspects in forestry development programmes through institutional efforts since the 1980s. This was initiated with the launching of Environmental Impact Study Project in 1982. The Project, carried out environmental studies of several development projects, *inter alia*, in the sectors of forestry, irrigation, resettlement, watershed, protected areas, small hydel projects and industrial

establishments. This initiative resulted in the establishment of the Environment Division in the Department of Soil Conservation, and in the Ministry itself. In 1991, HMG renamed the Ministry of Forests and Soil Conservation as the Ministry of Forests and Environment, however, its name reverted back after the establishment of the Environment Protection Council - a policy coordinating body established under the chairmanship of the Prime Minister in late 1992.

Programmes

Various environment-friendly programmes are designed and implemented by the respective departments and parastatals along lines of the priorities set out in the Forestry Master Plan, and other periodical policies. At present, the government has given top priority to implementing community forestry activities in order to manage forests through people's participation and ensure the supply of forest products to meet their daily requirement. HMG has also given due consideration to national and leasehold forests, commercial farming and sustainable use of medicinal plants and non-timber forestry products, soil conservation and watershed management activities, conservation of varied ecosystems and biological resources both inside and outside the protected area system. Various site specific special programmes are under implementation. Of them, a *Ban Batika* programme, an initiative of the government, is especially designed for implementation in each Village Development Committees of all the terai districts. This initiative aims at improving the environment through greenery development, by the people and for the people. These forestry development activities are supported by an established mechanism of research and extension, information exchange, and monitoring and evaluation.

The forestry sector has received donor assistance in implementing both field and central level programmes with primary focus on promoting people's participation in forests and biodiversity conservation.

Nepal has become party to several environment-related conventions and agreements. The Ministry and its departments are nodal points for three international conventions and one agreement. They are the Convention on Biological Diversity, Convention on the International Trade of Endangered Fauna and Flora, Ramsar Convention, and International Tropical Timber Agreement. This Ministry is also tuning its forestry development activities to meet Nepal's commitments in these conventions and agreements in order to improve the environmental quality of the areas concerned.

Environmental Assessment in Forestry Sector

The Ministry of Forests and Soil Conservation visualised with foresight the importance of conserving forest and land resources for environmental improvements. Since, the 1980s, it initiated and duly adopted the environmental assessment process in its development activities. It recognises

the role of environmental assessment in identifying potential environmental impacts, analysing the significance of those environmental impacts, identifying alternative projects, processes or technologies, efficiency of mitigation measures, and selecting environment-friendly and environmentally benign development projects. These studies raise public awareness about the need of integrating environmental assessment in major development projects and programmes. It is realised that environmental assessment helps decision-makers to balance the pressure of immediate gain from over-use of forestry resources and focus on the sustainable use of resources for the long-term benefit of all living beings.

Accordingly, the Ministry carried out an environmental impact assessment of the Master Plan for the Forestry Sector in 1987 and make the plan's forestry programmes environment-friendly. It also introduced and encouraged the proponent to carry out environmental assessment in mining, quarrying and resort development activities proposed for implementation in forest areas under the provisions stipulated in the National Environmental Assessment Guidelines, 1993.

The experiences gained in the last 15 years and an approach to integrate environmental aspects in the forestry programmes encouraged an Environmental Impact Assessment (EIA) of the Bara Forest. A Bara Forest Management Plan has been developed for production-based forest development in Nepal. This strategic level EIA of the forest analysed two alternatives - the 'do-nothing' and the implementation of the operational forest management plan in 19 major issues ranging from biodiversity conservation to marketing strategies. It recommended implementation of the proposed management plan by revising the plan to incorporate several issues suggested. This study also called for institutionalising the environmental assessment process in forestry development projects, and programmes of other sectors planned for implementation in forest areas.

EIA Guidelines for the Forestry Sector, 1995

With the experiences gained and timely visualisation of the need of *ex ante* consideration of the environment in forestry development programmes and the programmes of other sectors in forest areas, His Majesty's Government, in keeping with the spirit of the National Environmental Impact Assessment Guidelines 1993, framed these Environmental Impact Assessment Guidelines for the Forestry Sector 1995.

The guidelines aim to facilitate the sustainable use of forest resources for socio-economic development and for meeting basic needs of the communities for forest products; to make proposals socio-culturally acceptable, economically feasible, and environmentally benign; to conserve genetic resources and biodiversity, and minimize environmental damage in forest areas; and facilitate in identification of positive and negative impacts of programmes to be implemented by other agencies in forest areas. These broad

objectives will be met by carrying out environmental assessment of development projects and programmes proposed for implementation in forest areas.

The guidelines were prepared through a participatory process. During its formulation, the Ministry convened a two-week long workshop in August 1992, in collaboration with the NPC/IUCN NCS Implementation Project to draft the guidelines. The draft guidelines were further discussed in a workshop convened on 28 January 1993. Comments and suggestions obtained from relevant organisations and from several in-house meetings were kept in mind while finalising these guidelines.

Need for EIA

Environmental assessment is needed to :

- make the development projects environmentally sustainable, socio-culturally acceptable and economically feasible to the extent possible
- reduce adverse environmental impacts in forest areas
- timely identification of environmental impacts on ecologically sensitive areas from proposed actions
- assess the effects of development projects on forests
- reduce overall environmental, social and economic costs of projects; and
- optimise project benefits

What is EIA?

EIA is a planning and management tool for studying and evaluating potential environmental consequences of proposed development projects in order to:

- identify beneficial and adverse environmental impacts
- examine the significance of the environmental implications
- assess whether adverse impacts can be mitigated
- recommend preventive and curative mitigation measures
- ensure people's participation and inform the affected parties in time
- advise whether proposed development projects should proceed
- inform decision-makers and interested parties about the environmental implications of projects
- provide information for decision-makers to determine whether a project should be implemented and in what form.

The guidelines will help decision-makers, planners, professionals and practitioners in carrying out environmental assessment of projects and programmes proposed for implementation in the forestry sector.

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His Majesty's Government
Ministry of Forests and Soil Conservation

Environmental Impact Assessment Guidelines for the
Forestry Sector, 1995*

His Majesty's Government of Nepal has framed the following Guidelines in order to minimise or avoid adverse impacts on the environment of development projects by integrating environmental aspects in the planning cycle of the forestry development proposals or other development works that affect forest areas.

Chapter I
Preliminary

1. **Short Title and Commencement:** (1) These guidelines shall be called "Environmental Impact Assessment Guidelines for the Forestry Sector 1995 (2052)".
(2) These Guidelines shall come into force immediately.
2. **Definitions:** In these guidelines, unless the subject or context otherwise meant.
 - (a) "Guidelines" means the Environmental Impact Assessment Guidelines for the Forestry Sector, 1995.
 - (b) "Assessment" means the Environmental Impact Assessment.
 - (c) "Proposal" means the forest development related or any plans and projects that affect the forest areas or forest based industries to be implemented (initiated) in the Kingdom of Nepal.
 - (d) "Proponent" means agency, organization or individual proposing to implement a forest-related plan or project.
 - (e) "Screening" means the action undertaken to determine whether or not environmental impact assessment is required for any proposal.
 - (f) "Impact Mitigation Measures" means the measures to be adopted to minimise or completely mitigate adverse impacts on the environment or searching of different types of alternatives and corrective, preventive and compensatory measures to be adopted to enhance positive impacts.
 - (g) "Schedule" means the schedules of the guidelines.

* Unofficial translation of the Environmental Impact Assessment Guidelines for the Forestry Sector, 1995 published in Nepal Rajpatra (Gazette). Volume 45, Number 19, 21 April 1995.

Chapter II

Objectives and Uses of the Guidelines

3. **Objectives:** The objectives of the guidelines are as follows;

- (a) To utilize renewable resources such as forests for the socio-economic development of the people, by ensuring sustainable development of forests.
- (b) To ensure that any of the proposals are socio-culturally acceptable, economically feasible, and environmentally benign.
- (c) To conserve genetic resources in forests, minimise environmental damage on land and ecosystems while meeting the basic needs of the Nepalese people for fuelwood, fodder, litter, timber, forest-based food, medicinal plants, or to produce optimally products from forests and maintain the production potential of agricultural land.
- (d) To ensure that the application of planning and management strategies, and the use of technology, are appropriate to the environment and to meeting people's basic needs, and to integrate provisions for environmental mitigation right from the planning stage of forestry development activities.
- (e) To facilitate in carrying out Environmental Impact Assessment studies in identifying positive and negative impacts of programmes to be implemented by other agencies on forest areas.
- (f) To assist in achieving objectives (a) to (e) as stated above.

4. **Uses of the Guidelines:** The following organisations or individuals shall use the guidelines.

- (a) Proponents of projects and programmes.
- (b) Ministry of Forests and Soil Conservation.
- (c) Line ministries, departments or offices.
- (d) Consultants involved in environmental impact assessment.
- (e) Environmentally concerned groups and the general public.

5. **Conditions Under Which Guidelines Should be Used:** The guidelines must be used in the following situations:

- (a) Proposals that directly affect forest areas and forests.
- (b) Proposals related to plantation, soil erosion control, conservation of wildlife habitat, development of forest-based industries.
- (c) Proposals to be implemented in forest areas but not initiated by the forestry sector.
- (d) Development proposals related to hydropower, road, irrigation,

stone quarry, drinking water, resettlement, agriculture, tourism and livestock development, and utilization of forest products that directly affects national parks and other such conservation areas.

Chapter III

Proposal Screening and Category

6. **Proposal Screening:** (1) Screening of a proposal is imperative to determining the social and environmental acceptability of the proposed forestry development projects, related proposals or proposals based on forest products and to determine whether environmental impact assessment is essential for a proposal.
- (2) Screening shall be necessary for all types of proposals pursuant to sub-section (1) regardless of size, location, costs, or its necessity.
- (3) The screening process shall divide the proposals into three categories as follows:
- (a) clearly requiring an environmental impact assessment;
 - (b) not requiring an environmental impact assessment; and
 - (c) not clear about whether an environmental impact assessment is required or not.
- (4) Works related to proposal screening shall be performed by the Ministry of Forests and Soil Conservation or the related departments thereunder.
7. **Proposal Screening Criteria:** (1) Essential screening criteria is to be determined in order to ensure whether or not environmental impact assessment is necessary for a proposal.
- (2) Under the arrangement made in sub-section (1), proposal screening criteria shall be developed in accordance with sub-section (1) of Section 8 of the National Environmental Impact Assessment Guidelines, 1993.
- (3) Environmental impact assessment shall be carried out for any proposal in case complete information is lacking about the likely impacts of the proposal or in case of uncertain impacts, in order to minimise future adverse impacts on the environment.
- (4) During the screening process, size of the proposal, place of implementation, incurred cost or environmental sensitivity of the working area, etc. shall be considered in addition to collecting information on the impacts of the development activity on the biological, physical, social and economic environment.
8. **Categorisation of the Proposal:** In cases where impacts of a proposal on the environment are uncertain, after doing Initial Environmental Examination proposals shall be divided as follows.

- (a) Proposals not requiring additional assessment.
- (b) Proposal to be submitted for approval after complete or partial change in a proposal.
- (c) Proposal requiring environmental impact assessment as initial environmental examination could not clearly answer the magnitude, extent and duration of the impacts on environment.

Chapter IV Initial Environmental Examination

9. **Initial Environmental Examination:** (1) Initial Environmental Examination shall be conducted to provide additional information to decision-makers on whether an environmental impact assessment is required or not to implement any proposal; to identify major impacts associated with the concerned proposal; to identify the types of positive and negative impacts, and to find out the extent of availability of knowledge and skill.
- (2) Initial environmental examination should clarify the following questions:
- (a) What are the positive and negative impacts on the environment while implementing the proposal?
 - (b) What are the most significant impacts associated with the development proposal?
 - (c) What are the characteristics of these impacts?
 - (d) How well could the adverse impacts be mitigated?
 - (e) What possibilities exist to maintain positive benefits anticipated?
 - (f) How certain are the positive benefits?
 - (g) Is the knowledge and skill available to minimise these significant impacts anticipated?
 - (h) If additional information are needed to minimise the adverse impacts, shall an Environmental Impact Assessment be necessary for review and refinement of the proposal?
 - (i) Is there any existent information about the adverse impacts of the proposed project on the environment?
- (3) Initial environmental examination and environmental impact assessment are not required for proposals listed in Schedule - I as anything mentioned in sub-section (1).
- (4) Initial environmental examination are required for proposals listed in Schedule - II.
- (5) The environmental impact assessment procedure should be used while carrying out initial environmental examination of any proposal.
- (6) Generally, initial environmental examination should be carried out

during the pre-feasibility study of the proposal.

(7) The responsibility for carrying out an initial environmental examination shall remain with the proponent.

Chapter V

Scoping and Terms of Reference for Environmental Impact Assessment

10. Environmental Impact Assessment: Environmental Impact Assessment is required for those proposals listed in Schedule - III, and for those proposals found necessary Initial Environmental Examination study.

11. Scoping: (1) After completing the proposal screening process, scoping shall be undertaken in order to find out the alternatives to the proposed activities of the proposal identified as posing potentially adverse impacts on the environment. Scoping shall be done in a simple manner where the study is to be initiated immediately.

(2) The scoping process shall determine the limit of the environmental impact assessment and shall be designed to attain the following objectives:

- (a) consider all types of impacts related to the proposal by identifying clearly the likely impacts on environment from implementation of the proposal;
- (b) look after the relevancy of the report and the environmental impact assessment;
- (c) identify alternatives for the proposed activities of the proposal and analyse the important impacts;
- (d) use best and appropriate assessment methods (procedures) that save time and money;
- (e) identify possible parties likely to be affected from the implementation of the proposal;
- (f) provide an appropriate opportunity for public participation;
- (g) prepare Terms of Reference carefully for environmental impact assessment; and
- (h) make available necessary time, money, administrative effort, and technical aspects.

(3) Scoping for environmental impact assessment may be done, besides at the beginning, from time to time during the assessment on the basis of new information.

12. Involvement During Scoping: (1) During the scoping process of a project proposal for environmental impact assessment, all groups to be directly affected by its implementation shall be involved.

(2) Considering the impact area of the proposal, representatives of concerned ministries, departments and agencies of His Majesty's Government, local representatives, funding agencies, non-governmental organizations, representatives of political parties, and the people of that area may participate in the group or parties, under sub-section (1).

(3) Proponent shall perform the initial work for scoping and its coordination, review and official approval shall be done by the Ministry of Forests and Soil Conservation or the Department concerned.

13. Methods of Scoping for Environmental Impact Assessment: (1) The Ministry of Forests and Soil Conservation shall prepare a scoping manual for all types of proposals. The manual shall include the following aspects:

- (a) assemble and synthesize background information relevant to the proposal;
- (b) prepare a brief overview of the anticipated advantages and disadvantages of the proposal outlining what, where, when, how and why;
- (c) devise a process for public participation for commenting on the proposal, and for incorporating suggestions, and simplifying it;
- (d) identify impacts of significant concern of the public and technical advisors;
- (e) determine the significance of identified impacts and ranking;
- (f) identify areas lacking of information and areas requiring additional information in the proposal; and
- (g) fix priorities for assessment in order to reach to a sound decisions with due attention on subjects of specific concerns.

(2) Proponent shall adopt the subject areas compulsorily mentioned in scoping manual.

But proponent shall perform according to the manual to be issued by the Ministry of Forests and Soil Conservation under this Guidelines until the manual is prepared, and the proponent shall do in accordance with such guidelines.

14. Preparation of Terms of Reference: After scoping for environmental impact assessment, a Terms of Reference, in general, shall be prepared by incorporating the following aspects in order to systematically proceed in the environmental impact assessment work:

- (a) Impacts to be investigated and methods to be used.
- (b) Work schedule with task completion date for different works related to assessment and final date for assessment completion.
- (c) Public involvement methods and time schedule to be used.
- (d) Shape, size and content of the final environmental impact assessment report, and contents to be contained in it.
- (e) Responsibility of a proponent, reviewer and other involved people.

- 15. Format of Terms of Reference:** (1) The Terms of Reference shall be prepared in the format prescribed in Schedule IV.
- (2) The terms of reference for environmental impact assessment shall be duly signed by the Officer authorised by the Ministry of Forests and Soil Conservation or the Department concerned.
- (3) The terms of reference shall provide guidelines and shall guide the environmental impact assessment works, but the Ministry of Forests and Soil Conservation may change (add or subtract) the issues if and when necessary in the terms of reference.

Chapter VI

Identification of Impacts, Prediction and Ranking Methods, and Mitigation Measures for an Environmental Impact Assessment

- 16. Identification of Impacts:** (1) Environmental Impact Assessment shall identify all types of positive and negative impacts associated with the proposed proposal on social, economic, biological, physical, chemical and cultural parameters and classify the nature of the impact into direct, indirect, short-term, long-term or cumulative impacts.
- (2) Appropriate methods such as checklist, matrices, network shall be adopted for impact identification and comparison of development activities in forest areas. It will be necessary to furnish information on cost and benefits of various options of the proposal to decision-makers and the general public by weighing and comparing the impacts in order of priority.
- (3) Prediction about the magnitude, extent and duration of the selected important impacts shall be based on available environmental baseline data and implementation of the proposed development programme. These anticipated impacts should be described in qualitative and quantitative terms. Prediction shall also include its basis.
- (4) An environmental impact prediction shall include the following:
- (a) initial state of the area before proposal implementation;
 - (b) anticipated future state with the proposed action; and
 - (c) anticipated future state without the proposed action.
- (5) In order to ascertain the impact types such as the magnitude, extent and duration associated with a proposal, an assessment framework shall be defined for comparing the relative environmental impacts of any proposal to be implemented.
- 17. Environmental Impact Ranking:** (1) A numerical scale shall be developed to provide quantitative assessment of the various types of predicted impact. For example, the following ranking methodology has been used in many studies:

MAGNITUDE		GEOGRAPHICAL EXTENT		DURATION	
High/major	60	Regional	60	Long term	20
Moderate	20	Local	20	Medium	10
Minor	10	Site specific	10	Short term	05

(2) As per the table, mentioned in sub-section (1), a sum of the impact value for magnitude, extent and duration provides a maximum value of 140 and a minimum value of 25. This type of ranking methodology is useful for comparing different alternatives of a proposal.

(3) In order to make the predictions useful to the decision-makers on environmental impact assessment for the forestry sector, the following factors should be considered:

- (a) the adequacy (range) of alternatives needed for right decision-making;
- (b) the elements of the environment to be studied and predicted;
- (c) the measurement basis for predictions;
- (d) the goals or definite threshold values existing or needing definition;
- (e) the temporal and spatial boundaries of the proposal and the level of resolution required; and
- (f) the statistical confidence limits that will be acceptable for decision-making.

18. Mitigation of Environmental Impacts: (1) Potential ability of impacts identified as causing greater damage rather than damage caused normally should be limited by adopting effective mitigation measures in the design, implementation, and post project stages.

(2) The mitigation measures described in sub-section (1) should be built into the design, implementation and post project stages as an integral part of the environmental impact assessment process.

(3) Environmental impact assessment shall mention all potential impacts of a proposal and measures to eliminate or reduce the impacts as far as possible. It shall also mention efficiency of the different measures proposed.

(4) In addition to mitigation of the impacts, as mentioned in sub-sections (1), (2) and (3) the proponent shall minimise compulsorily the environmental impacts by considering alternatives, compensatory measures, corrective measures, preventive measures and implementing impact mitigation measures, as described in section 27 of the *National Environmental Impact Assessment Guidelines 1993*.

19. Selection of Alternatives: (1) In clearly understanding and achieving the stated goals of the proposed proposal, it is necessary to present different alternative measures for the impacts and their mitigation measures.

(2) It is important to clearly show positive and negative impacts if the proposed proposal does not proceed. It (do-nothing alternative) provides a baseline for comparison to the other alternatives and is helpful in incorporating mitigation measures in order to minimise adverse impacts into a finally approved alternative.

(3) An alternative shall be of the part or all of the proposal and on some or all aspects such as location, duration, work schedule, available alternative technology or energy shall also be included in such alternative.

Chapter VII

Review of Environmental Impact Assessment Report, Monitoring and Evaluation

20. Reviewing the Environmental Impact Assessment: (1) The final environmental impact assessment report will be evaluated by a panel of experts of the Ministry of Forests and Soil Conservation, including experts from concerned departments, proposing the organisation (proponent), donor agency, and the National Planning Commission.

(2) The review panel in accordance of sub-section (1), shall examine the report, by taking advice, suggestions and comments from experts of external agencies, if necessary.

(3) After preparing the draft environmental impact assessment report, the proponent shall make available the report for public reaction, comment and review.

(4) Experts from the Ministry of Forests and Soil Conservation shall be included in the panel of experts for reviewing the final environmental impact assessment report of development proposals put forward by other sectors that may have significant impact on the forest areas.

21. Arrangements for Monitoring and Evaluation: (1) Following the implementation of the proposal of the forestry sector, monitoring and evaluation shall be done. The main aspects of monitoring and evaluation parameters for activities of other sectors having significance on the forest areas shall be determined and made available for inclusion in the monitoring system of other sectors.

(2) While beginning the environmental impact assessment process a monitoring system shall be developed with due consideration on the following aspects:

- (a) the parameters to be monitored;
- (b) the major issues to be addressed by the monitoring process;
- (c) the framework design of the monitoring programme; and
- (d) the time and cost implication of monitoring.

(3) As careful and effective monitoring policy strategies will assist

planners to see accurate predictions made actually are, and over time, will lead to better designs and enhanced planning and decisions, monitoring shall be carried out before, during, and after the implementation stages of the proposal.

(4) Monitoring indicators of potential impact should be identified during the design stage of the proposal. They should be specified in the proposal and environmental monitoring indicators should be incorporated in a systematic monitoring proposal.

(5) Responsibility for environmental impact monitoring and evaluation shall remain with the Monitoring and Evaluation Division of the Ministry of Forests and Soil Conservation and the department concerned.

(6) Monitoring data should be periodically evaluated to identify the possible solutions to specific problems and the environmental impact assessment report shall outline the main purposes and the aspects (parameters) for future evaluation.

Chapter VIII

Environmental Impact Assessment Required for Proposal Not Started From Forestry Sector But Affects On Forest Areas

- 22. Proposals Affecting the Forest Areas:** (1) Environmental impact assessment of proposals of other sectors that directly or indirectly affect the forestry sector shall be conducted prior to their implementation of the proposal. Proposals requiring EIAs area as follows: hydro-dams which flood forest land, transmission corridors which cause removal of forest cover, roads and mining/quarrying activities which leads to soil erosion, tourism and trekking which may increase fuelwood demand and lead to additional deforestation and loss of wildlife habitats.
- 23. Proposals to be Implemented by Other Sectors Which Affect Forests and Forest Resources:** (1) In order to ensure conservation of forests and forest resources, other agencies, besides the Ministry of Forests and Soil Conservation, carrying out environmental impact assessment shall consider the following items:
- (a) forest areas and the forest resources or its quantity, condition or status to be affected, and relevance of the proposal to the sectoral goals of the Ministry of Forests and Soil Conservation;
 - (b) the nature of the impacts resulting from the proposal as they relate to forestry and forest degradation, including a detailed listing of expected impacts, their significance, and a detailed description of mitigation measures; and
 - (c) the justification of such a proposal and its rationale for affecting forests and forest resources, and a justification (appropri-

ateness of) for adopting alternative proposals to minimise adverse impacts.

(2) The environmental impact assessment report of other sectoral development proposal if they affect the forest area and forest resources, in accordance with sub-section (1), shall automatically be referred to the Ministry of Forests and Soil Conservation for review and comments.

(3) The Ministry shall retain the right to request for design modifications, process changes, and additional studies if deemed necessary for the conservation, management and sustainable use of forests and forest resources by providing sound reasons for suggesting modifications and/or withdrawal of the proposal for the proposal received in accordance with sub-section (2).

(4) The indicative list of potential adverse impacts of the proposals to be implemented by other ministries and organisation, except the Ministry of Forests and Soil Conservation, on forest areas is given in Schedule V.

Chapter IX

Miscellaneous

- 24. National Environmental Impact Assessment Guidelines, 1993 to be Followed:** The National Environmental Impact Assessment Guidelines, 1993 shall be followed in dealing with issues not mentioned in these guidelines, and in case they are contradictory with the National Environmental Impact Assessment Guidelines, 1993, the National Environmental Impact Assessment Guidelines, 1993 shall be enforced.
- 25. Format of the Environmental Impact Assessment Report:** For the use of these guidelines, environmental impact assessment report format shall be as Schedule V of the National Environmental Impact Assessment Guidelines, 1993.
- 26. Changes or Alterations in Schedules:** (1) The Ministry of Forests and Soil Conservation shall change or alter the schedules as deemed necessary by notification in the Nepal Gazette.

Schedule - I
[Relating to Sub-section (3) of Section 9]

**Proposals Not Requiring
Initial Environmental Examination and
Environmental Impact Assessment**

1. Proposal related to nursery establishment and operation.
2. Proposal related to natural forest regeneration programme.
3. Proposal related to trial plantation (both indigenous and exotic species) in a small area (not exceeding 50 hectares).
4. Proposal related to monoculture plantation of indigenous species not exceeding 150 hectares in terai and not exceeding 50 hectares in hills in a single patch.
5. Seedlings distribution.
6. Proposal related to mixed plantation of local (indigenous) species.
7. Proposal related to forest demarcation work in any area and fire line development not exceeding 20 km and forest road construction not exceeding 5 km in hills.
8. Proposal related to all soil conservation works of general nature that do not change land uses.
9. Proposal related to annual construction and maintenance work in existing botanical gardens and National Parks, Reserves and Conservation Areas.
10. Proposal related to the development (establishment) of new botanical garden and zoos in forest areas.
11. Proposal related to farming of medicinal herbs and aromatic plants in forests and plantation areas.
12. Proposal related to the development herbal farm.
13. Proposal related to the processing of herbs and aromatic plants at local level.
14. Proposal related to the development of industries not requiring process technology and without clear felling (forests), and promotes forest-based industries such as: lokta, furniture, bobbin, parqueting, saw mill with annual capacity of less than 10,000 cu ft/yr.
15. Activity related to the handover of community forestry and preparation of forest working plan.

Schedule - II
[Relating to Sub-section (4) of Section 9]

**Proposals Requiring
Initial Environmental Examination Report**

1. Proposals related to monoculture plantation of indigenous species exceeding 150 hectares in terai and exceeding 50 hectares in hills in a single plot.
2. Proposals related to plantation of tested exotic species exceeding 50 hectares in terai and 25 hectares in hills in a single plot.
3. Activities related to digging out tree roots, leaf collection (by making the tree bare), bark collection and sal seed collection.
4. Proposals related to leasehold forests with a single lease exceeding 150 hectares in terai and 50 hectares in hills.
5. Proposals related to the formulation of soil conservation and watershed management plan with substantial land use changes.
6. Soil conservation proposals exceeding 5 hectares of sediment trap or catchment pond.
7. Proposals related to the formulation of watershed management plan of a protected watershed or national priority area.
8. Proposals related to the establishment of a new botanical garden and zoo outside forest estate in public and private land.
9. Proposals related to the expansion of existing conservation area in forest estate.
10. Proposals related to the establishment of a new National Park.
11. Proposals related to the translocation of different types of exotic animal (wildlife).
12. Proposals related to clear felling of forest area not exceeding 5 hectares.
13. Proposals related to the establishment of a new wildlife reserve and conservation area,
14. Proposals related to tourism promotion in National Parks and other such conservation areas (including buffer zone area).
15. Proposals related to translocation of wildlife in new area.
16. Proposals related to the establishment of new herbal centre inside shrub land in public forests exclusively for commercial production of medicinal and aromatic plants.
17. Proposals related to industrial processing or commercial collection of medicinal and aromatic plants which follows prescribed collection methods or do not discharge hazardous pollutants.
18. Proposals related to small industries requiring no or limited process technology and business collection of non-wood forest products such as non-wood based pulp and paper, and collection of orchids, lichens, allo,

tannin, medicinal plants and saw mills with annual capacity of 10,000 to 100,000 cubic feet of wood.

19. Proposals related to the construction of hill forest road exceeding 5 km and fire line exceeding 20 km.
20. Proposals related to the operation of a stone quarry, a coal mine and sand collection and other mineral products in forest areas.

Schedule - III
(Relating to Section 10)

**Proposal Requiring
Environmental Impact Assessment**

1. Proposals related to the preparation of forest management plans.
2. Proposals related to monoculture plantation of indigenous species exceeding 250 hectares in Terai and exceeding 100 hectares in hills in a single plot.
3. Proposals related to pure plantation of tested exotic species exceeding 100 hectares in terai and 50 hectares in hills in a single plot.
4. Proposals related to leasing of forests exceeding 250 hectares in terai and exceeding 100 hectares in hills as a single plot.
5. Proposals related to the construction of new tourist resort hotel and safari, education institutions, hospitals and industrial establishments or other construction works in all types of forests and protected areas.
6. Proposals related to the establishment of new herbal center for commercial production in public forests with clear felling.
7. Development proposals to be implemented in national parks, wildlife reserves and conservation areas.
8. Proposals related to clear felling of forests exceeding 5 hectares area.
9. Proposals related to the establishment of medium and large scale forest-based industries using process technology such as rosin and turpentine, rubber, plywood and veneer, catechu and wood-based matches, pulp and paper, high firewood consuming industries such as cardamom and tea within 1 km radius from forest areas.
10. Commercial or industrial processing of medicinal and aromatic plants which may discharge toxic and/or hazardous pollutants.
11. Proposals related to the establishment of saw mill, brick, tile and tobacco industries within 5 km radius from the nearest forests.
12. Proposals related to the establishment of saw mill with annual capacity exceeding 100,000 cu ft/yr.

Note: Threshold criteria may be redefined in future. In some cases, it may be necessary to develop new criteria for the same threshold.

Small, medium and large scale industries shall be based on the classification of *Industrial Enterprises Act, 1992 (2049)*.

Schedule - IV
(Relating to Sub-section (1) of Section 15)

Format of Terms of Reference

1. Introduction

- (a) Purpose of terms of reference.
- (b) Agency or individual responsible for preparing the environmental impact assessment report.

2. Environmental Impact Assessment Guidelines

General guidelines to be followed should be provided, together with procedures to be used in preparing the environmental impact assessment report.

3. Background Information

- (a) General background information about the study proposal and indication of relevant reports should be described.
- (b) Particulars related to background study, and reports of the proposal and location should be listed or described.
- (c) Proposal related policy, legislation and rules should be mentioned.
- (d) Relevance of the proposal to local level planning should be discussed.

4. Specific Environmental Impact Assessment Guidelines

- (a) The environmental components which need detailed or further study should be listed. The indicators of each listed component to be measured or assessed might be specified including seasonal variability.
- (b) Action required to minimise possible adverse impact such as relocation, increased taxes, compensation should be mentioned.
- (c) Cost-benefit analysis of proposal in terms of its environmental implications.
- (d) Environmental impact assessment reports should propose a monitoring programme for assessing the actual impacts during proposal's operation and beyond.
- (e) The following tasks should be mentioned in the environmental impact assessment study proposal:
 - (i) each specific task to be done should be sufficiently described;
 - (ii) proposed work plan for environmental impact assessment should be mentioned;

- (iii) periodic reviews of the work should be done; and
 - (iv) expertise and specialists of the study team for the proposed proposal should be described.
- (f) Conclusion should be made about whether the proposal should be implemented or whether it poses an unacceptable risk.

5. Time Constraints

- (a) The time required for completing the environmental impact assessment should be specified (for example 3 to 12 months),
- (b) The list of tasks under the environmental impact assessment with proposed dates for completion should be mentioned.

6. Budget

The estimated budget allocation for the environmental impact assessment study and report should be mentioned.

7. Environmental Impact Assessment Report Format

The format of the environmental impact assessment report for forestry sector shall be in line with the national environmental impact assessment and aspects of public participation must be included in it.

8. Other Relevant Information

9. List of References

10. Annexes, maps, photos, figures, tables, questionnaires, checklists etc.

Approving Officer:

Name :

Designation :

Signature :

Date :

Schedule - V
(Relating to Sub-Section (4) of Section 23)

An Indicative List of Potential Adverse Impacts of Other Sectoral Activities in the Forestry Sector

S.N.	SECTOR	POTENTIAL ADVERSE IMPACTS
1.	Water Resource <ul style="list-style-type: none">• Hydro Power• Dams• Reservoirs• Transmission-lines	Inundation, waterlogging, soil erosion, deforestation, habitat change, loss of bio-diversity, salination, floods, depletion of wildlife and aquatic population, change in water table, etc.
2.	Transport and Communication <ul style="list-style-type: none">• Roads• Airports• Ropeway Lines• Cable Lines/Transmission Stations/Towers	Localised waterlogging, encroachment, deforestation, accelerated soil erosion, watershed degradation, threat to wildlife population, poaching of wild animals and forest products, etc.
3.	Industry <ul style="list-style-type: none">• Manufacturing• Processing• Mining and Quarry	Depletion of forest resources, deforestation, soil erosion, pollution of water and soil, habitat destruction, aesthetic nuisance, threat to wildlife, etc.
4.	Tourism <ul style="list-style-type: none">• Trekking and Mountaineering• Camping in Protected Areas• Tourism Promotion in Protected Areas	Deforestation, accumulation of solid waste, soil erosion, loss of habitat and wildlife, interference in natural ecological process, threat to endangered flora and fauna, etc.
5.	Energy	Deforestation, loss of habitat and bio-diversity, soil erosion, encroachment, depletion of forest, etc.
6.	Agriculture <ul style="list-style-type: none">• Crops• Livestock• Fishery• Agro based Industries	Soil erosion, destruction of habitat, vulnerability to new pests and diseases, soil and water pollution due to pesticide and chemical fertiliser, etc.
7.	Others <ul style="list-style-type: none">• Urban Development• Rural Development	Deforestation, soil erosion, loss of habitat, threat to rare flora and fauna, encroachment, etc.

By order,

Shree Ram Paudel
Acting Secretary, HMG

Glossary

- Adverse/Beneficial Impacts** Adverse impacts are harmful to human interests over either the short or long term. Beneficial impacts improve the economy or quality of life of a population and improve resources.
- Auditing** An activity to check on past and current environmental performance.
- Baseline Studies** Work done to collect and interpret information on the status/trends of the environment likely to be affected by a development action.
- Compensation** A form of mitigation which involves action such as financial payment to people affected by a development action; or the protection/creation of a habitat or similar feature which is similar to the one to be adversely affected.
- Cost-Benefit Analysis** Technique used in comparing the ratio of costs to benefits for a development activity. Comparison is made through conversion of costs/benefits to monetary units, e.g. the US dollar. It has not yet been successfully used to incorporate all environmental, social and health impacts of concern.
- Development Actions** Often used to refer to the range of individual tasks to be performed during the construction and operation of a facility. Examples of such tasks are: vegetation removal, construction of fences, construction of access road, transport of raw material, etc. Each of these specific tasks can cause environmental impacts.
- Development Proposal** Consists of a wide range of human activities which involve a transformation of the natural biophysical environment to increase the goods and services available to society.

Draft Environmental Statement	A draft statement is produced and circulated to relevant government agencies and made publicly available. A period of time is allocated for comments to be made, and the Final Environmental Statement must contain a section which lists all comments received, accompanied by responses from those responsible for preparing the document.
Environmental Impact Assessment (EIA)	A process that includes studying and evaluating the potential environmental consequences of proposed development project (s) by identifying beneficial and adverse impacts and recommends mitigating measures.
Environmental Impact Statement/Reports (EIS)	Document presenting the results of an EIA to decision-makers and, in some cases, to the public.
Initial Environmental Evaluation (IEE)	Preliminary analysis undertaken to ascertain whether there are likely significant adverse impacts to warrant a "full" EIA.
Mitigation	An action which may prevent or minimise an adverse impact, or enhance a beneficial impact.
Monitoring	Systematic measurement/observation of environmental/social health variables in time and space.
Production Forest	An accessible forest with 8 cu ft biomass/annum if managed properly.
Proponent	Organisation (private or public sector) or individual intending to implement a development proposal.
Reversible/Irreversible Impacts	An impact is irreversible when the pre-development situation cannot be recreated. If after a period of time the pre-development

situation can be recreated (either through natural processes or with human assistance), then the impact is considered reversible.

Risk Analysis

Technique used to determine the possibility of hazardous events occurring (such as release of a certain quantity of a toxic gas) and the likely consequences. This technique was developed for use in the nuclear and chemical industry where certain possible events, of low probability, could have extremely serious results. Attempts are being made to use concepts from probable risk analysis to characterize environmental impacts, the occurrence and nature of which are not easy to predict with any degree of accuracy.

Scoping

Activity to identify significant likely impacts to be investigated in EIA work. Usually involves the public.

Screening

Activity undertaken to decide if an EIA Statement/Report is required for a specific development action. Screening is undertaken before EIA work begins.

Terms of Reference

A document specifying the requirements of the EIA implementation, consultations to be held, data to be produced and form/content of the EIA Statement/Report. Often produced as an output of the scoping exercise.

Annex

Workshop Participants of the EIA for Forestry Sector (August 1992)

Environmental Core Group Members

Mr. Babu Ram Yadav	Department of National Parks & Wildlife Conservation
Mr. Batu Krishna Uprety	Ministry of Forests & Soil Conservation
Mr. Damodar Prasad Joshi	Department of Botany
Mr. Dhruva Bahadur Thapa	Department of Agriculture Development
Mr. Keshar Man Sthapit	Department of Soil Conservation
Mr. Keshav Kaji Shrestha	Department of Forests
Mr. Kiran Joshi	Department of Roads
Mr. Krishna Murari Neupane	National Planning Commission Secretariat
Mr. Kumud Shrestha	Ministry of Forest & Soil Conservation
Mr. Manohar Lal Shrestha	Department of Forests
Mr. Mukesh Bhattarai	Ministry of Industry
Mr. Nil Prasad Regmi	Ministry of Forests & Soil Conservation
Mr. P. M. Shrestha	Water and Energy Commission Secretariat
Mr. P. P. Gorkhali	Department of Mines & Geology
Mr. Prem Lal Chitrakar	Department of Agriculture Development
Mr. Prushottam Kunwar	National Planning Commission Secretariat
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Mr. Sushil Bhattarai	Chief, Publicity Division, Ministry of Forests and Soil Conservation
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Mr. Uttam Sagar Shrestha	Research Assistant
Ms. Nabina Shrestha	Research Assistant
Ms. Suberna Moktan	Secretary