Mountain Farming Systems

ICIMOD

MFS Case Study
Series No. 00/2

Land Policies, Land Management and Land Degradation in the Hindu Kush-Himalayas

Nepal Study Report

Socioeconomic and Ethno-Political Research
and Training Consultancy (P) Ltd. (SEEPORT)

International Centre for Integrated
Mountain Development
Kathmandu, Nepal
2000

ICIMOD

ICIMOD is the first international centre in the field of mountain development. Founded out of widespread recognition of environmental degradation of mountain habitats and the increasing poverty of mountain communities, ICIMOD is concerned with the search for more effective development responses to promote the sustained well being of mountain people.

The Centre was established in 1983 and commenced professional activities in 1984. Though international in its concerns, ICIMOD focusses on the specific, complex, and practical problems of the Hindu Kush-Himalayan Region which covers all or part of eight Sovereign States.

ICIMOD serves as a multidisciplinary documentation centre on integrated mountain development; a focal point for the mobilisation, conduct, and coordination of applied and problem-solving research activities; a focal point for training on integrated mountain development, with special emphasis on the assessment of training needs and the development of relevant training materials based directly on field case studies; and a consultative centre providing expert services on mountain development and resource management.

Mountain Farming Systems' Division

Mountain Farming Systems constitutes one of the thematic research and development programmes at ICIMOD. The medium-term objectives of the programme include i) Appropriate Technology for Sustainable Mountain Agriculture; ii) Institutional Strengthening for Mountain Agriculture; iii) Integration of Gender Concerns into the Development of Sustainable Mountain Agriculture; iv) Agricultural Research Networking; and v) Better Understanding of Sustainability Dimensions.

Land Policies, Land Management and Land Degradation in the Hindu Kush-Himalayas

Nepal Study Report

Socioeconomic and Ethno-Political Research and Training Consultancy (P) Ltd. (SEEPORT)

International Centre for Integrated Mountain Development (ICIMOD)
Kathmandu, Nepal
2000

ISSN *1561 - 8676*

Published by
International Centre for Integrated Mountain Development
G.P.O. Box 3226,
Kathmandu, Nepal

Layout by
Sushil Man Joshi

Typesetting at
ICIMOD Publications' Unit

Preface

The Mountain Farming Systems' Division of ICIMOD, with support from the Global Mountain Programme, initiated a comparative study on the effect of land policies on land management and degradation in six regional countries; Bangladesh, Bhutan, China, India, Nepal, and Pakistan; sharing the Hindu Kush-Himalayan mountain range. One study was commissioned in each country. The exception to this was India where two studies, one in the Northwest and one in the Northeast, were conducted to capture the diversity and size of the Indian Himalayas. Each of the country studies was carried out by a team of experts from biological as well as socioeconomic disciplines.

The study was based on a concept paper developed by Professor Piers Blaikie in association with ICIMOD staff. The Team Leaders of the country studies came to ICIMOD in May 1997 to discuss the concept paper and agree on the methodology and operational aspects of the project. Each of the studies was to investigate four sectoral policies, e.g., Agriculture, Forestry, Wildlife and National Parks, and Tenure and Property Rights. Additionally, each study looked at the national and or provincial environmental policy and its implementation. The idea was to investigate thoroughly all the sectoral policies and their impact on land management. Each of the studies also chose one particular issue of interest for the country or area that had a significant impact on land management. The study period was between June-October 1997 and final reports were presented in a workshop at ICIMOD in early November. Subsequently, the reports were revised for publication.

We believe that, by publishing these studies, ICIMOD will facilitate an important contribution for a wider audience, in the Hindu Kush-Himalayan region and beyond, who would benefit from the detailed information and analysis of this very important topic.

ICIMOD would like to acknowledge the contribution of Professor Piers M. Blaikie, of the University of East Anglia, U.K., in the design and implementation of this study. From within the Centre, Professor Blaikie was assisted by Dr. Syed Zahir Sadeque, Social Scientist, ICIMOD, and Dr.Tej Partap, Head, Mountain Farming Systems and Coordinator of the Global Mountain Programme at ICIMOD. In addition, a multidisciplinary advisory team of ICIMOD professionals, namely, Dr M.Banskota, Dr N.S.Jodha, and Dr T.S.Papola, provided valuable inputs during the study.

Tej Partap

Syed Zahir Sadeque

Acknowledgements

The Nepal country study team and SEEPORT Consultancy (P) Ltd. wish to express their gratitude to the International Centre for Integrated Mountain Development (ICIMOD) for providing the opportunity to carry out this study. We would especially like to appreciate the support received from Dr. Z. Sadeque, Study Coordinator, and professional guidance provided by Prof. Piers Blaikie. The team benefitted immensely from the substantive comments and suggestions made by them both on the earlier draft of this report. We acknowledge the helpful comments received at the Workshops held in May and November 1998 from ICIMOD staff and team members from other countries of the region.

We appreciate greatly the excellent cooperation received from Mr. P. Regmi, Soil Conservation Officer, Kaski District, and his staff during field visits. The local communities and VDC officials from the villages visited by the team were equally helpful, and they deserve our heartfelt thanks.

Abstract

This is a study about government land policies and their impact on land utilisation and management and on land degradation. Land policies in Nepal were, in general, found to have a negative impact on the majority of the population and cause land degradation. It is a mutually reinforcing process in which degradation has aggravated poverty and poverty has further exacerbated degradation. A review is first made of the overall national framework for guiding development efforts with due regard given to sustainability and maintenance of the environment. The various perspectives on land degradation are discussed and five key areas of concern selected for this study (agriculture, property and entitlement, forestry, national parks and wildlife, and decentralization are analysed). Performance in the country's leading economic sector, agriculture, is found to be unsatisfactory, while achievements in forestry and protected area management are mixed. Land ownership and tenure entitlements are unfavourable from both equity and efficiency perspectives. Finally, while there has been considerable rhetoric regarding participatory and bottom-up processes of resource management and decision-making, empowerment of local bodies through decentralization remains inadequate.

Acronyms

ADB	Agricultural Development Bank
AIDAB	Australian International Development Assistance Bureau
APP	Agricultural Perspective Plan
APROSC	Agricultural Projects Services Centre
AsDB	Asian Development Bank
CDO	Chief District Officer
CIDA	Canadian International Development Association
CPFD	Community and Private Forest Division
CFDP	Community Forestry Development Project
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CFUG	Community Forest User Group
DDC	District Development Committee
DFID	Department for International Development
DFO	District Forest Officer
DFO	District Forest Office
DLS	Department of Livestock
DNPWC	Department of National Park and Wildlife Conservation
DOA	Department of Agriculture
DOB, TU	Department of Botany, Tribhuvan University
DOF	Department of Forests
DOT	Department of Tourism
DSC	Department of Soil Conservation
DSP	Decentralization Support Programme
DRCFDP	Dolakha Ramechhap Community Forestry Development Project
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organization
FINNIDA	Finnish International Development Agency
FORESC	Forest Research Survey Centre
FRISP	Forest Resource Information System Project
FUGs	Forest User Groups
GDP	Gross Domestic Product
GTZ	Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)
GEF	Global Environmental Facility
HMGN	His Majesty's Government/ Nepal

ICIMOD	International Centre for Integrated Mountain Development
IDA	International Development Agency
IFAD	International Fund for Agricultural Development
IHDP	Integrated Hill Development Project
IOF	Institute of Forestry
IRDP	Integrated Rural Development Project
IUCN	International Union for Conservation of Nature and Natural Resources
JT	Junior Technician
JTAs	Junior Technical Assistants
KHARDEP	Koshi Hill Area Rural Development Project
KMTNC	King Mahendra Trust for Nature Conservation
KTWR	Koshi Tappu Wildlife Reserve
LAC	Lumle Agricultural Centre
LDO	Local Development Officer
LGP	Local Governance Programme
LRMP	Land Resource Mapping Project
MAB	Man and Biosphere Programme, UNESCO
MFS	Mountain Farming Systems' Programme
MFSC	Ministry of Forest and Soil Conservation
MOA	Ministry of Agriculture
MPFS	Master Plan for the Forestry Sector
MPFSP	Master Plan for the Forestry Sector Project
MTCA	Ministry of Transport and Civil Aviation
MOWR	Ministry of Water Resources
NACFP	Nepal Australia Community Forestry Project
NARC	Nepal Agricultural Research Council
NPC	National Planning Commission
NUKCFP	Nepal UK Community Forestry Development Project
NEPAP	Nepal Environmental Policy and Action Plan
NGO	Non-Governmental Organization
NEA	Nepal Electricity Authority
NA	Not Applicable
NMCP	Northern Mountains Conservation Project
OP	Operational Plan
PDDP	Participatory District Development Programme
PDLT	*Panchayat* Development and Land Tax
PF	*Panchayat* Forest
PDO	*Panchayat* Development Officer
PPF	*Panchayat* Protected Forest
PPP	Parks and People Project
PWR	Parsa Wildlife Reserve

RBNP	Royal Bardia National Park
RCNP	Royal Chitwan National Park
RSWR	Royal Shukla Phanta Wildlife Reserve
SDC	Swiss Development Cooporation
SIDA	Swedish International Development Agency
SMSs	Specialised Subject Matter Specialists
T&V	Training and Visits
TCN	The Timber Corporation of Nepal
TU	Tribhuvan University
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UMN	United Mission to Nepal
USAID	United States Agency for International Development
VDC	Village Development Committee
WECS	Water and Energy Commission Secretariat

Contents

Chapter 1
Introduction

1.1 Background

This is a study about government policies that bear on how the country's most valuable natural resource, land, is utilised and managed, how those policies have influenced the various land utilisation and management practices, and how such practices have contributed one way or the other to land degradation and the quality and sustainability of this resource.

It is a part of the series of country studies commissioned by the International Centre for Integrated Mountain Development (ICIMOD) in the Hindu Kush-Himalayas. This study was coordinated by Dr. Zahir Sadeque and technically guided by Prof. Piers Blaikie.

The report is organized as follows. A brief review of the overall national framework for guiding development efforts with due regard for sustainability and maintenance of the environment is carried out in this section. Before embarking on the analysis of the five key areas of concern selected for this study (agriculture, property and entitlement, forestry, national parks and wildlife, and decentralization [wild card]), the various perspectives on the very concept of land policy, land management, and land degradation are presented in the next section. Agriculture is discussed in Section 3, followed by property and tenure. Forests and national parks and wildlife are treated in Sections 5 and 6, respectively. Section 7 deals with decentralization, while the main conclusions of the study from all major areas covered are presented in the last section.

1.2 National Environmental Policy

The Nepal Environmental Policy and Action Plan (NEPAP) was prepared by the government in 1993 by engaging a team of specialists and with support from the World Bank. This document analyses the country's environmental issues in a multi-sectoral framework and sets forth a strategy for maintaining the country's natural environment and the health and safety of its population and its cultural heritage as

economic development occurs (EPC 1993, v). Below is a summary of HMGN's environmental policy, and sectoral policies related to agricultural land, forest, and rangelands and biodiversity conservation.

There are five main aims of HMGN's environmental policy (EPC 1993):

- to manage efficiently and sustainably natural and physical resources;
- to balance development efforts and environmental conservation for sustainable fulfillment of the basic needs of the people;
- to safeguard the national heritage;
- to mitigate the adverse environmental impacts of development projects and human action; and
- to integrate environment and development through appropriate institutions, adequate legislation and economic incentives, and sufficient public resources.

It appears that Nepal's environmental policy incorporates the objective of reversing the land degradation problem, while being aware of the social and economic imperatives to meet the people's basic needs. Land degradation however is a difficult issue to conceptualise and much more so to prove its causes, magnitude, and consequences for various actors. Factors that play a key role in affecting land degradation are more difficult to understand than had conventionally been believed in the past. Before going into the details of Nepal's land policies and their impacts on land degradation, the next section provides an intellectual framework for understanding the issue of land degradation from various perspectives.

Chapter 2
Conceptualisation: Understanding Land Degradation

Degradation is not an absolute term, but dependent on use. It is rather a perceptual term with multiple users, and it is open to multiple interpretations (Blaikie and Brookfield 1987). There are about seventy definitions currently in use, which is confusing for everyone (Jones 1995). This has therefore been the subject of research throughout the world (FAO 1991).

Many argue that scientific analysis alone cannot be expected to present a consistent picture of the extent of land degradation. Lal *et al.* (1989), for example, argue that there is no reliable database or precise criteria for assessing land degradation. Similarly, Carpenter (1989) revealed that there is a lack of statistical reliability pervading the studies of field measurements such as soil erosion rates, nutrient transport, and productivity of vegetation. Therefore, rather than exclusively concentrating on presenting more scientific data, which also have only partial views of our world, it is useful that views on the construction of the problem of land degradation by various actors, such as local people, policy-makers, resource managers, and researchers, are noted.

Nepal has become a paradigmatic experimental ground for forest and land degradation. A number of different studies have also been conducted (see, for example, Eckholm 1975, 1976; McFarlane 1976; Banskota 1979; Wallace 1981, 1988; Bajracharya 1983; Thomson *et al.* 1986; Blaikie 1985, 1988; Mahat *et al.* 1986a, 1986b, 1987a, 1987b; Ives and Messerli 1989; World Bank 1992; Metz 1991; Soussan *et al.* 1995). The findings of these studies show considerable variations in both the extent and severity of the problems that have been subject to much different interpretations. Common to all are factors such as population, poverty, and property regimes, which are often blamed for degradation, but their links with land degradation are difficult to conceptualise, measure, and prove. Natural geomorphic and historical factors as well as inappropriate government forest policies have now been found to play a much more important role in affecting apparent forest

degradation than had been believed previously. Specifically, land degradation is understood and interpreted in different ways by various actors such as land users, foresters, social scientists, policy-makers, and donors. Although at any one time numerous definitions and meanings exist simultaneously, they have never been brought together and documented properly.

2.1 Questioning the Conventional Wisdom

The widely held views of natural science literature on land degradation are based on a positivist assumption of a single, objectively measurable reality and value neutrality, although some variables are inherently immeasurable (Mearns 1991). In fact, how scientists measure the world depends on what the scientific community considers important and real (Pretty 1994). Three types of difficulties are identified in scientific measurement; first, the inaccuracies of data, due to inadequate measurement techniques; secondly, the sampling, extrapolation, and interpretation of data; and thirdly, the inherently indeterminate nature of some phenomena (Jones 1995). Therefore, in recent years positivist assumptions of a single, objectively measurable reality of science are called into question, and, in the development field, a new paradigm is emerging which focusses less on rigorous science and more on local meanings. This draws the attention of researchers to take an account of pluralist assertions of multiple realities so that the views of local people will also be sought.

In soil erosion research, slope gradient and slope length were considered as the most important causes of erosion, and structural measures in the form of terraces were frequently imposed to reduce runoff. These ideas have been exported from the USA to various soil conservation projects in Nepal, but it has recently been realised that villagers' indigenous agronomic methods that maintain good protective vegetation cover are much more effective than structural methods (e.g., terracing, retaining walls, and check dams). In addition, Ives and Messerli (1989) explain that farmers in Nepal have been blamed for poorly constructed outwardly sloping terraces. Yet they are outwardly sloping to increase drainage which reduces landslides (as the weight of the water increases the risk of slippage), and they are only poorly maintained during the heavy monsoon, presumably due to labour shortages (Blaikie 1989).

Similarly, Benkhe and Scoones (1993) reveal the limited appropriateness and validity of the conventional range management theory of communal rangelands. They noted that the prominent management problem has been concerned with controlling degradation through controlling livestock numbers. Based on the concept of carrying capacity, rangelands were judged to be overstocked and/or inefficiently used. However, physical scientists failed to appreciate the principles upon which pastoralists operate. They are opportunistic, adapting to instability by utilising high but fluctuating stocking rates and migratory patterns of foliage exploitation. These aforementioned examples show that the conventional 'scientific' views of land degradation are incomplete and highlight the importance of understanding plural meanings and definitions of degradation.

2.2 Causes of Degradation

Research on land degradation has often concentrated on identification and quantification of external causal variables without adequate attention being given to specific links between factors and land degradation. Barrow (1991) presents nine categories of factors causing degradation

which include political instability, marginalisation, and economic factors. They are just like a shopping list of causes. Similarly, Tolba *et al.* (1992) note that land degradation is the result of complex interactions between physical, chemical, biological, and socioeconomic and political issues of a local, national, and global nature. They argue that any framework or model to explain degradation, therefore, should be able to cope with these webs of interaction and mutually affecting processes. Almost all studies related to land degradation show that external forces are the key factors. However, they are difficult to measure and prove. Therefore, causes of land degradation are interpreted by various actors in different ways. Long (1992) argues that interpretations of the nature of land degradation are not only socially constructed, but different cultural lenses exist through which 'facts' about the causes of environmental change are interpreted. These are often associated with different groups of people; the classic view, for example, has been held primarily by colonial administrators, the neo-liberal view by free-market economists, and the populist view by grass roots' NGOs and social activists (see Table 2.1). They all view environmental problems in different ways.

The approaches presented in Table 2.1 above are various lenses to see a picture of the *causes of environmental problems* and these approaches are important in order to understand the development of environment paradigms. They serve, in this study, to illustrate the variability and diversity of perspectives on the *causes of land degradation* (see Table 2.2). Malthus, for example, did not explicitly discuss the relationship between population density and environmental degradation, but perspectives that assume a carrying capacity or ceiling to production have been labelled as neo-Malthusian, and they name pressure of population as the main cause of land degradation. The 'classic' perspective identifies land degradation as an environmental problem, blaming ignorant farmers who are unaware of the effects of their actions and/or without sufficient technical knowledge to solve their problems, thus focusing on lack of knowledge and perception of a problem. The populist philosophy attributes the cause as a lack of access to resources and poverty. It assumes that people have both sufficient knowledge and incentive to prevent land degradation if they are able to, recognising the need to understand the constraints that cause land-use practices that lead to degradation. The economic/ neo-classical perspective attributes price and property regimes providing inappropriate incentives as the cause of environmental problems. An actor-oriented approach is grounded in the everyday lives of men and women, be they poor peasants, entrepreneurs, government bureaucrats, or researchers. An exploration of lifeworlds is central to the actor-oriented approach.

These perspectives illustrate the range of ways that 'facts' about the causes of degradation may be interpreted. It is not possible to prove which of these perspectives is correct in any given situation, and thus competing knowledge claims may exist simultaneously.

Various development approaches and perspectives on the causes of degradation discussed earlier have permeated Nepal's forestry and agricultural sector at various points in time. They have had a direct effect on the formulation of land policies, land management, and property rights' arrangements in Nepal. It appears that there is a contradictory mixture of classical, populist, and neo-liberal styles within both agriculture and forestry-related policies.

The 'classic' model, for example, is dominant in the agricultural sector where the promotion of the new seed-fertilizer technology is emphasised. It remained

Table 2.1: **Classic, Populist and Neo-Liberal View to Environmental Problems**

Variable	Classical	Populist	Neo-liberal
Peasant behaviour	ignorant, irrational, traditional	virtuous, rational community-minded	rational, egocentric
Diagnosis of environmental problem	environmental solutions	socio-political solutions	economic solutions
Immediate causes of environmental problems	mis-management by users	mis-management by state, capitalists, big businesses	poor government policies and bureaucratic rules and regulations
Structural causes of degradation	over-population, backwardness, ignorance	resource distribution, inappropriate technologies	inappropriate property rights, institutions, prices, and rapid population growth
Institutional prescription	top-down centralized decision-making	bottom-up participation	*market* policies, property rights, resource pricing, self-targetting safety nets
Academic discipline; profession	science; bureaucratic	sociology; activist, NGOs	economics; development professional
Gender orientation	gender blind	virtuous but victimised women	gender myopia
Research framework	systematic empiricism	rapid rural appraisal, community as unit of analysis	methodological individualism
Orientation to market	not considered	exploitation	Pareto optimality and externalities
Models of peasant society	conservative, paternalistic	egalitarian	democratic/liberal
Views of collective action	deficient	essential and unproblematic	conditional rationality/ political entrepreneurs
Technology	soil conservation works	agronomic techniques of conservation	not specified

Source: Biot, *et al.* (1995).

dominant in the forestry sector at various stages of forestry administration. This is evident from the fact that land users were blamed for causing degradation, a typical paternalist/technocratic view. Consequently, during the 1950s and 1960s, the Nepali government relied excessively on the assumption that nationalisation of forest land and the tightening of legal top-down control over the resource by a centralized government bureaucracy would lead to the effective management of forests. During the 1970s, the issue of forest and land degradation in Nepal was highlighted, the World Bank (1980) document, for example, warned that if the present rate of deforestation continues, all accessible forests in the hills of Nepal would disappear in 15 years, and the Nepalese hill farmers were blamed for forest degradation (Eckholm 1976; Wallace 1981). Technical solutions were sought, several afforestation projects and engineering measures of soil conservation were designed from this type of diagnosis to overcome the so-called forestry problem. A typical technocratic

Table 2.2: **Various Perspectives on the Causes of Land Degradation**	
Perspectives	Assumptions about the Causes of Land Degradation
Neo-Malthusian	This perspective views that demographic pressure causing overcultivation and overgrazing leads to degradation as resources are mined to support growing populations. The literature supporting this line of argument includes, for example, Ho (1985), Lele and Stone (1989), Okafor (1991), and Myers (1992).
Classic/Paternalist/ Technocratic	The land users are blamed for causing land degradation. This perspective views land users as irrational and inefficient (environmentally unaware, ignorant, apathetic or lazy) and considers that users mismanage the land, which leads to degradation. This view is associated with colonialism (see for example, Jacks and Whyte 1939).
Populist	This perspective does not provide a theory of degradation as such. However, the populist perspective runs directly counter to the classic perspective in its defence of indigenous capability. The populist perspective has similar lines of argument as the Neo-Marxist[1] and Faustian[2] perspectives.
Economic/Neo-classical	Environmental degradation is caused by inappropriate or excessive government intervention (i.e., market or policy failure—which includes price distortions from subsidies, quotas, misvalued exchange rates, inappropriate interest rate policies, and so on) and inability to properly value the resource and imperfect information regarding the resource (see World Bank 1992).
Actor-oriented	This perspective views that differences in knowledge, perceptions, motivations, and constraints across gender, class, ethnicity, age, and religion need to be explored for a fuller understanding of social mechanisms affecting degradation, as well as differences between cultures (Long 1992). Knowledge is socially and politically constructed and this requires a differentiated analysis that allows an exploration of multiple constructions of rural peoples' knowledge (Scoones and Thompson 1992), in this case in the degradation debate. Environmental knowledge needs to be seen in its dynamic context, since the environment is constantly in a state of being conceived of, learned about, acted upon, created and recreated, and modified (Blaikie 1994). Blaikie and Brookfield (1987) note that ignorance of the consequences of actions on land, the reckless quest for profit, poverty and deprivation leading to desperate ecocide, pressure of population on resources (on which they remain somewhat ambivalent), and population decline (e.g., reduction in household labour) emerge as the underlying causal agents of degradation.

Notes:

1 In the neo-Marxist perspective, deforestation, overcultivation, and overgrazing are seen as symptoms of, or responses to, deeper causes, that stem from the exploitative nature of capitalism. This perspective views that the structure of the international economy is partly responsible for the worsening condition of local environments in many parts of the South (see Redclift 1987).

2 The Faustian perspective holds that inappropriate Western technology and its careless use is a key factor in environmental degradation in the South (see Meyer and Turner 1992). Barrow (1991) adds that not only technology transfer but also the promotion of inappropriate agricultural strategies and trade and aid relationships cause environmental degradation.

Source: Adapted from Jones (1995)

perspective was adopted. For instance, in the initial years of the community forestry programme, more emphasis was given to a large programme of reforestation with browse-resistant species. It was the trees that were paramount and the local people and their organizations were still not considered very important. The programmes were implemented in top-down, prescriptive, and target-driven fashion. These projects were operationalised through the Integrated Rural Development Projects mainly funded by donor agencies such as the USAID, CIDA, and ODA. Although the classic/technocratic approach was predominant up until the mid-1970s, it passed through many stages of struggles, adjustments, and compromises. The underlying theme in these changes was the realisation of a strategy to allow local groups to protect their environments; their livelihood interests.

During the late 1970s, at the international level, the failure of the classic approach to arrest declining agricultural productivity and halt the loss and degradation of forests was acknowledged (FAO 1978). This led to the search for an alternative approach, and soon the populist approach permeated the agriculture and forestry sector policies. The solution was seen in the local people's own understandings and interests, and their control and collective action as a viable alternative for resource management (Chapagain 1984).

Populist elements, such as active participation of local communities in resource management, reorientation, and training of technical staff, building local-level institutions, participatory micro-planning, equitable benefit-sharing, and gender-sensitive programming were proposed in all the major master plans, sector strategy documents, and periodic development plans (see, for example, MPFS, APP, and the Ninth Plan). The NGOs were suddenly given a key role in supplementing the efforts of the public sector and, in many instances, bypassing the latter. This approach is germane to almost all the development programmes implemented with bilateral and multilateral assistance. Thus, during this period there was a shift in approach from the classic to the populist, at least in rhetoric. In reality, however, the classic elements were distinctly in place.

The neo-liberal approach has recently penetrated the policy debate. This approach has its genesis in the loan conditionalities imposed by the World Bank on the national government. It requires that countries strictly implement the 'structural adjustment programme', which, among others, requires a cutting down of the size of the bureaucracy, withdrawal of all kinds of subsidies, and increased dependence on the free market. This approach combines an anti-state position of the populist with the neo-classical economic model. In Nepal's case, for example, this approach dictates removal of subsidies on fertilizer and agricultural equipment and on activities that could potentially lead to overexploitation of environmental resources. The basic flaw in this approach lies in the utter disregard for the survival needs of the vast majority of the rural masses who have not yet made an entry to the market and whose survival depends on the provisions made by the state.

This becomes quite clear from the analysis of successive policy pronouncements that give a semblance of the populist theme on the surface, classical in content, and neo-liberal in practice. Viewed this way, Nepal's contemporary policy mix represents a *hybrid approach* that creates problems for implementation because of its various contradictory elements that are not easy to accommodate. The *hybrid*

approach creates new practical dilemmas about how to integrate top-down and bottom-up organizational approaches on the ground. This also creates the potential for new and unknown political alignments and alliances.

Chapter 3
Agriculture

3.1 The Setting

The agriculture and forestry sectors, which contribute significantly to the day-to-day livelihood of the Nepalese people, constitute the very foundation of Nepal's economy (NPC 1992). Agriculture covers 16.5 per cent of the country's total land area, while the corresponding shares of forests and pastures are 16.5 and 42.4, per cent, respectively (LRMP 1986). The Eighth Five-Year Plan (1992-97) recognised the need to formulate land utilisation policies for the development of pasture, arable land, forests, national parks, settlements, and urban areas (see NPC 1992:641). Similar views are expressed in the current Ninth Plan (NPC 1998).

Agriculture is by far the largest sector in the Nepalese economy, contributing 40.5 per cent to the total GDP (1995/96) (MOF 1998) and 81.2 per cent to the employment of the 'economically active' population (CBS 1994b). About twenty years ago, these proportions were 71.6 per cent in the GDP (1974/75), 94.4 per cent in employment (1971), and 82.5 per cent in export earnings (1974/75).

The real 'top priority to agriculture' in terms of actual financial resource allocation began from the Sixth Plan (Annex 1, Table 1). This was in recognition of the predominant role of the agricultural sector and the potentials it offers for broad-based sustainable development and poverty alleviation. Concurrently, a number of new institutions in the form of government departments, parastatals, schools, colleges, and other educational institutions were created and expanded. Many bilateral and multilateral agencies contributed to this process. A list of agencies and institutions concerned with agriculture, created after 1951, is presented in Annex 2.

The other aspect, that is rarely reflected in the national accounts or the government budget, but which is an important factor affecting development, including agricultural development, land ownership, and management, is the legal instruments. Several laws, rules, and regulations were

promulgated to provide a legal framework in which various institutions and entities were to operate. A list of the existing laws that influence agricultural decisions is presented in Annex 3.

Prior to 1985, when the country started the process of economic liberalisation under the aegis of the World Bank, policy instruments such as laws, rules, and regulations were designed in such a way as to keep the government's control over most of the economic sectors. Many of these instruments, and the entities created therefore, are still active. The aggregate objective of the present policies is to move the management of the economy from a government-guided mixed economy towards a private sector-driven economy.

3.2 Past Efforts

The persistently lagging growth in the agricultural sector has prompted the government, often with donor encouragement, to prepare a number of plans and sector strategy, apart from the routinely formulated five-year periodic plans. These are briefly described below.

3.2.1 Perspective Study of Agricultural Development for Nepal (1970-90)

The Food and Agriculture Organization of the United Nations (FAO) initiated the first comprehensive perspective plan for the agricultural sector for the period from 1970-90 (FAO 1974). This twenty-year plan, consisting of a central policy paper and twenty-one appendices, each dealing with different subsectors, commodities, and policy issues, emphasised increasing cropping intensities and crop yields.

The plan recommended expansion of horticulture and livestock in the hills and mountains, and field crops in the *Terai*. The recommended policy package included: (i) improving north-south linkages through the development of growth axes that would better integrate the *Terai*, hills, and mountains; (ii) reducing pressure on the land by transferring excess people from the hills and mountains to the *Terai* through planned resettlement[1]; (iii) launching land reform and institutional changes that would allow local communities to play a greater role in managing resources, discourage land fragmentation, and encourage consolidation; (iv) subsidising rural public works in order to generate employment; (v) improving soil fertility through the introduction of fertilizers and new production technologies; (vi) emphasising the development of feeder roads; and (vii) mobilising resources through local institutions.

The 1974 study was, however, neither endorsed nor implemented by the government, although it was prepared with the latter's participation.

Perhaps influenced by the FAO study, the government published a policy document called the Agricultural Development Policy, 1972. Accordingly, Nepal was divided into 12 agro-ecological zones (three ecological regions–mountains, hills and *Terai*–in each of the then existing four development regions–East, Centre, West and Far-West). Each zone was then prioritised for specific enterprises (field crops, fruit, and livestock).

The mountain belt was in general recommended for livestock production, the hills for horticultural crops and the *Terai* for cereals and cash crops. The actual programmes implemented, however, were

[1] The government during that period was actively encouraging migration of the hill and mountain people to the *Terai* which still abounded in forest lands that could be cleared and converted into agricultural production.

only remotely congruent with this official policy.

3.2.2 Ten-Year Agricultural Development Plan

Concurrent with the FAO study, a Ten-Year Agricultural Development Plan was prepared by the government in 1973 (MFAI 1973) and put into effect with the start of the Fifth (Five-Year) Plan in 1975. In order to give an initial thrust to the implementation of this plan, fiscal 1974/75 was heralded as the Year of Agriculture. As a preparatory exercise, the then Ministry of Food and Agriculture was restructured in 1972. That year, the Department of Agriculture was established by merging the existing five departments (Agricultural Research and Education, Agricultural Extension, Horticulture, Livestock Development and Veterinary, and Fisheries). The then Department of Irrigation, Hydrology, and Meteorology under the Ministry of Water Resources was transferred to the renamed Ministry of Food, Agriculture, and Irrigation. The Department of Food and Agricultural Marketing Services was newly created (it was subsequently dissolved in 1992). Four (later five) Regional Agricultural Directorates were established.

Apparently, the Ten-Year Plan saw the main problem area as organizational structure, and hence these major changes were made. The plan again emphasised regional specialisation (animal husbandry in the mountains, fruit production in the midhills, and field crops in the *Terai*). Policies were laid out in general terms for each major subsector, treating agricultural credit, marketing, pricing, food distribution, and soil fertility as essential ingredients. Ten-year targets were specified for the major products, inputs, and production of trained manpower.

Implementation of the plan lost steam in subsequent years and irrigation was eventually transferred back to water resources.

3.2.3 Nepal Agriculture Sector Strategy Study

In 1982, the Nepal Agriculture Sector Strategy Study was prepared with technical assistance from the Asian Development Bank (HMGN/AsDB 1982). The main report with recommendations was contained in the first volume of this two-volume study while in-depth reviews of leading subsectors were provided in the second volume.

The study concluded that "*a well-defined operational strategy for agricultural development is missing*". It stated that the lack of growth in agriculture was mainly due to weaknesses and deficiencies in Nepal's organizational and institutional arrangements. The strategy study had five key objectives: (i) to increase food production and improve nutrition; (ii) to increase income and employment by generating an additional 75-100 thousand jobs annually; (iii) to promote import substitution and increase exports so as to improve the balance of trade; (iv) to undertake massive afforestation and development of hydroelectric power; and (v) to begin emphasising environmental protection.

Major areas of emphasis contained in the AsDB study included land-use planning and environmental protection; development of irrigation and power; improved crop production technologies; development of livestock, forestry, and fisheries; strengthening and integration of agricultural support services; land tenure reforms; pricing and trade policies; macro-economic policies; and management capabilities.

The government did not endorse this study, nor was it implemented, although it was

prepared jointly by the government and the bank.

3.2.4 Perspective Plans

Yet another series of perspective plans were commissioned by the government in 1985 for the period 1985-2005 (APROSC 1986a, b, c) through the Agricultural Projects' Services' Centre for three interrelated areas: land use, agriculture, and food grains. These plans were not taken up seriously for implementation.

3.2.5 The Basic Needs' Programme

Soon after preparation of the AsDB-sponsored sector strategy and the government-initiated perspective plans, the government launched an ambitious Basic Needs' Programme in 1986 to meet the minimum basic needs of all Nepalese by the year 2000. Six key elements of the basic needs' package included food, clothing, shelter, primary health, basic education, and security.

Separate programmes were prepared for agriculture and irrigation, envisaging a doubling of cereal production by 2000 (NPC 1986). The hallmark of the Basic Needs' Programme was its emphasis on decentralized planning and implementation and strengthening of service centres at the subdistrict level for enhanced local-level institutional capacity.

Despite the inherent shortcomings of the programme, such as its overly ambitious targets, there was an unusual seriousness in its implementation since it was started on the initiative of the King of Nepal, an absolute ruler at the time. There were indications of commitment to significantly increase the budgetary and human resources in favour of the agricultural sector. However, the programme was completely abandoned with the restoration of democracy in 1990.

3.2.6 Master Plans

In addition to the various plans described above, five separate master plans have been prepared, each for forestry, irrigation, horticulture, dairy, and livestock. Since these master plans were prepared with the support of various donors, they have received high levels of support from the donor community.

3.2.7 The Agricultural Perspective Plan

The Agricultural Perspective Plan (APP) (APROSC/Mellor 1995) is the latest in a series of long-term plans and strategy studies. Major aspects of the plan are summarised below.

3.3 The Agricultural Perspective Plan (APP)

The APP stipulates that dynamic and commercially-oriented agriculture has the potential to have a significant and positive impact in terms of both increased income and protecting the environment. This is possible mainly in three ways. First, highly productive and competitive agriculture implies intensification of cropping systems and input utilisation in order to economically optimise the existing resource endowments at the household and community levels. Such optimisation would make it economically less attractive for farmers to continue cultivating unproductive marginal lands. Once farmers start applying expensive purchased inputs on their fields, the expected returns from poor quality lands become unattractive.

Second, commercial and high growth agriculture would be able to generate enough employment and income opportunities within the sector itself in order to absorb a growing number of the hitherto unemployed or underemployed rural labour force. More intensive–both in terms

of cropping intensity and application of purchased inputs–farming operations would require not only an increased supply of better quality inputs and ancillary services, such as extension and equipment repair, it will also demand more labour.

Third, a vibrant and growing agriculture means continuously rising rural household incomes, to be spent on goods and services provided from outside the agricultural sector. There would be more demand for manufactured products and processed agricultural goods, triggering and augmenting a multiplier effect in the rest of the economy. The APP states that, when agriculture grows at a respectable rate, the value of such multiplier has been empirically established to be 1.5. This means that, with each percentage point growth in agriculture, the non-agricultural sector will grow at 1.5 per cent. Hence a strong case for agriculture to play the lead role in the overall transformation of the entire economy.

Considering the subsistence trap in which Nepal's agriculture is currently caught, it will not be possible to set the growth process in motion if business is conducted as usual. Rather, it would require complete reorientation and redirection of the strategy, combined with the identification of a small number of priorities and corresponding reallocation of resources. The APP specifically prescribes such a strategy and priorities, namely, focussing on a few inputs and outputs and policy and institutional interventions that could have a significant aggregate impact across the entire country.

The APP is a prioritised plan of action in which a small number of key priorities is carefully packaged together into a prioritised productivity package (PPP). Accordingly, there are four priority inputs (irrigation, fertilizer, technology, roads and power), four priority outputs (livestock, high-value crops, agribusiness, forestry), three targetted areas of focus for impact (poverty reduction and food security, environment, regional balance), and a number of policy interventions, institutional arrangements, and investment decisions.

The following six points summarise the APP strategy.

- A technology-based green revolution in **agriculture** becomes the initial engine of accelerated growth.
- Accelerated agricultural growth creates a demand-pull for the production of high-value commodities in agriculture, as well as for non-agricultural commodities, with consequent large **multiplier effects** on other sectors of the economy.
- Broadly-based high employment **growth** then becomes the mechanism for achieving societal objectives.
- Public policy and investment focus on a small number of **priorities**, building on past investment in human capital and physical and institutional infrastructure.
- A **package approach** to development is introduced, which in Nepal's case would be differentiated for the *Terai*, hills, and mountains, and would recognise the powerful complementarity between public and private investment and priorities and would ensure their coordination.
- To achieve broad-based participation, the strategy is **regionally balanced** and explicitly ensures the **participation of women**.

The APP differs from the past plans in that it focusses on a small number of priorities so as to produce a tangible impact and to realise scale economies essential for commercialisation. Nepal's agricultural research has historically harboured a misconception about what constitutes agricultural research. Research has been treated in a restricted sense to include

biological, physical, and mechanical sciences as these apply to plants and animals. Thus, only the traditional outfits of Khumaltar (agronomy, soils, plant pathology, entomology, botany, agricultural engineering, vegetables, animal husbandry, and animal nutrition), Tripureswar (veterinary science), and Kirtipur (pomology) remained within the ambit of research. The farmer's knowledge and awareness, his/her resource endowments, the culture and the community he/she lives in, the economic environment that determines his/her farming practices and resource utilisation, and the constraints that prevent him/her from realising better returns are issues that shape and influence his/her behaviour. These concerns fall into realms of social sciences that have conspicuously been excluded as relevant areas of investigation. True, some outfits within the larger agricultural bureaucracy (viz., the now dismantled Department of Food and Agricultural Marketing Services) were set up to address some of these areas (viz., farm management, price analysis, and marketing), but they could not be effective because they were isolated from 'mainstream' research.

The APP focusses on limited inputs such as irrigation, seeds, rural roads, electricity, fertilizer, and appropriate technology. As a result, it envisages increasing agricultural productivity, increasing employment, and reducing poverty levels.

However, it does not give adequate attention to issues related to land ownership, tenurial arrangements, and potential impacts on soil fertility as intensive farming expands into the hill and mountain areas. Since the APP is just another of the series of sectoral plans, it is hard to tell how effectively it would succeed in achieving the stated objectives. Its impact on land management and land degradation is similarly uncertain. One likelihood is that, given the resource constraints and mass poverty, such a policy relying on purchased inputs and intensive agriculture could be more suitable to resource rich farmers and the majority of the poor may still be left behind.

3.4 Agricultural Extension

Nepal's agricultural extension service is the oldest of all the public services targetted at the rural people. The historical reason for this is that the first external assistance (from the United States) was received in 1952 in the agricultural sector and it went to the establishment of the Tribhuvan *Gram Vikas* (Village Development) Service for extension. A number of Village Development Centres were subsequently established across the country to deliver extension services (Skerry *et al.* 1991). Until the 1970s, the emphasis was on extending the organizational network as far as possible so that larger sections of the rural population could be reached and 'taught' to improve their live standards by adopting the recommended modern and improved technological packages. Junior technicians and junior technical assistants (JT/JTAs)[2], who symbolised the ultimate harbingers of progress, were deployed at the local level and had to cover several thousand households in a cluster of villages. Obviously, their ability to respond to the specific needs of the farmers in different socioeconomic and agro-climatic conditions was severely limited, and hence they remained largely ineffective.

The next stage of extension, initiated in the 1980s with the assistance of the World Bank, took the form of the 'Training and Visit (T&V)' system, in which the focus was on requiring

[2] The JT/JTA is a middle-level technician, with training in agriculture and livestock-related fields, ranging from two years/one year after high school.

the JTAs to deliver one message at a time, depending on the most important agricultural practice in a given area. This required the establishment of a subdistrict level network of service centres where the JTAs could be given a new message at an interval of a fortnight. As expected, such a mode of technology transfer could be possible only in the accessible *Terai* districts, and hence the T&V system was applied only in those districts. A variant of this system was also tried in the hills, but it was largely ineffective. Evidence suggests that it was ineffectual even in the *Terai*. As Jha *et al.* (1994) state, these approaches have been introduced through the support of many donor agencies (Swiss Development Corporation, USAID, Asian Development Bank, Japan International Cooperation Agency, the World Bank). Often, this has resulted in the operation of multiple approaches in the same district at the same time, confusing the programme implementors and reducing the clarity of the objectives, roles, and targets of extension. The bureaucracy regards this as a wide gap between policy and implementation, but the real problem seems to be the absence of a clear and coherent policy.

The current mode of extension relies on the so-called group approach. Accordingly, farmers' groups are constituted according to the main commodity they grow or species they keep, viz., rice group, dairy group, goat group, and so on.

More than forty years of past history have seen several experimentations and adoption of a number of extension approaches, but concrete achievements remain as elusive as ever. 'Extension models' tried thus far include the following: (a) traditional approaches based on the conventional diffusion model in which the JTA is expected to provide assistance to anybody for any problem; (b) the T&V system, applied mostly in the *Terai*; (c) the IRDP approach, followed in areas covered by various integrated rural development projects; (d) *tuki* (a Nepali term for the widely used typical kerosene lamp) approach, followed in the Swiss-assisted districts of Dolakha and Sindhu Palchowk, in which the JTA acted both as a source of information as well as a commission agent for the purchased inputs he/she supplied; (e) a block production programme, concentrating extension services in 28 selected districts; (f) a farming systems' approach, further concentrating service delivery in selected sites of districts rated as highly potential (Jha *et al.* 1994); and (g) the current group approach.

All these approaches suffer from various weaknesses (Jha *et al.* 1994). One of the prominent problems often cited by the farmers is that of 'political interference', meaning *ad hoc* tampering with the system by political workers from the central to the local levels.

Various donor-supported studies have suggested alternative approaches such as a combination of group and outreach approaches involving the NGOs, women, and the private sector.

The present group approach is justified since it is regarded as cost-effective, participatory, potentially demand-driven, broad-based in terms of taking care of all sections of the rural community, and consistent with the 'one umbrella' policy adopted by the government in the 1990s.

Similarly, the outreach approach has been justified on the basis of farmer-based, clientele-oriented research, with a potential for immediate technology transfer through direct demonstration effect and better interaction among researchers, extensionists and farmer.

There is a general admission of the past failure of extension to give due attention to the real constraints and opportunities faced by the farmers. A strong case is then made

for a more relevant and responsive extension service with an increased role for specialised subject-matter specialists (SMSs), together with a more interdisciplinary approach involving extensionists, research scientists, and farmers.

Women farmers have particularly been neglected by all the past programmes, except in the current group approach. But the cadre of women extensionists remains extremely meagre. The emphasis all along has been to treat all the farmers (rich and poor, large and small) equally.

The poor education of JT/JTAs makes them professionally inadequate to be of relevance in the existing realities of the country's rural areas. In 1994 the World Bank recommended to gradually phasing out the JT/JTA cadre through natural attrition and requiring all field extension workers to be at least agricultural graduates (Jha *et al.* 1994). No initiative has been taken thus far in this regard.

Agricultural development efforts are still target-oriented and based narrowly on increasing production, with insufficent attention to market potentials. A very generalist approach is followed without due regard to the diverse peculiarities of different agroecological regions and farmer categories. Technical service and input delivery mechanisms have been weak.

Beginning with the Eighth Plan, a much more expanded and definitive role was emphasised for the private sector. The underlying justification seemed to be that the private sector had an inherent motivation to carry out most of the production, processing, transportation and marketing functions more efficiently than the public sector.

The contemporary agriculture-related policies, elaborated upon in the APP and reiterated in the Nepal Environmental Policy and Action Plan (EPC 1993), are summarised in Table 3.1.

3.5 Impact

Nepal's agricultural development strategy has historically emphasised promotion of so-called improved farming practices, dominated by promotion of high-yielding varieties of crops, cross-bred livestock, chemical fertilizers, and irrigation. The seed-fertilizer technology suitable to irrigated flat lands has also been pushed to the hills and mountains where the fragile ecological conditions and resource endowments are quite different. Crop-dominated farming systems have not proven effective in these areas, in terms of both increased food production and soil fertility maintenance. Crop yields have declined consistently over time, threatening the food security of the small landholders and marginalised farmers particularly. These trends have a direct relationship to the deteriorating fertility of soil (EPC 1993; Shrestha and Katwal 1992). Intensive cultivation and insufficient application of nutrients to the soil have led to situations where the farmers are forced to completely abandon their land because of the extremely low yields. Carson (1992) estimates that between 10 to 20 per cent of such lands may have been abandoned.

Citing evidence from a hill village in the Central Hill Region – Dhuskun, in Sindhu Palchowk, Shrestha and Katwal (1992) report: "*The cropping intensity is already considerably high (172%). Due to the lack of soil nutrients, stones and rocks have begun to surface on cultivated land. The supply of compost materials, from both private and public land, and manure from livestock has decreased significantly over the past 20 to 30 years.*"

On the other hand, work carried out at the British-supported Lumle Agricultural

Table 3.1: **Agricultural Land Management Policies and Action Plan**

Policies	Action Plan	Responsible Agencies
Improve soil fertility management by increasing supplies of farmyard manure and reducing the stock density of livestock on arable land	Encourage planting of trees, shrubs, and grasses on private land to provide an additional source of fodder for livestock	DOA, DLS
	Where appropriate, encourage stall-feeding of livestock using fodder from trees on private land	DLS, NARC
	Promote low-cost, vegetative, and cultural soil conservation measures to reduce soil erosion	DSC, DOA, NARC
Promote policies to directly increase soil fertility	Encourage modification of farming systems to include nitrogen-fixing species to enhance nutrient cycling	MOA, NARC
	Remove constraints to greater private sector involvement in the purchase and distribution of chemical fertilizers to improve their availability	DOA, NPC
	Develop recommended fertilizer applications, including the use of agricultural lime on acidic soils, based on particular agro-ecological conditions	DOA, NARC
Develop an extension system capable of responding to farmers' needs	Improve participation in agricultural extension through the use of the "group approach"	DOA, DLS
	Finalise arrangements for pilot scheme for contracting-out extension services to the private sector	MOA, NPC
	Promote the use of adaptive research techniques on farms as a method of rapidly disseminating information	DOA, DLS, NARC

Source: EPC (1993, 10)

Centre (LAC) in the Western Hills demonstrates that significant progress is possible with respect to vegetable seed production, rice production, and cattle and buffalo rearing on a sustainable basis when the research and extension system properly integrated five key elements: a strong institutional foundation, a comprehensive understanding of farmers' conditions, the participation of farmers in all stages of research and dissemination, the interdisciplinary interaction of all sections of LAC, and the synergistic effect of having research, extension, and training in one organization (Pound *et al.* 1992). Similar experiences are reported from the Pakhribas Agriculture Centre in the Eastern Hills (Chand and Thapa 1992).

All periodic plans, strategic documents, and action plans have invariably emphasised the need for giving high priority to soil fertility maintenance, particularly in the hills and mountains. However, the continuously declining crop yields and ever worsening process of land degradation indicate that these policies have failed.

Major indicators of unsustainability and declining trends in Nepal's hill and

mountain agriculture are summarised in Table 3.2

Partap and Watson (1994) elaborate on the important contributing factors and issues among the range of causes and symptoms of decline. The two critical problems commonly faced by mountain farmers, in general, and Nepalese farmers in particular are: degradation of land and the extent of land degradation. The area of degraded lands in Nepal is estimated of be 1.8 million hectares. Similarly, estimates of the magnitude of soil erosion from the hill and mountain areas of Nepal are compiled from various sources and presented in Table 3.3 below.

A study conducted by Banskota (1992), cited in Partap and Watson (1994), indicates that the total amount of nitrogen lost from level terraces (365,000 ha) and sloping farm lands (816,00 ha) is about 27,000 metric tonnes, whereas the total amount of nitrogen fertilizer used in 1987/88 was only 24,320 metric tonnes. The total loss of combined nutrients exceeded the level of inputs used in 1987/88.

The value of nutrient loss has been estimated at over six million rupees for paddy and over 54 million rupees for maize, at 1987/88 market prices. The implications in terms of equivalent food grain loss are even more significant. The total losses were equivalent to about 75,000 MT of paddy and 747,000 MT of maize. These large losses indicate the difficulties experienced in sustaining food production when soil fertility is being depleted at rapid rates.

3.5.1 Declining Crop Yields

A large body of literature cited in Partap and Watson (1994) identifies several causes of land degradation. Farmland productivity in the upland areas measured in crop yields has either remained steady or declined. For instance, average crop yields declined within the range of five to 30 per cent during the past few decades in a number of mountain watersheds in Nepal, in the Indian Himalayas, and in the Tibet Autonomous Region of China (Banskota 1992; Shrestha 1992; Bajracharya 1992; Singh 1992; Yanhua 1992; and Swarup 1991).

3.5.2 Increasing Food Insecurity

An ICIMOD study in the mid-hills of Nepal (Panday 1992) highlights the increasing food insecurity situation among the mountain farmers in resource poor areas. The study revealed that 86 per cent of the households in Bhardeo village were experiencing food deficits to varying degrees. Among them, over 50 per cent suffered food deficits for at least six months each year. It further concluded that the production of adequate amounts of food on small landholdings, with ever–declining farm productivity, is almost impossible. Bhardeo depicts the worsening trend of food insecurity in resource poor, heavily populated mountain areas (Partap and Watson 1994).

3.5.3 Gaps in the Demand and Supply of Biomass

The decline in productivity is not limited only to farmlands. Acute shortages of biomass production are widely reported, in the form of fodder, fuelwood, or other forest products on which the sustenance of the mountain people depends.

Keeping in view all the basic requirements of farm families, Wyatt Smith (1982) calculated that about three to four hectares of support lands (forests and grazing land/pastures) are required to maintain one hectare of cultivated land for normal production in the middle mountains of Nepal. Studies indicate that in many areas, the ratio of support land to agricultural land has gone down to 0.5 ha from four hectares (Shrestha 1992).

Table 3.2: **Indicators of Unsustainbility/Decline in Hill and Mountain Agriculture (Time frame: approximately four decades spanning the period from 1954-91)**

Indicators	Rates of Change	Indicators	Rates of Change
I. RESOURCE BASE		**II. PRODUCTIVE FLOW**	
1. Landslides	100-300%	18. Fall in average crop yields on sloping lands: (a) Maize and wheat, (b) Millet	(a) 9-15% (b) 10-72%
2. Gully formation on sloping lands	High-Medium	19. New land under cultivation	5-15%
3. Soil erosion rates on sloping lands	20-30%	20. Human population	60-65%
4. Abandonment of agricultural land due to decline in fertility	3-11%	21. Decline in the application of compost (organic manure)	25-35%
5. Appearance of stones/rocks on cultivated land	130-200%	22. Additional labour demand due to falling land productivity	35-40%
6. Decline in the size of livestock holding per family (LSU)	20-55%	23. Forestry-farming linkages	Weak
7. Decline in the area of farmland per household	30-10%	24. Food grain purchases from shops	3-50%
8. Decline in forest area	15-85%	25. Need for external inputs for crop production	High-Medium
9. Decline in pasture/grazing area	25-90%	26. Fuelwood and fodder scarcity in terms of time spent in collection	45-200%
10. Decline in good vegetative cover on common property lands	25-30%	27. Fodder supply: (a)decline from common land, (b) increase from private land	(a) 60-85% (b) 130-150%
11. Fragmentation of household farmland (in number of parcels)	20-30%	**III. RESOURCE MANAGEMENT**	
12. Decline in the size of land parcels of families	20-30%	28. Emphasis on monocropping	High
13. Distance between farm land parcel and home	25-60%	29. Cultivation expansion on steep slopes (above 30%)	10-15%
14. Decline in food grain production and self-sufficiency	30-60%	30. Use of weeds and herbaceous crop products as fuelwood	200-230%
15. Permanent outmigration of families	None-5%	31. Conversion of marginal lands into cultivation	15-40%
16. Seasonal migration	High	32. Decline in fallow periods	From 6 to 3 months
17. Conversion of irrigated land into dry farming due to water scarcity	7-15%		

Source: Shrestha (1992)

Table 3.3: **Soil Erosion from Different Land Use Types**	
Type of Land Use	Soil Erosion (MT/Ha/Yr)
Grazing lands (support lands)	100
Rainfed terraces (slopping terraces)	5
Irrigated terraces (level terraces)	0
Sloping farm lands under farmers' practice	38
Source: Partap and Watson (1994)	

Further, assuming that an average of 2.5 ha of supported land is needed to maintain one hectare of agricultural land, the degradation of 1.5 million ha of agricultural forests will affect more than 0.5 million ha of agricultural land. If this is further calculated in terms of food grains, the magnitude of loss is likely to be enormous (Partap and Watson 1994).

Trends of chemical degradation are also appearing in Nepal. Among others, some of the important processes are given below.

3.5.4 Soil Acidification

Evidence of increasing soil acidification are found in the soils of the hill and mountain areas. It is mainly due to the use of pine needles for bedding materials for livestock. The bedding materials are being used for manuring the fields. The practice of using pine needles for compost is quite common in the high mountain areas where it is abundantly available (Joshy *et al.* 1997).

3.5.5 Siltation

Land degradation caused by siltation has also been noticed in the country, especially in the Pokhara Valley. This is mainly due to the irrigation water drawn from the Seti River that carries heavy loads of fine sediment. Both the water and sediments are calcareous in nature, and this has brought changes in both the physical and chemical properties of the soil, thereby causing the degradation of cultivated lands in the valley (Joshy *et al.* 1997).

3.5.6 Flooding

While the heaviest incidences of flooding occur in the *Terai*, low lying areas in the hill valley bottoms are also affected. The total area affected by floods in the country is estimated roughly at 9,000 sq. km. (NPC 1994).

3.5.7 Land Affected by Erosion, Landslides and Floods

Data on lands affected by erosion, landslides, and floods have become available in the last few years. They are presented in Table 3.4.

The Soil Science Division of NARC has made a soil resource inventory of the country. This inventory shows that, in

Table 3.4: **Total Land Area Affected by Erosion, Landslides, and Floods**			
Year	Land Affected (ha)	Year	Land Affected (ha)
1984	1242	1991	283
1985	1355	1992	135
1986	1315	1993	5584
1987	18858	1994	392
1990	1132	1995	41867
Source: HMGN (1996), cited in Wagley (1997)			

general, the soils of Nepal are deficient in nitrogen, phosphorus, and sulphur. Potassium is on the higher side. Results from long-term fertility experiments have shown indications of response to potassium after 15 years of continuous rice-wheat cultivation. Deficiencies in micro-nutrients (zinc, boron, and molybdenum) have been observed to be increasingly widespread in high-yielding varieties of rice, wheat, and maize crops, as well as vegetables. Thus the soil fertility resources of the country will not be rich enough to sustain increased agricultural productivity if not properly managed.

Despite the rather pessimistic scenario described earlier, various researchers (Joshi 1995) report some positive impacts from livestock and tree crops. A rough estimation provides some figures on employment generated by the fodder sector (some 1.2 million persons per year). The benefit of this opportunity is derived mostly by smallholder farmers. In addition to these, fodder and tree crops have intangible values as well. These include soil conservation and watershed protection, protection of biodiversity, and stabilisation of slopes. Fodder and tree crops also provide tangible benefits. Marginal and small farmers plant fodder and tree crops for multipurpose usage. Recently, plantation of tree crops such as *chyuri* (*Bassia butyracea*), *lapsi* (*Choerospondias axillaris*), and *amala* (*Emblica officinalis*) has become common for cash income. Their fruits have market values. Producing ghee from *chyuri* fruit has been a traditional source of income for the people of Baitadi, Doti, and Dadeldhura in the Far-Western mid-hill districts. A total of about 600,000 *chyuri* plants are estimated to be in a productive phase in different parts of the country. At present, local farm families can earn Rs six to 10 thousand annually by selling *chyuri* products (NCS Nepal 1995, cited in Sharma 1996b).

In many instances, fruit, legumes, herbs, cardamom, tea, coffee, ginger, turmeric, niger, and companion trees are mainly grown in wastelands and are found well developed. Partap (1995) reports a very productive use of marginal lands through the use of various kinds of horticultural cash crops. Some micro-watershed areas such as Kapurkot and Sejwal Takura (Sallyan District) present success stories of productive use of degraded lands through the introduction of high value crops (Shrestha *et al.* 1996, cited in Sharma 1996a).

Suwal *et al.* (1991) state that, although a new crop in the Western hills, lentils have been found to be a promising crop even in the higher hills. Under farmers' management conditions, this crop contributes a substantial amount of nitrogen to the succeeding crops. Likewise, intercropping of soybeans is also gaining popularity in the western hills. Such an integrated plant-nutrient management system helps to maintain the soil biological dynamics with the activities of living micro-organisms (Sharma 1996a).

Chapter 4
Entitlement and Property Rights

The actor-oriented approach has much in common with the approach followed by the institutionalists who explain human behaviour on the basis of an individual's resource endowment situation and his/her entitlement and access to goods and services derivable from the larger social context, including common property resources. Common property resources are resources that are shared and managed collectively by groups and communities, and there are well-defined rules of property entitlements and liability obligations to govern the use and management of the resource. In the absence of such property arrangements, the resource in question becomes an open-access resource.

The realm of entitlement is quite wide and no attempt is made to cover them all in this paper. Instead, the following discussion is limited to land ownership and tenurial arrangements.

4.1 Land Tenure

Over generations, land has remained the principal resource for the sustenance of the subsistence-bound rural communities, as well as for generating revenues for the rulers. As Stiller (1993) states: "Land was the central value in these communities. The whole of society was organized around land, not money. Land was productive. Money was not. To own or control land gave far greater status within the community than money-wealth. This explains the Nepalese hunger for land. It also explains in part the emergence of small principalities or mini-states" (p. 7). Land and what it can offer in terms of food and revenue has been of central importance all throughout history. Economic historians of Nepal explain that, before the unification of Nepal around the mid-eighteenth century, there were numerous tiny principalities whose viability and survival were determined mainly by the area and quality of land they could command against their competing neighbours. The surplus generated by severely squeezing the peasants went to pay for the military campaigns for the unification of the country during the mid-eighteenth through the mid-nineteenth centuries (Regmi 1971, 1978; Stiller 1993). Later, during much of the Rana Rule (1846-1951),

land became the principal means of enriching the ruling elites and their collaborators, while the peasantry generally languished in poverty and deprivation.

Land and land-based resources have thus been the principal source of economic surplus generated by the ruling classes. Concentration of land in the hands of a few elite classes and severe exploitation of the peasantry through the excessive expropriation of labour and land revenue have been the principal policy adopted by the rulers through much of the nation's history[3].

Following the overthrow of the Rana Regime in 1951, interventions were initiated by the state to reform land tenure. Significant among them were the formation of the Land Reform Commission in 1953, promulgation of the thirteen-point programme in 1956, Preparation of Land and Cultivators' Records Act 1954, Lands Act 1955, Abolition of Birta Land Act 1957, and Agriculture (New Provisions) Act 1960.

All these measures were largely ineffective since the government was not serious about genuine reform. The overwhelming concern was to perpetuate the status quo, which was to safeguard the interests of the high-caste privileged classes.

The Lands Act of 1962 was the most comprehensive of all the past measures. It fixed ceilings on landholdings (25 *bigha*[4] (16.93 ha) in the *Terai* and inner *Terai*, 80 ropani (4.07 ha) in the hills and mountains, and 50 ropani (2.54 ha) in the Kathmandu Valley), protected the rights of the tenant, fixed rents at 50 per cent of the principal crop grown in a year, and abolished the *birta*[5] system. The act, initially implemented in 16 districts, covered the entire country by 1964.

One of the distinguishing characteristics of the Lands Act 1962 was the compulsory savings' scheme. The scheme required all farmers to deposit a portion of their produce (1.5 maunds [55.99 kg] per owner cultivator, 1 maund [37.32 kg] per land owner renting out land and 0.5 maund [18.66 kg] per tenant in the case of the *Terai*; and 6 mana [1.83 kg] of paddy and 2.55 kg of maize, 4 mana [1.22 kg] of paddy and 1.70 kg of maize, and 2 mana [0.61 kg] of paddy and 0.85 kg of maize, respectively, in the hills) in kind with the local ward committee. Later, depositing cash equivalents was allowed instead of in-kind payment. The resources thus generated were to be used in granting loans to the participating members to undertake various income generating activities. The scheme was to mature in five years after which the farmers were promised full return for their deposits along with an annual five per cent interest. However, massive irregularities and misappropriations soon began to emerge in the scheme, and the then government tacitly condoned these malpractices because staunch supporters of the political system were themselves involved in the scam. Thus a scheme, which could have gone a long way in transforming the traditional rural economy of Nepal through internal resource mobilisation, was massively abused, and it collapsed prematurely.

Land constitutes the principal productive asset owned by the people of Nepal, and access to it determines the income status and well-being of the households. Besides distributional implications, an analysis of

[3] See Regmi (1971, 1978) for further details.

[4] One *bigha* = 0.66 hectares

[5] *Birta* is a land grant made by the state to individuals, usually on a tax free and inheritable basis (see Footnote 7 also).

land distribution helps also to throw light on the farm size productivity relationship under which smaller farms are regarded as being more intensive and productive.

In Nepal, more than two-thirds of the total holdings have less than one hectare of land, and they own only 30 per cent of the total farm area. On the other hand, 1.5 per cent of the holdings in the more than five hectares holding class possess 14 per cent of the total farm area (Table 4.1).

A regional analysis of land distribution indicates that the proportion of landless holdings is higher in the *Terai* than in the hills and mountains. Three-fifths of the holdings in the hills and mountains own less than half of the total land whereas 41 per cent of the holdings in the *Terai* own little more than half of the total land (Table 4.2).

Landless and other chronically resource poor households that are least affected directly by agricultural innovations and growth need special attention while employment opportunities expand on large farms and in non-farm sectors. Interventions to facilitate access to land are among the options available to address the equity issue. Indeed, land redistribution and regulation of tenancy contracts are favoured both on equity and efficiency grounds. Analysis of the 1991 Sample Census of Agriculture data reveals that cropping intensity, a proxy for agricultural productivity, decreases with increase in the

Table 4.1: **Land Distribution by Farm Size in Nepal, 1991**

Size of Holdings	Holdings		Total Area	
	Number	%	Hectares	%
No Land	32,109	1.2	1,571	0.1
Holdings with land	2,703,941	98.8	2,597,400	99.9
- Below 1 Ha	1,877,702	68.6	791,883	30.5
- 1-2 Ha	529,467	19.4	716,533	27.6
- 2-3 Ha	168,449	6.2	400,227	15.4
- 3-5 Ha	88,165	3.2	328,089	12.6
- 5 Ha and Above	40,158	1.5	360,669	13.9

Source: National Sample Census of Agriculture 1991 (CBS 1994b)

Table 4.2: **Percent Distribution of Farm Holdings and Area by Ecological Region, 1991**

Size of Holdings	Ecological Regions					
	Mountains		Hills		*Terai*	
	Holdings	Area	Holdings	Area	Holdings	Area
Landless	0.30	-	0.2	0.04	0.9	-
Below 1 ha	7.80	3.5	37.8	17.00	23.0	10.0
1-2 ha	1.30	1.8	8.6	12.20	9.4	13.5
2-3 ha	0.20	0.6	1.9	4.80	4.0	10.0
3-5 ha	0.10	0.4	0.8	3.10	2.3	9.1
5 ha and above	0.05	0.5	0.3	3.10	1.2	10.3
Total	9.75	6.8	49.6	40.24	40.8	52.9

Number of total holdings 2,736,056
Total area of holdings (hectares) 2,598,971

Source: National Sample Census of Agriculture 1991 (CBS 1994b)

Table 4.3: **Relationship of Cropping Intensity with Land Holding Size and Fragmentation**

Regions	Number of Districts	R-Squared	Estimated Coefficient Value		
			Total Holding in ha	No. of Parcels Per HH	Intercept
Mountains	15	0.45	-0.26 (1.89)	-0.30 (2.64)	2.33
Hills	39	0.15	-0.08 (2.34)	0.02 (0.36)	2.22
Terai	20	0.44	-0.24 (2.61)	-0.10 (2.46)	2.31

(Figures in parentheses indicate t-values)
Equation: Cropping intensity = a (intercept) + ln size of holding (ha) + ln number of parcels per household
Source: National Sample Census of Agriculture 1991

Table 4.4: **Structure of Tenancy, 1991**

Regions	Pure Tenants as % of Total Holdings	Mixed Tenants as % of Total Holdings	Area Rented as % of Total Land
Nepal	1.9	14.9	9.3
Mountains	1.1	12.0	5.8
Hills	1.2	11.8	4.6
Terai	2.7	18.8	12.9

Source: National Sample Census of Agriculture 1991

size of holding per household (Table 4.3). Thus redistribution of land has the potential to increase output and equity, hence the case for more equal distribution of land.

4.2 Tenancy

Table 4.4 presents information regarding the land tenancy situation in Nepal. Details are provided for three holding categories: (a) holdings of cultivated rented land only; (b) holdings engaged in more than one tenure arrangement (mixed tenure); and (c) rented area as percentage of total area of holding. About two per cent of the total farm holdings are pure tenants who do not have their own land. The proportion of such holdings varies across the ecological belts. In the *Terai*, 2.7 per cent of the holdings are of such a type.

The bulk of the holdings operate under mixed tenurial arrangements supplementing their own holdings with land obtained through tenancy arrangements (Table 4.4). About 15 per cent of the total holdings are under the mixed tenancy form. Again, the incidence is much higher in the *Terai* where almost one-fifth of the total land holders are mixed tenants. In terms of area, land under tenancy (both pure and mixed) constitutes about 10 per cent of the total farmland in Nepal. Across the ecological belts, 13 per cent of the land in the *Terai*, and about five per cent of it in the hills and mountains, is under tenancy.

4.3 Fragmentation

Land fragmentation is considered to be one of the structural problems inhibiting the modernisation of agriculture. Because of the scattered nature of farm parcels, and in many instances due to their economically non-viable size, farmers are hindered from adopting productivity enhancing technologies that are otherwise readily available for them. The case of shallow tubewells is one example. Information on the extent of fragmentation

Table 4.5: **Land Fragmentation, 1991**		
Regions	Average Parcels per Farm	Number of Parcels per Hectare
Nepal	3.96	4.2
Mountains	4.63	6.8
Hills	3.92	5.1
Terai	3.85	3.1
Source: National Sample Census of Agriculture, 1991.		

by ecological region is presented in Table 4.5.

Thus the main issues related to land ownership and tenancy are ceilings on land holdings, dual ownership of land, fragmentation of holdings, and landlessness among the rural households.

The combination of the existing legal provisions concerning inheritance and the present land ceilings would imply an increasing fragmentation and sub-division of land holdings as the society moves from one generation to the other. Experiences from other countries need to be shared in this respect.

In a nutshell, opportunities exist for a thorough review, from the policy perspective, of the implications of existing legal instruments vis-à-vis the present policies and then to introduce consistent amendments to these laws, rules, and regulations.

In the year 1995, HMGN formed a 'High Level Land Reform Commission' in order to study thoroughly the land issues and suggest corrective measures to the government.

This commission completed the study and the report is believed to be a useful document. This was submitted to the government, but it is not available to the public.

There has been an ongoing argument between the Departments of Agriculture and Forestry regarding what constitutes forest and agricultural areas. Encroachment of forests for crop production was in fact encouraged in the past with a view to raising land revenue. This encouraged the land scarce-hill dwellers to migrate to the *Terai* and settle there by clearing patches of forest land. Thus the *Terai* forest acted as a new frontier for the hill people. However, this frontier closed somewhere around the 1970s, but the problem of the landless encroaching on the forest continues to this day, albeit on a reduced scale. The policy related to illegal encroachment is not strong. Quite often, the squatters are moved and driven away by the government authorities. But, at other times, they are encouraged by the politicians of that particular area to break the law and stay in the forest area. They are also promised land ownership rights. This has long lasting socioeconomic and political implications. Such illegal settlements encourage other local residents to illegally occupy such land and registered it later. If these families are provided with some assistance from the government on humanitarian grounds, the neighbourhood becomes dissatisfied with the government, as they would also claim for all unmet demands. There may be inter-ethnic/ community conflicts and clashes. Even politicians were found to be motivated to entice such settlers and enhance deforestation. This has been found to be true, particularly during election periods.

4.4 Impact

The above analysis reveals that land, the principal resource for people's sustenance, is quite inequitably distributed. On the other hand, there is evidence to show that smaller farms are more productive than larger ones. This would imply that redistribution of land is justified not only

on equity grounds, but also from the standpoint of economic efficiency.

Yet, the power elites in Nepal have only paid lip service to genuine land and tenancy reforms. The existing legislation has created confusion regarding land ownership to such an extent that both the land owner and the tenant are discouraged from making investments in land for quality improvement and productivity enhancement. The result has been a lack of long-term investment on land improvement and inadequate replenishment of nutrients. The process is being aggravated with the introduction of the new seed-fertilizer technology that demands intensive cropping patterns and heavy application of purchased inputs.

There is a widespread belief that there are much more tenant farmers than are shown by official records. The vast majority of the informally operating tenants are simply not recorded, for fear of eviction by the landowners.

Thus all the main features related to land ownership, tenancy patterns, and holding sizes are against investment in land improvement, productivity enhancement, commercialisation of farming, and sustainable resource management.

4.5 Gender

Available indicators (see Annex 1, Tables 2 and 3) show that Nepalese agriculture is gradually being 'feminised'. The percentage of economically active men in agricultural occupations is decreasing at a more rapid pace than for women. Similarly, within the total number of 'economically active' people engaged in agriculture, the proportion of women is increasing while that of men is decreasing. In terms of total time allocated to agriculture, a recent comparative study indicates that the number of hours spent by 'men' and 'boys' is decreasing while the time spent by 'women' and 'girls' is increasing (see Annex 1, Table 4) (Stri Shakti 1995).

These changes vis-à-vis the overwhelming role of women in Nepalese agriculture would imply that the choice of programme and technology should have a built-in bias in favour of women. As suggested by past experience, and incorporated in the Agriculture Perspective Plan (APP) approved by the Government in 1995, vegetable, livestock, and horticultural activities have this type of bias that not only provides employment opportunities but also contributes to empowering women economically.

Chapter 5
Forestry

5.1 Brief History

In order to understand Nepal's forestry policy and its impact on land management, a brief account of the historical context of forest policy and administration from the beginning of the twentieth century is necessary. Hobley (1996) categorises forestry in Nepal into three broad stages: Privatisation (1768-1951), nationalisation (1951-87), and populism (1987 onward).

In this section, it is possible to see a move from the age of privatisation (before 1951), to centralized control (1957-1987), to local control. A variety of national events, influence of the donors, various key field activities and local pressure have contributed to the development of forest policy and administration in Nepal (see Figure in Annex 5). In the figure, the fifty years are divided into three eras of privatisation, nationalisation, and populism. There are five aspects that attempt to capture the key factors contributing to policy change.

It was only in 1925 that 'formal' forestry policy and administration (then known as *Ban Jach*) started in Nepal. The establishment of the first Department of Forests took place in 1942. The forestry tradition in Nepal came to resemble that of India, since the structure and nature of the forest policy and administration were modelled directly on the Indian Forest Service which was established directly by British colonial regime. This model in turn stemmed from the training and ethos of the Imperial Forestry School at Dehradun and Oxford. The forestry policy and administration then were merely about how to export more timber from the *Terai* in British India and to supply wood and wealth to the Rana families. The Rana regime (1846-1951) had distributed almost one-third of the forest to various Rana families and others in the form of *birta* and *jagir* tenure[6].

There was also the influence of the global post world war era of institutional

[6] According to Regmi (1978) *birta* was a grant of land given to a noble as a reward for a service rendered to the state. This led to the emergence of *birta* land tenure. It was usually both tax free and heritable, and had no set time limit. It was valid until it was recalled or confiscated. *Jagir* was also a grant of land given to government employees (civil or military) in lieu of salary. This led to the emergence of *jagir* land tenure. The *jagir* land grant was also tax free but remained valid only as long as the person concerned served the government. *Rakam* is a compulsory labour obligation which a farmer rendered to government and later also to the *birta* owners on a regular and inheritable basis.

development of forest services, most of which were designed in a more centralized way and through which foresters were trained as single minded in their aim to protect and exploit forests for commercial purposes (Westoby 1989). Although Nepal had little experience of industrial use of forest, it was not out of touch regarding the whims of industrial forestry. The classic forestry education made the forest service highly technically oriented, and the autocratic political regime made the forest service a highly authoritative and centralized institution.

In the hills, however, during the Rana period there were no specific policies, although there was *de facto* recognition of the *kipat* system[7], the *talukdari* system[8] and the 'indigenous forest management system' (Fisher 1989) which were very common in the hills of Nepal.

In 1957 the Private Forest Nationalisation Act was introduced with the aim of ending *birta* and *jagir* tenure instituted by the Ranas. The 1957 act and the subsequent introduction of legal instruments meant that the forestry service began to function simply as a police force and continued to operate against the subsistence needs of the primary users and in favour of the interests of the feudal rulers (Soussan *et al.* 1995).

The Nationalisation Act has led to tremendous controversy amongst academics and practitioners alike on the causes of deforestation. Although one of the main intentions of nationalisation was to prevent the destruction of the forest and to ensure adequate protection, maintenance, and utilisation of privately owned forests (Regmi 1978), this act merely placed all forest land under the control of the Forest Department turning foresters into policemen and licensing officers acting against the interests of the villagers. Although the state asserted its ownership of natural resources all over the country, there was little effect in many parts of the hills (Bajracharya 1986; Hobley 1990).

Whatever may be the intention of the 1957 Act, the nationalisation of forests that were managed by the local people under traditional systems was adversely effected. Nationalisation was seen then as the cause and not the solution of the forestry problem (Hobley 1985). In this sense, it is necessary to note that there were two fundamental flaws in this Act. First, it gave no recognition to traditional systems of forest management by local people for their own needs. This resulted not only in conflict between local communities and the Forest Department, but also in some places a decline in forest quality. This stemmed mainly from the fact that local people continued to exploit forest resources, but felt no obligation to protect or control their use of forests as they had done previously (Arnold and Campbell 1986; Messerschmidt 1995). Secondly, the Act contained the *a priori* assumption that the Forest Department could take effective control over the forests. Even today, Nepal's Forest Department does not have enough manpower to administer even a fraction of the lands nominally under its control effectively, and in the 1950s it had no more than a handful of trained foresters in the forest service.

In 1959, the first Ministry of Forests to serve the entire country was established. However, at this stage also, altogether there

[7] An ancient type of communal land tenure, applied to both cultivated and forested land. Under this system a community was granted land by the king in recognition of the land's traditional communal tenure. On *kipat* land, the head men gave individuals the right to till certain areas and to collect forest products from other areas (Regmi 1978).

[8] A local functionary (usually a hereditary position) of the state for collecting land tax. This position existed until the 1950s.

was an average of less than two dozen staff in each Division (2-3 districts) in the forest service. Out of which trained staff were negligible and thus management of each patch of forest was not possible. Most forests with the exception of a few in the *Terai* remained unmanaged and the forest service was still understaffed and underdeveloped. Despite this, the Forest Act of 1961 was enforced. The focus of this act was mainly administrative; providing for the categorisation, demarcation, and restriction of forests, defining the responsibilities of the Forest Department and laying down offence regulations and penalties.

The 1967 Forest Preservation (Special Arrangement) Act further defined forestry offences and penalties and reinforced the role of the Forest Department including the provision to 'empower District Forest Officers to shoot wrongdoers below the kneecap if they in any way imperilled the life or health of forest officials' (HMGN 1961; Talbott and Khadka 1994). This act together with several other land-related acts such as the *Birta* Abolition Act (1959), the Lands Act (1964), and the Pasture Land Nationalisation Act (1974) increased the power of the forest service. The Forest Department became a powerful institution with both a technical as well as a judicial role, an exclusive body for the control of forests. The focus of the provisions emphasised the traditional policing role of the Forest Department, in particular creating the power to establish Forest Preservation Special Courts to enforce regulations and exact penalties. These arrangements increased dramatically the disaffection of local people from the forest and led to even greater hostility towards the Forest Department.

Despite all these powerful Forest Acts, the forest service remained ineffective. It was neither able to protect the existing forests nor was it able to place the forest into active management.

The global wind of modernisation based on green revolution technology led to the conversion of forest land for agriculture (e. g., supported by government incentives to hill migrants to carry out this conversion). There was a massive policy in the 1950s to shift populations from the hills to the *Terai* (Bajracharya 1983). In the early 1970s the government established large- and medium-scale forest-based industries, such as the Timber Corporation, of Nepal (TCN) and Nepal Fuelwood Corporation were established with a grant from the FAO/UNDP. The major forestry activities of the forest service then became inventory control, the marking and licensing of forest products, all of which were concentrated in the *Terai*, while hill forests remained relatively neglected and unmanaged. Wherever the impact of the forest act and the forest service was less and the indigenous forest management system (Fisher 1989) was strongly established, the community continued to preserve their local forest through communal arrangements. While in other places, where local systems were not well established, people felt their forest was taken over by the Forest Department, and they converted local forest into open access regimes. Although the Forest Act of 1961 had a provision for handing over national forests for local control and some *Panchayat*(s) took advantage of this Act and took control over *Panchayat* forest (see for example, Hobley 1990), it was not until the early 1980s that provision of such local control was put into widespread practice.

It was becoming clear that the legislation and the expansion of the Forest Department were not achieving the intended goal of preserving forests. It was the concern of a group of community-oriented foresters within the forest service that something had to be done. The Ninth Forestry Conference of 1974 in Kathmandu reviewed the previous policies, structure,

and legislation and recognised that the Forest Department had been ignoring the forests in the hills, and this has led to the deterioration of the watersheds that were now in poor condition (HMGN 1976). This formed the basis of the 1976 National Forestry Plan. This was the first time in its history that the forest service had voiced its opinion in favour of people's rights.

The government also admitted in the National Forestry Plan 1976, for the first time, that protection, management, and development of forests scattered all over the kingdom were not possible through government efforts alone. Although the Forest Department was nominally responsible for the management of all forest resources, it did not have the capacity to undertake anything more than a token policing role in most areas.

In 1977, the First Amendment to the Forest Act of 1961 was passed. This act placed forests into six categories, namely: *Panchayat* Forest (PF), *Panchayat* Protected Forest (PPF), Religious Forest, Leased Forest, Private Forest, and Government Forest. The *Panchayat* and *Panchayat* Protected Forest Regulations were promulgated in 1978. A village *Panchayat* could have up to 125 ha of degraded forest designated as PF for plantation and protection. Similarly, up to 500 ha of existing forested area could be designated as a PPF (HMGN 1978). An arrangement had to be made between the DFO and the *panchayat* to plant and protect an area. The DFO had to supply seedlings for planting and fencing materials and the *panchayat* had to provide voluntary labour for the work. The benefits were to be shared between the *panchayat* and the DFO in a ratio of 1:3.

Despite clear recognition of the need to develop such a partnership between the Forest Department and the *panchayat*, there was little success. For example, until 1987, only 36,376 ha of forest land were transferred to the *panchayat*(s) of the target of 1.83 million hectares (Karmacharya 1987). Some of the causes of failure were the bureaucratic nature of the procedures for handing over forest; the provision of only severely degraded forest to be designated as PF; the wrong assumption that *Panchayat* was synonymous with community; control of forest being given to a committee constituted of powerful elites. The real users of the forest, such as the poor and women, were unaware of the whole process. Communication between the forest service and the *Panchayat* was only between local politicians and the officer in-charge of the DFO whose real interest was in the production and sale of commercially important timber rather than sustainable management to meet local needs. Such commercial interests could not be met by these forests, since all the forests designated as PF were much too degraded to be able to give any immediate benefit.

In the Sixth Five-Year Plan (1981-85), the Forest Sector Policy, which emphasised people's participation in the management, conservation, and utilisation of forest resources was introduced (NPC 1992). The Decentralization Act of 1987 introduced the concept of 'user groups' for local control and administration of policies. The preparation of the Master Plan for the Forestry Sector Nepal (MPFS), which started in 1986 and finished in 1988 and was later revised in 1990, provided the policy context for community forestry (see Box 1), declaring that all accessible forest in the hills should be handed over to community control (HMGN 1990). Unlike the past policies, which concentrated forestry activities in the *Terai* and urban areas, the new policy document puts the emphasis on the basic needs of forest users and production of forest products in the hills. In 1989 a proposal for forestry legislation reform in Nepal was prepared and enacted in 1993. The Forest Act 1993 superseded the existing Forest Act

Box 5.1

OBJECTIVES OF THE FOREST POLICY

Long-term Objectives

- To meet the basic needs of the people for fuelwood, fodder, timber, and other forest products, and to contribute to food production through effective interaction between forestry and farming practices
- To protect the land against degradation by soil erosion, floods, landslides, desertification, and other effects of ecological imbalance
- To conserve the ecosystems and genetic resources
- To contribute to the growth of local and national economies by developing forest management and forest-based industries and creating opportunities for income generation and employment

Medium-term Objectives

- To promote people's participation in forestry resource development, management, and conservation
- To develop the legal framework needed to enhance the contribution of individuals, communities, and institutions
- To strengthen the organizational framework and develop the institutions of the forestry sector to enable them to carry out their allocated tasks

Short-term Objectives

- To support decentralization and promote people's participation in forest resource development, management, and conservation
- To develop the legal framework needed to enhance the contribution of individuals, communities, and institutions to forest resource development, management, and conservation
- To strengthen the organizational framework and develop the institutions of the forestry sector to enable them to carry out their missions

Source: MPFSP (1988a, 4).

1961 and the Forest Protection (Special Arrangement) Act 1967 and attempts to bring conformity with the new Forestry Sector Policy of HMGN. The Forest Act 1993 recognises the Forest User Group as an independent, autonomous non- government institution and the Forest Regulations 1995 give clear guidelines about how to create and recognise user groups' rights and responsibilities to manage forests and use forest products (HMGN 1995).

The implications for the forest service of these changes in policy and administration in 70 years (i.e., 1925-1995) (see Table 5.1 and also the Figure in Annex 5) were staggering. Instead of a centralized cadre of foresters trained in classical forestry and charged with policing the forests, the forest service was to reinvent itself as a rural development agency capable of working with the poor villagers. The forestry institutions would have to drastically alter their courses and training styles; as students continued to be trained as Forest Officers who displayed little empathy towards villagers and their problems. The task of reversing this situation and creating a cadre of people with a new 'world view' is a generational change (King *et al.* 1990).

Table 5.1: **A Brief History of Forest Policy and Administration in Nepal**	
1925	*Ban Jach*
1942	Establishment of the Dept. of Forests
1957	Private Forests' Nationalisation Act
1959	*Birta* Abolition Act
1961	The Forest Act
1964	Land Reform Act
1976	National Forestry Plan
1978	*Panchayat and Panchayat* Protected Forest Rules
1982	Decentralization Act
1988	Master Plan for the Forestry Sector
1993	The Forest Act
1995	Forest Rules
Source: Adapted from Pokharel (1998)	

5.2 Current Policy

The Master Plan for the Forestry Sector 1988 (MPFS) is the only Forestry Sector Policy document approved by HMGN in 1989. In this document a strategic forestry plan for 25 years has been formulated. The Master Plan is further elaborated upon in the Eighth (1992-97) and Ninth Five Year Plan (1998-2003).

Some of the key policies on Forest and Rangelands' management, as described in the Nepal Environmental Policy and Action Plan are reproduced in Table 5.2. These policies and plans essentially reflect the objectives, components, and priorities spelled out in the MPFS.

As in other sectors, all projects to be implemented in the forestry sector are required to undergo an initial environmental examination/environmental impact assessment (IEE/EIA). These requirements are made mandatory by the Environmental Protection Act 1997 and EIA Guidelines for the Forestry Sector 1995. However, these requirements are fulfilled very cursorily in a routinised action, without much attention to the complex analysis usually expected in a standard EIA.

The MPFS spells out the short- and long-term objectives for 25 years (see Box 5.1).

5.3 Forest Resources and Forestry Institutions

5.3.1 Forest Resources

The forest area of Nepal is estimated to be 5.5 million ha which comes to about 37.4 per cent of the total area of the country. Out of this, conifer, hardwood, and mixed species constitute about 17, 59, and 24 per cent of the area, respectively. More than a quarter of the forests have less than 40 per cent crown cover. Shrublands, grasslands, and uncultivated land constitute about 15.7 per cent area which is a potential area for development into forest or pasture (FAO 1997). The distribution of natural forests generally follows altitudinal zones. Below 1,000 m there are tropical forest, predominantly of *Shorea robusta*. Sub-tropical forests occur between 1,000-2,000m which include *Pinus roxburghii, Alnus nepalensis, Schima wallichii,* and *Castanopsis spp*. Lower temperate forests are distributed between 2,000-2,700 m. The major species in this zone are *Pinus wallichina* and *Quercus spp*. Upper temperate forests occur between 2,700-3,000 m and the major species found in

Table 5.2: Policies and Action Plans Related to Forest and Rangeland Management

Policies	Action plan	Responsible Agencies*
Improve forest management by implementing the findings of the Master Plan for the Forestry Sector (MPFS)	Finalise the bye-laws for the implementation of the Forest Act 1993, ensuring they are consistent with HMGN forest policies stated in the MPFS and Eighth Five Year Plan (1992-97)	MFSC
Encourage community participation in forest management	Continue to promote community forestry schemes in the hills	MFSC
Improve rangeland management	Undertake strategic assessments of Nepal's rangelands to improve the knowledge base	MFSC, MOA
	Clarify institutional responsibilities for rangeland management	MFSC, MOA
Encourage greater private sector involvement in managing national forests	Develop an appropriate system of incentives and regulations governing private sector management of forests	MFSC
	Review the present system of open-ended subsidies (provided for the purchase of wood by the District Forest Products' Supply Boards) which prevents the proper valuation of forests and undermines private sector involvement	MFSC
Reorient forestry research	Develop programmes to provide information (including utilisation of so far lesser known forest species) for users' groups, forest industries, and private individuals	MFSC
Raise awareness of the importance of forest conservation	Develop the forest extension agents' role based on promotion and persuasion rather than enforcement and coercion	MFSC
Improve the basis on which land use is decided	Adopt a national land-use policy classifying areas by their suitability for alternative uses	NPC, MFSC, MOA
Minimise adverse environmental impacts of forest-related projects	Finalise EIA guidelines for the forestry sector	NPC, MFSC
Promote research and development of alternative energy sources to reduce dependence on biomass sources	Finalise the energy sector strategy study and incorporate alternative energy development and promotion as an integral part of this strategy	NPC, WECS

* See the inventory of various donor-assisted projects in Annex 4.
Source: EPC (1993,18)

this zone are *Quercus semecarpifolia, Rhododendron arboreum* and *Acer spp.* Sub-alpine forests are found at around 3,000 up to 4,200 m. *Abies spectabilis, Betula utilis, Rhododendron,* and *Juniperus indica* are the major species in this zone.

A total of 103,968 ha of forests in the Siwaliks and *Terai* were cleared under the government's settlement programme from the mid 1980s (MPFS 1988). A more recent study conducted by FORESC, which compares the 1978/79 maps with the Landsat data of 1990/91, shows that the annual deforestation rate is 1.3 per cent for the *Terai* (FORESC 1994). This is a less pessimistic figure than the figure of 3.9 per cent given in MPFS (1988). It is, however, interesting to note that the current annual rate of afforestation is 5,260 ha which is far less than the annual deforestation rate which comes to about 71,500 ha. Villagers have been steadily increasing the tree cover on their farm land during at least the last 20 years, although there is a lack of reliable figures for private planting. *Dalbergia sissoo* is the most common plantation species on both private and government lands in the *Terai*. On government land the commonly planted species in the mountain region are *Pinus roxburghii*. It is important to note that, although the government afforestation rate is far less than the rate of deforestation, the crisis dimensions[8], are undoubtedly much less than are often portrayed in a frequently quoted 1980 World Bank document. Nepal's forests can be managed under various management regimes. Table 5.3 shows the potential forest area under community forest, protected areas, state-managed forests, leasehold forests, religious forests, private forests, and forestry on riverine land.

5.3.2 Forestry Institutions

The Ministry of Forest and Soil Conservation (MFSC) and the four departments and four parastatals (see Box 5.2) under it are the major government forestry institutions. The MFSC in close collaboration with National Planning Commission is responsible for policy formulation, and for preparing plans and programmes, and the Ministry of Finance is responsible for budget.

The Timber Corporation of Nepal (TCN) under the Ministry of Supplies is involved in the marketing of logs collected from the government forests.

The Forest User Groups (FUGs), 6,730 in total, also comprise a prominent institution

Table 5.3: **Potential Forest Area Available for Various Forestry Management Regimes**

Forest Categories ('000 ha)	Hills	*Terai*	Total
Potential community forests	3,344	217	3,561
National parks and conservation area	347	238	585
Potential state-managed forest	309	271	580
Potential leasehold forest	NA	1,042	1,042
Potential religious forest	NA	NA	NA
Private forestry on farm	NA	140	140
Private forestry on riverine land	NA	150	150

Source: LRMP (1986); CPFD (1991); Sowerwine (1994); DOF (1995)

[8] The World Bank (1980) document calculated that, if the present rate of deforestation continues, all accessible forests in the hills of Nepal would disappear in 15 years (i.e., by 1995) and in the *Terai* within 15 years (i.e., by 2005). We are already in 1998 and quite close to 2005, but the projected vision of no forests in the hills has been proven to be false. In the *Terai* region also, it is less likely that in another 7 years there will be no forests.

Box 5.2
VARIOUS DEPARTMENTS UNDER THE MINISTRY OF FORESTS AND SOIL CONSERVATION

Departments	Parastatals and Development Boards
• Department of Forests	• Nepal Rosin and Turpentine Industry
• Department of Soil Conservation	• Herb Production and Processing Company
• Department of National Parks and Wildlife Conservation	• Forest Products Development Board
• Department of Plant Resources	• Forest Research and Survey Centre

Source: MFSC

in the use and management of the forest resource.

A large number of bilateral and multi-lateral donors, national and international NGOs, about 68 in total, is also involved in many forestry activities and provide technical and financial support to Nepal. The major bilateral donors are: DFID, USAID, Australia, DANIDA, FINNIDA, GTZ, SDC, JICA, and SNV. Similarly, the major multi-lateral donor agencies are - World Bank, FAO, EU, IFAD, ADB, and UNDP. International NGOs, such as CARE/Nepal, ActionAid Nepal and UMN, are also actively involved in Nepal's forestry sector.

Many other institutions, such as the Institute of Forestry (IOF), professional societies like Nepal Foresters' Association, Nepal Rangers' Association, Association of Forest-based Industrialists, Ministry of Population and Environment and many environmental forums are also closely associated with the forestry sector in Nepal.

5.4 Policy Implementation

As described earlier contemporary forest policy in Nepal combines an environmental objective to protect against land degradation and deforestation with social and economic objectives. The social and economic objectives are to meet the people's basic needs for firewood, timber, fodder, and other forest products on a sustainable basis; and to contribute to food production through an effective interaction between forestry and farming practices (HMGN 1988). To this end, all accessible forest areas in the middle hills of Nepal are to be handed over by the DOF to the local people under the objective of development, management, and conservation by people themselves.

> *Forests near villages will be managed with the people's participation. The primary task of the government field staff will be to assist and advise people in their efforts to manage and utilise the forests on a sustained yield basis (MPFSP 1988a, 5).*

While contemporary policy is lauded as timely, progressive, deemed to be well intentioned, desirable, and appropriate (CPFD 1991; DOF 1995), there remains a lack of appropriate institutions and mechanisms for their implementation (Fisher 1990a; Gilmour and Fisher 1991).

Many forest and conservation policies in developing countries are initiated, financed and staffed by foreign aid donors (Blaikie 1985) and contemporary forest policy is no exception. The current forest policy document is financed and prepared by foreign donors (in this case FINNIDA and ADB). In the plan, a huge plan of 1.74 billion US dollars for the 21-year period

from the year 1987 is proposed. From the very beginning there has been heavy involvement by foreign aid agencies in plan formulation ensuring their further involvement and 'need' for external resources for years to come. It is shown that at least 30.2 per cent of the total cost is necessary from the 'external assistance to finance the proposed programmes' (MPFSP 1988b, 32).

In MPFS there are altogether 12 programmes. Out of which the Community and Private Forestry Programme is the priority programme which focusses on shifting the management responsibility of any part of accessible national forest from the government to the local communities. This programme is designed to put the policy objectives into practice under the principle of decentralization. The plan aims to invest about 46.6 per cent of the total forestry sector budget in the implementation of the Community and Private Forestry Programme (see Table 5.4).

Tamrakar and Nelson (1991) estimate that about 3.56 million ha (i.e., about 61 per cent of the total national forest) of national forest land is a potential area for community forest that can be handed over to the community.

Although policy has been made more attractive through the use of words such as 'equity' and the highlighting of the benefits for the weakest, the more vulnerable, least resourceful and rural people. However, policy was formulated in the *Panchayat* period according to the interests, balance of power, and tactics of competing classes and groups within and outside the institutions of state.

Following the enactment of the Master Plan for the Forestry Sector 1988, the international donor community, including the main bi-lateral and multi-lateral agencies (see Table 5.5) invested millions of dollars in supporting the government in implementing the forest policy. Apart from the main funding agencies mentioned in the Table 5.5, there are many other donor countries, international agencies, religious missions, and voluntary organizations which assist community forestry programmes. They are: UNDP; FAO; Netherlands Government; International Development Research Centre, Canada;

Table 5.4: **Forestry Programmes and Cost Allocations**

Forestry programmes	Per Cent of the Cost
Primary Programmes	
(i) Community and Private forestry	46.6
(ii) National and Leasehold forestry	20.2
(iii) Wood-based Industries' Development	4.7
(iv) Medicinal Plants and Minor Forest Products' Development	4.6
(v) Conservation of Ecosystems and Genetic Resources	6.7
(vi) Soil Conservation and Watershed Management	9.0
Supportive Programmes	
(vii) Policy and Legal Reform	0.2
(viii) Institutional Reform	-
(ix) Human Resources' Development	4.7
(x) Forestry Research and Extension	2.1
(xi) Resources' Information and Planning	0.9
(xii) Monitoring and Evaluation	0.3

Source: MPFSP (1988b, 32)

Table 5.5: **Various Forestry Projects and Current Progress**

Donor Agencies	Name of the project	Districts	FUGs	Number of Users	Area (ha)
World Bank (IDA)	Hill Community Forestry Development Project	38	4,031	424,826	281,620
UK (ODA)	Nepal-UK Community Forestry Project	7	1,191	110,561	72,351
USA (USAID)	Rapti Integrated Rural Development Project	5	433	53,950	35,768
Australia (AIDAB)	Nepal Australia Community Forestry Project	2	463	51,534	21,552
Switzerland (SDC)	Dolahka Ramechhap Community Forestry Project	2	147	13,430	17,571
Germany (GTZ)	Churia Forestry Project Palpa Development Project	3 1	125	10,486	4,044
Canada (CIDA)	Karnali-Bheri Rural Development Project	1	NA	NA	NA
Asian Dev. Bank (ADB)	National and Leasehold Forestry Development Project	NA	NA	NA	NA
Finland (FINNIDA)	Forest Management and Utilisation Project	5	NA	NA	NA
Denmark (DANIDA)	Community Forestry Training Project Tree Improvement Programme	NA	NA	NA	NA
HMGN	10 *Terai* districts and Palpa	11	340	45,505	17,617
Total			6,730	710,292	450,523

Source: DOF (1994); CPFD (1996); CPFD FUG Database (1998)

United Mission to Nepal (funded by SIDA, Sweden); Action Aid-Nepal (UK and Spain); Ford Foundation; World Neighbours; CARE Nepal; OXFAM; Plan International and so on. Of the 68 different international agencies supporting the forestry programme, over half have a community forestry component (Tinker 1994). HMGN's commitment towards 'decentralization' and 'participation' have become the key preconditions for donor support.

However, despite the heavy assistance of donor organizations over a 10-year period, only 450,523 ha of national forest, which come to only 8.1 per cent of the total forest area, has been handed over to 6,730 Forest User Groups (see Table 5.5). Similarly, only 1,936 ha of national forest are placed under active management, only 0.3 per cent of the potential state-managed forest and only negligible area (299 ha) is handed over as a leasehold forest (CPFD 1996).

This figure clearly shows that the real implementation of community forestry policies is restricted to relatively small areas in which large investments of donor funds have been made.

Donors do not operate in vacuum. They are influenced by development approaches, these have already been discussed in section 2.2 (also see Table 2.1) and carry out their mission according to the policy of their respective home office. These donor agencies are certainly aware of the very real problems facing the poorer segments of society in developing

countries, and some of them are genuinely trying to solve them. But the style or approach of development, the rhetoric, and the fads all bear the cultural imprint of the West (Stone 1989).

It is evident that community forestry policy is a donor-driven policy. Donor agencies have pursued the government to institute changes that go far beyond the capacity of national government using internally generated resources for programme implementation, and that exceed the ability and will of individuals within the organization to change. In other words, the initiative for community forestry policy has not come from the government itself. It is therefore doubtful that this will continue once donors withdraw their financial and technical support. One of the reasons why community forestry in the *Terai* is not a priority for a DFO is because of the fact that there is no donor funding.

It appears that policy is formulated in such a way that there will always be a need for donors to implement it. Changes at the government organization and the local level are being attempted without realising that change is first needed in the wider context within which social organizations, such as government and community organizations, operate.

Rural Nepalese society operates through principles of hierarchy, action through personal relationships, and social networks. It is through personal, hierarchical, interdependent linkages that goods and services are negotiated and exchanged. The problem is that 'development' is perceived to stem from 'outside', from an external world of power and resources within which disadvantaged groups of people have no meaningful personal connections. The vast majority of villagers, and particularly those lower in caste, wealth, and education, perceive that they lack the ability to establish meaningful connections with this external world. In contrast, some powerful groups of people and individuals see the opportunity in community forestry and other donor funded projects to forge new connections with the outside world for their personal benefit.

5.5. Policy Impact

The official claim is that the forestry policy in Nepal is timely, self-initiated, and that the current donor-sponsored programme is a success (CPFD 1991; DOF officials, personal communication). This is borne out by improvements in the quality of community forests following their hand over to the users' groups. The following brief review of evaluation reports of some of Nepal's forestry sector projects implemented thus far provides some insights into the socio-environmental impact of HMGN's forest related policies.

5.5.1 Nepal-Australia Community Forestry Project (NACFP)

The NACFP, started in 1978, covers the two districts of Sindhu Palchowk and Kabhre Palanchowk in central Nepal, immediately to the east and north-east of the Kathmandu Valley. The primary objective of the project has been to provide assistance to the Nepalese Government in the Forestry Sector in order to promote physical development, including plantation and nursery establishment, erosion control works, and management of natural forest resources and to provide significant social and economic benefits through employment and institutional strengthening in the Forestry Sector.

The overall conclusion of the review of environmental issues associated with the activities of the NACFP carried out by a consultancy, EDAW (Aust) Pty Ltd, in 1994 was that the NACFP has resulted in substantial environmental benefits by playing a major role in reversing the process of forest degradation over a substantial

proportion of the Central Region of Nepal (EDAW 1994).

EDAW report states that "*in addition to establishing 17,600 ha of plantations (mainly indigenous pine species) since 1978 and 1,200 ha before 1978, the Project has also facilitated the introduction of sustainable forest management over an additional 13,000 ha of native forest and shrubland. Equally important has been the Project's principal role in the development and implementation of user-based community forestry through technical and institutional development assistance as well as training DOF staff and advising User Groups*" (*ibid*, 3).

In the project area, many significant changes in land use pattern, soil resources, water resources, vegetable resources, wildlife resources, and scenic resources have occurred between 1978 and 1992, most of the changes have resulted directly from the NACFP activities (*ibid*, 8).

The report gives a comparison of land-use patterns in eight sample areas using aerial photo interpretation and ground checking. This revealed that there are significant changes in land uses between 1978 and 1992. For example, there was a large reduction in the area of grassland and degraded shrubland, which has been converted to plantation, native forest or dense shrubland. In most situations pine plantations act as a nurse crop that allows native broadleaved species to regenerate on highly degraded sites. The diversity of plant species has increased after the establishment of protection and regeneration of native forests. Wildlife habitat resources have been substantially increased in more than 13,000 ha of native forest and shrubland managed under User-based Community Management Systems, and have improved scenic resources particularly significant in those areas visible from the main trekking route into Langtang National Park and from the Arniko Highway running from Kathmandu to the border with Tibet. Effective management of areas of shrublands, implemented through the NACFP, has greatly increased the productivity of fodder and firewood species. In addition, there is extensive planting and natural regeneration of trees (particularly fodder trees) on private land.

In Nepal, surface erosion and localised land slips are strongly dependent on land use and vegetation cover. The report claims that the establishment of 17,600 ha of plantation since 1978 on previously degraded and generally eroding areas, combined with erosion control works and improved management of 13,000 ha of forest and shrubland, have been estimated to have reduced the annual volume of top-soil lost due to surface erosion by an amount which is equivalent to the topsoil resources of about 2,000 ha of agricultural land in central Nepal (*ibid*, 5). Similarly, harvesting of green leaves (fodder) and ground litter from forests is transferring a large proportion of the nutrient and organic resources from forests to cultivated agricultural land. The long-term impact on forest soil nutrient levels and associated productivity is unknown, therefore needs a field-based empirical research.

Establishment of plantations on degraded land and regeneration of native forests shrublands generally reduces the volume of surface runoff (Carson 1985). It is reported that, in NACFP area, erosion and local flooding in plantation area have been reduced while at the same time increasing groundwater resources and dry weather flows in adjoining streams. Similarly, establishment of water supply network to plant nurseries has provided drinking water supplies to more than 100 villages throughout the project area.

5.5.2 Community Forestry Development Project (CFDP)

The World Bank/FAO/UNDP-funded Community Forestry Development Project

(CFDP) was started in 1980 with the main purpose to provide technical assistance to HMGN. The project was implemented during a five-year period in 29 hill districts with the establishment of 12,000 ha PF, the management of 40,000 ha PPF and the distribution of 900,000 seedlings for private planting. In addition, research and development of more efficient wood-fuel using stoves was expected to lead to the introduction of 15,000 improved stoves (CFDP 1983). The project envisaged spending US$ 17 million over the five years (1980-85). Since then, the project has continued over the remaining years till now in three phases. In the beginning the project focussed on establishing nurseries in the hills and later to the maximisation of biomass output from plantations. In the first phase, for example, the project focussed on rapid reforestation of the denuded hills, with priority given to close collaboration between the forest service and the local population. The focus of phase III, however, was to mobilise people and resources in the hill districts to establish a forest management system that would conserve and expand the forest resources needed to sustain traditional farming systems and livelihoods in the hills (CFDP 1995, 20).

Officially, it was claimed that the project's progress at the end of the first two years and in the following year throughout was very successful. A rosy picture presented in mid-term Project Evaluation Report, for example, stated that:

> *"overall progress of the project towards meeting its objectives has been highly satisfactory. The principal field activities of establishing community plantations and distributing free tree seedlings has gone extremely well. Targets for the number of nurseries constructed and numbers of Panchayats involved have met. Survival counts of previous year's plantations show a reasonable 70 per cent rate of survival. People are interested in the programme throughout the country and their knowledge of its components has considerably increased in project Panchayats. ... low-cost stoves, saving one-third of the wood fuel used have been developed and successfully introduced ..." (CFDP 1983, 20).*

In addition, the accomplishment of the project was measured in terms of money spent and physical target achieved, and it was said that the project was a real success. For example, the Project Annual Report stated that "*almost all of the money allotted for field activities was spent and most of the percentage rates of target achievement were satisfactory*" (CFDP 1984, 42). "*In sum, the progress achieved during 1983-84 demonstrates that the project is able to successfully expand its activities with improved achievement rates*" (CPFD 1985, 39).

Another rosy picture of the overall performance of the project was shown in the Annual Report of the fiscal year 1984/85, the last year of phase I, in this way: "*Community forestry is now being carried out in 494 Panchayats in 29 districts in the hills of Nepal. This represents 145 per cent of the originally set target. Over 12,000 ha have been planted during these five years which is 77 per cent of the original target. In total 2,447,465 seedlings have been distributed for private plantings: 271 per cent of the original target for five years of operation*" (CPFD 1986, 42).

In contrary to this success story, Karmacharya (1987), however, found that, until 1987, only 36,376 ha of forest land was transferred to the *Panchayat* of the target of 1.83 million ha. It was shown that although more people were taking more seedlings, they were not getting better at looking after them. More PF and PPF

planting took place each year but plantation surveys show that many improvements were still needed. Stove surveys show that the rate of use after one year was not improving as the programme expanded. The factors, mostly the same 'escape routes', such as old stories of administrative incapability: late budget release, untimely transfers and late replacements, manpower shortage, insufficient planning and supervision, and difficult transport and communication, were shown as the project's bottlenecks.

Eventually, the project had to shift its attention from a purely technical towards a more social one. In theory, Rangers were supposed to be reoriented towards their social role and *to advise* (not to control or dictate) forest users in the preparation of groups' forest management plan commonly known as the Operational Plan (OP). However, in practice, the OP were often written by forest rangers to reflect their own perceptions of local needs and then merely presented for endorsement to the committees – which are often dominated by local political leaders. In public meetings the actual forest users, the majority of them women, did not voice their needs. The tree selected for reforestation was often pine, which is hardly and useful for timber but does not meet local fodder needs (Hausler 1993). Many forest committees which had been formed by the CFDP in top down fashion were inactive because they were dominated by local political leaders, not actual forest users. In some cases alliances between forest rangers and local leaders hampered the flow of information and funds to the forest users (*ibid*, 89).

5.5.3 Dolakha Ramechhap Community Forestry Development Project (DRCFDP)

The DRCFDP was an extension of a 15-year Integrated Hill Development Project (IHDP) and was operating during the period of 1991-96. Its aim was "*to improve the access to and availability of forest products for local people on a sustainable basis.*"

The project had expected that the trend of decreasing forest productivity would be reversed as a result of the process of community forestry. In terms of positive externalities the project document mentions improved watershed conditions, improved farm productivity, reduced rate of decrease in soil productivity, more income generation from harvesting and sale of forest products, reduced timber imports, and perhaps even export of timber products from the district. It was also expected that project activities would make more disposable time available to the local population for other activities. These developments would contribute to a reduced financial and material dependency of the local population to remittances and support from outside the project districts.

Biological and social sustainability are seen as essential for improved access to and availability of forest products which the local population could market regionally or nationally. Such sustainability was to be promoted through the improvement of the institutional capability of the local population and by developing the capacity of the District Forest Offices (SDC 1996, 5).

The project aims at the development of forest resources through plantations, natural regeneration, and shrubland management.

The project claims that it has made considerable efforts and some progress in the direction of biological and social sustainability. For example, the activities of the project have led to the protection of natural forests under FUGs leading to improved natural regeneration of tree species, and there is a trend of increasing

interest of FUGs in diversifying the species' composition of their forests. This has contributed to an improvement in the biodiversity of the area (SDC 1996, 11). However, there is very little information on the degree of change in soil productivity or on the commercial utilisation of forest products. In addition, the Project Evaluation Report states that there are not enough CFUGs that are presently being reached to harvest forest products for commercial purposes and that the group formation, group strengthening, and forest development activities at the community level are not being promoted sufficiently intensively nor with sufficient commitment to make the average CFUG sustainable without project support - in the long run.

The project, however, has been able to make satisfactory progress in relation to some of the quantitative targets set out in the project document in terms of the number of user groups formed, area of forest handed over, and the number of households covered. However there are questions about quality of the user groups because of numerous shortcomings such as in empowering women and the poor to build and sustain their confidence, so that they can participate effectively in decision-making and raising awareness of people to assert their legal rights (SDC 1996, 6).

The impact of the project on socioeconomic disparities appears to be ambiguous. Most CFUGs are controlled by elite groups that do not give adequate consideration to the needs of members of the socioeconomically deprived sections of the community (SDC 1996, 36).

The project, however, has made a good start in rectifying the situation of gender inequality by immediately starting the implementation of some of the recommendations of the Gender Analysis (see SDC 1995).

The Project Document envisages support for biological stabilisation of unstable slopes where the local population voices a need for it and where the population agrees through an improved management plan to restrict use of the affected areas as far as possible. However, the project has not initiated any practical action at the field level in this component (SDC 1996, 10).

The project aims at the development of forest resources through plantations, natural regeneration, and shrubland management. Most of the forest development activities are supposed to be undertaken by the users themselves. This should be undertaken with full participation of the community under the technical guidance and facilitation of a member of the District Forest Office, mostly the Ranger. The project had set plantation and enrichment plantation targets of 2,000 and 2,700 ha respectively. A total of 1,128 ha has been planted, and about 133 FUGs were formed, 12,500 ha of forest land were handed over to 15,700 households (CPFD 1996; SDC 1996, 8), which comes about 10 per cent of the total forest area in two districts. The average forest holding per household is only 0.8 ha which may not be enough to make the group self-sufficient in forest products unless the forest is actively managed and the productivity can be optimised. However no such forest management activities in natural forests were applied, and productive potential of the forest is not utilised. This will have a direct adverse effect on the condition of forest and on the fulfillment of users' basic needs for forest products in a sustainable way.

5.5.4 Nepal-UK Community Forestry Project

In 1977, an integrated rural development project of thirteen sectoral programmes was started which was supported by the ODA in Koshi Hills area in the Eastern Region (four districts - Dhankuta, Bhojpur, Sankhuwasabha and Terhathum) under the

umbrella of the Koshi Hill Area Rural Development Project (KHARDEP). Under different names and phases, community forestry projects in the Koshi Hills ran until July 1993. The project concentrated on the establishment of village nurseries for plantations on common land and some private tree planting and in later years in the establishment of Forest User Groups. In 1993, a new 10 million $ project began called the Nepal-UK Community Forestry Project (NUKCFP) which embraced both the existing Koshi Hills' Community Forestry Programmes in four districts of Koshi Zone and three districts in the Dhaulagiri Zone. The project supports the government of Nepal's sectoral policy of transferring targetted forest from state to community management and utilisation. This is done through the development of the community forestry capability within the DOF and through reorienting forest staff towards a service role to communities. The main objectives of the project are: (i) to meet the needs of hill communities for tree products on a sustained yield basis (ii) to promote popular participation of women and poor in decision-making. Both of these objectives are to be achieved through transfer of forest usufruct rights from the state to Community User Groups (FDP 1995).

Study on socioenvironmental impact of the NUKCFP shows that "*there is a documentable improvement in forest quality within NUKCFP area. It confirms a widely held conviction that such a trend is occurring throughout Nepal* (Wysocki 1998, 1). The comparison between the Baseline Forest Resource Assessment data in 1994 and forest inventory in 1997 revealed that there is an improvement in the physical condition of the forests, User Groups have been active in forest management, and the flow of forest products to users has been high. For example, in 1994, only 33 per cent FUGs were involved in active forest management, whereas, in 1997, this has increased to 57 per cent, the community forests are put under active management. It is also found that no FUGs are actually harvesting any forest product at excessive levels. Instead, FUGs are harvesting conservatively. For example, in NUKCFP area 87 per cent of FUGs harvesting fuelwood, and 43 per cent of FUGs harvesting timber, at a lower level than the productive capacity of the forest (Branney and Yadav 1987).

Although the environmental impact of the NUKCFP project seems positive, there is little data on distribution pattern of forest products. It is a common practice that the distribution of forest products is done on a basis of equality, not on the basis of equity.

5.5.6 Begnas Tal, Rupa Tal (BTRT) Watershed Management Project

The BTRT Project is a CARE/N-funded watershed management project which aims to stabilise the physical environment and increase the productivity of the project area in Kaski district through sustainable community management of its human and natural resources.

It is reported that the project has been successful in meeting its objectives. The project has provided many lasting benefits to communities of project area, and it has been innovative in integrating community forestry, conservation, bio-engineering, community organization, and extension. In an evaluation, it is stated that the project has become a prototype for community-based watershed management, and many aspects of its strategy can be replicated in other watershed management projects (Kayastha *et al.* 1997, i).

5.5.7 The Upper Adhikhola Watershed Management Project

This is the project jointly managed by the Department of Soil Conservation and

CARE/N. The aim of the project is to improve the agricultural productivity and the socioeconomic condition of the inhabitants of the project area through the promotion of sustainable watershed management measures.

The final evaluation report states that the overall performance of the project is satisfactory. A wide array of activities within the natural resource sector are undertaken encompassing production of seedlings, afforestation schemes, private and community plantation, pasture land improvement, natural forest management, planning and implementation, agro-forestry activities, kitchen gardening, and the introduction of improved agricultural varieties. In the project area, active participation of women in user groups and mandatory inclusion of women on the executive committee is found to be effective (Shrestha and Jacobsen 1997).

5.6 Gender Issues

Since the mid-1980s, it has been increasingly recognised at the international and national levels that gender relations internal to development agencies have important impacts on the outcome and achievements of gender development policies and projects (Goetz 1995; Dankleman 1993). Parallel shifts have taken place in the forestry sector, and it has been realised that rural women are the main users of forest products and are usually responsible for collecting fuel, fodder, and water for family survival. Therefore, the gender issue in forestry is high on the agenda and has to be looked at at both community and government organizational level.

Studies on gender issues in community forestry programmes in Nepal have provided some insight into the gender inequality and the exclusion of women in the decision-making process at the community level (see for example, Hobley 1991; Kharel 1993; Tinker 1994; Bhatia *et al.* 1995; Chhetri and Rana 1995). At government organizational level, however, there are very few studies on the absence of women from public services, particularly in the forestry service. It was a completely 'unaddressed' issue until a few years ago. The Nepal forest service, for example, did not start to employ female foresters until 1985, in 1995, on average, only 1.5 per cent of the forest service employees were women and none came from the 'untouchable' caste. The exclusion of women in public service reflects the reality of gender discrimination and social inequality in Nepali society.

It is reported that one of the reasons of poor participation by women in community forestry is due to the lack of female extension workers in the DOF (Bhatia *et al.* 1995). To address this issue, HMGN has made a provision of a 10 per cent quota for women candidates in the Institute of Forestry for ISc. and BSc. courses. Beyond that government has not been able to develop any practical mechanism to operationalise the commitment made in involving women in forestry at government organizational level.

At the community level, HMGN's forest policy, at least in theory, has made a provision of at least 30 per cent of women members on Forest User Committees. However, the agenda of 'participation' is inadequate to address the gender issue. Instead it has served powerfully to camouflage or suppress women's strategic gender interests and other interrelated wider issues of social inequalities.

Gender inequality cannot be seen independently of persistent inequality in society and should be understood in terms of women's lack of independent economic

entitlement and control over all types of resources which are "*associated with a new articulation of production and reproduction*" (Elson 1995, 1852).

Chapter 6
National Parks and Protected Areas

6.1 Wildlife Policy

Nepal's wildlife policy aims to conserve forest ecosystems, wildlife habitats, and genetic resources through the establishment of national parks, wildlife reserves, gene banks, zoos, and botanical gardens (MPFS 1988). Policy claims that the country has taken up its share in preserving representative Himalayan ecosystems, but it also recognises that in the process of establishment of protected areas the local people have lost their traditional sources of forest produce. The idea is to compensate the loss by developing alternative sources.

There are many programme components that are mentioned in the Master Plan for the Forestry Sector 1988. These are as follow.

- Development of infrastructure that blends with nature and character of the protected area
- Building good relationships with people living adjacent to protected areas through:
  - conservation education
  - developing alternative sources of forest products
  - better habitat management
  - paying greater attention to population dynamics
  - better management of visitor use and tourism
  - ensuring the protection of natural and cultural values

To support these thrusts, policy documents state that legislation concerning protected areas and genetic resources will be improved; the Department of National Parks and Wildlife Conservation's management capacity will be strengthened; training and logistical support to field staff will be increased; resource surveys and studies will be conducted; and management plans will be formulated to account for the needs of people in adjacent areas, the proper handling of visitor use, and the preservation of natural and cultural values. Table 6.1 summarises the country's major policies on national parks and protected areas as enshrined in the MPFS and NEPAP.

Table 6.1: **Policies and Action Plans Related to National Parks and Protected Areas**

Policies	Action Plans	Responsible Agencies
Strengthen the capacity of DNPWC to act as the main institution responsible for protected areas	Reassess the role of the army as park protectors to minimise 'people-park' conflicts; develop an alternative protection force	DNPWC, RNA
	Commission a study to resolve the problems of overlapping jurisdiction in protected areas and to recommend a simplified procedure for handling various activities affecting protected area management	DNPWC, MTCA, DOT
Ensure adequate representation of Nepal's major ecosystems in the protected area system	Review the representatives of the existing protected area system	NPC, MFSC, MOA
Involve local people directly in the management of parks	Develop mechanisms for benefit-sharing with people whose livelihoods are adversely affected by parks	DNPWC
	Effectively harness the efforts of NGOs to test and develop appropriate models of park management	DNPWC, NGOs
	Set up a Task Force to prepare guidelines for the development of management plans	DNPWC, NGOs
	Enact and enforce necessary legal and regulatory measures to implement major international treaties and conventions, as well as to control illegal wildlife trade within the country	MFSC
Preserve endemic and endangered species and their habitat	Promote tourism in protected areas, consistent with conservation objectives	MFSC, MTCA
	Identify and take action to protect marshes, wetlands, and water bodies significant to biodiversity conservation	MFSC, MWR, NEA
	Develop management plans to conserve biodiversity, while providing for people's basic needs	DNPWC, NGOs
	Mount a study to assess the status of biological diversity of endemic plants and animals, both terrestrial and aquatic, occurring outside protected areas on farmlands, pastures, rangelands, forests, rivers, lakes, and ponds	MFSC, MOA, NARC
Promote private and public institutions for biological resource inventory and conservation	Collate and disseminate data on biodiversity from various existing databases and establish a national biodiversity database	DNPWC, MFSC, NARC, DOB, TU, NGOs
	Identify and strengthen institutions responsible for research, education, and training in biological resource management	DNPWC, TU, NGOs*

* See Annex 4 for further details on various donor-funded projects
Source: EPC (1993, 40)

Biodiversity conservation is one of the major components of the national parks and wildlife conservation system. The term biodiversity involves a complexity of meanings and levels. Biologists usually consider it from three perspectives, namely, genetic, species, and ecosystem diversity. In this study, biodiversity means species diversity, which refers to the number of species in a site or habitat.

There is growing evidence of the erosion of biodiversity in Nepal. Currently, 26 mammals, nine birds and three reptiles have been legally classified as endangered. It is estimated that ten species of highly valuable timber, six species of fibre, six species of edible fruit trees, four species of traditional medicinal herbs, and some 50 species of little known trees and shrubs would be lost for ever. In addition, the habitat for 200 species of birds, 40 species of mammals, and 20 species of reptiles and amphibians would be severely affected (*ibid*, 36).

HMGN's main efforts in biodiversity conservation have involved an extensive network of national parks and protected areas developed over the past two decades, covering 2,105,100 ha, almost 14 per cent of Nepal's total land area. The protected area network includes eight National Parks, four Wildlife Reserves, three Conservation Areas, one Strict Nature Reserve and one Hunting Reserve.

HMGN's policies on biodiversity conservation include improvement in the relationship between the local communities and park management, demarcation of the core areas inside parks for strict conservation and buffer areas for sustainable resource management, promotion of tourism in conformity with resource conservation and environmental protection, and involvement of the local bodies and private organizations in the preservation and maintenance of natural and cultural heritage resources.

In order to implement the policy, HMGN has developed a legal framework and the following is the legislation related to protected areas.

- The National Parks and Wildlife Conservation Act 2029 (1973), amendment in 1983
- National Parks and Wildlife Conservation Regulations, 2030 (1974), amendment in 2035 (1979), in 2042 (1986), in 1995 (Buffer Zone Management Rules 1995)
- The Wildlife Reserve Regulations 2034 (1978), amendment in 2042 (1986).
- Forest Rules 2051 (1995)

At least in theory, HMGN has realised that long term management of protected areas depends on the cooperation and support of local people and ensuring the economic development of the local communities. The habitation areas surrounding the national parks have been classified as Buffer Zones and a necessary amendment in the National Parks and Wildlife Conservation Act 1973 has been made in National Parks and Wildlife Regulations 1995 for sharing the revenues of a national park with the local communities living within the Buffer Zone.

Apart from the national policies related to protected areas, Nepal, as a state, is a signatory and member of a number of international conventions and organizations related to wildlife and environmental conservation (see Box 6.1).

6.2 The Status of Nepal's Protected Areas

Nepal has established a network of protected areas, since it is recognised to be one of the biologically richest countries in

Box 6.1
INTERNATIONAL CONVENTIONS TO WHICH NEPAL IS A PARTY

- Plant Protection Agreement for Asia and the Pacific Region, State Party in 1965
- UNESCO Man and Biosphere Programme (MAB), State Member in 1974
- IUCN - The World Conservation Union, State Member in 1974
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), State Party in 1975
- World Heritage Convention, State Party in 1978
- World Conservation Strategy, Contributor, 1981
- International Centre for Integrated Mountain Development (ICIMOD), State Member in 1983
- International Tropical Timber Agreement, State Party in 1983
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), State Party in 1987
- Convention on Biological Diversity (ratified in 1993) Signatory in 1992
- WWF Nepal Programme, Signatory in 1993
- South Asian Cooperative Environmental Programme, State Member in 1994
- Framework Convention on Climate Change, Signatory in 1994

Source: DNPWC

the world. The percentage area under protection is also high in comparison with many other countries. With only 0.1 per cent of the world's total area, Nepal contains over two per cent of flowering plants, eight per cent of birds, and four per cent of mammalian species (see Table 6.2).

The National Park and Wildlife Conservation Act 1973 provides for five categories of protected area to help achieve the conservation of ecosystems and genetic resources. As defined in the Act, these are as follow.

- **National Park**: An area set aside for conservation, management, and utilisation of flora and fauna together with the natural environment. There are eight National Parks in the country.
- **Wildlife Reserve**: An area set aside for the conservation of animal and bird resources and their habitat. There are four Wildlife Reserves.
- **Conservation Area**: An area managed for the sustainable development of human and natural resources. There are three Conservation Areas.
- **Strict Nature Reserve**: An area of ecological significance set aside for scientific study. Makalu Barun is the only protected area in Nepal in this category.
- **Hunting Reserve**: An area set aside for the management of animal and bird

Table 6.2: **Size of Nepal's Biodiversity in the Global Context**

Categories of Plants and Animals	No of Species	
	Global	Nepal
Ferns	>10,000	450
Angiosperms	>2,20,000	5,160
Birds	9,881	844
Mammals	4,327	181
Reptiles	6,300	100
Amphibians	4,184	43
Bony fishes	>18,150	185

Source: BPP (1995)

resources for hunting purposes. There is one Hunting Reserve.

In addition, HMGN has designated Sivapuri area near Kathmandu valley as a Protected Watershed and Wildlife Reserve based on the National Park and Wildlife Conservation Act 1973 and the Soil and Watershed Conservation Act 1983.

Table 6.3 shows the list of 16 protected areas (eight national parks, three wildlife reserves, three conservation areas, one watershed and wildlife reserve, and one hunting reserve). In these areas, Nepal contains the habitat of 100 species of mammalian, 850 species of birds, three species of large reptiles, out of which 26 mammalian, nine birds, and three reptile species are listed as totally protected in Nepal (MPFS 1988).

There are hundreds of villages lying around the protected areas. People living in the vicinity of the park are very poor and entirely dependent on the land and forests in the area. Villages in this region are subsistence economies based primarily on agriculture and secondarily on the collection and consumption of different forest products. Fuelwood and varieties of construction wood are collected on a regular basis as an important income generating activity. Several types of grass are used by local populations from the park area on a regular basis. Forest plants and herbs also serve as important sources of medicine. Thus the establishment of the Park has profound implications for their lives. Villagers have traditionally used forests of protected areas, although the forestland of the park is under government ownership. Although local villagers are highly dependent on resources, their scale of influence in park management is limited. Instead, since the establishment of protected areas, many villagers have been prosecuted for obtaining forest and wildlife resources from within its boundaries. In 1996/97, for example, eight people were prosecuted and put into jail, and two were killed by wild animals (DNPWC 1997). Many studies show that there are many conflicts between park authorities and local populations and damage caused by wild animals to local populations adjacent to protected areas is very common (see for example, Mueller-Boeker [1991]; Sharma [1991]; Wells and Hannan [1992];, Heinen [1993]; Nepal and Weber [1993]; Studsrod and Wegge [1995]; Shrestha [1996]).

However, to resolve the conflicts between the adjoining communities and the park authorities, and based on the National Parks and Wildlife Regulations 1995, some areas of five National Parks have been declared buffer zones for protected areas (see Section 6.4).

6.3 Policy Implementation

There are various projects that are working in development, management, extension, and research in protected areas. The major projects are as follow (also see Annex 4).

- Buffer Zone Management Programme
- Global Environment Facility (GEF)
  - Makalu Barun National Park and Conservation Area Project
  - National Biodiversity Action Plan
  - King Mahendra Trust for Nature Conservation (Training Project)
  - Biodiversity Conservation Project in Nepal
- Parks and People Project (PPP)
- Bardia Integrated Conservation Project (BICP)
- WWF/N supported Institutional Strengthening programmes
- Black Buck Conservation Project
- Musk Deer Research Project
- Gharial Breeding Centre
- Kanchanjangha Protected Area Project
- Northern Mountains Conservation Project (NMCP)

Table 6.3: **National Parks and Wildlife Reserves in Nepal**

Name and Year of Establishment	Physiographic Region/Location	Special Feature	Area (sq. km.)
Royal Chitwan National Park (NP), 1973	*Terai*-Siwalik. Sub-tropical Inner *Terai* lowlands of South-Central Nepal. Chitwan, Makawanpur and Parsa districts	World heritage known for one horned Rhino	932
Sagarmatha NP, 1976	High Mountain. Khumbu region of Nepal. The park includes the highest peak in the world. Solukhumbu district	World's highest peak world heritage site, musk deer	1,148
Royal Bardia NP, 1976	*Terai*-Siwalik. Mid-far Western Terai. Bardia district	Dense Sal forest, elephant	968
Langtang NP, 1976	High Mountain. Central Himalaya. Rasuwa district	A great variety of vegetation types within a short aerial distance, Red Panda	1,710
Rara NP, 1976	High Mountain. NorthWest. Mugu and Jumla district	The largest lake in Nepal	106
Khaptad NP, 1984	Mid-mountain region of Far-Western Nepal. Bajhang, Bajura, Doti and Achham districts	Renowned for medicinal plants, rolling plateau of extensive grasslands	255
Shey-Phoksundo NP, 1984	High Mountain region of Western Nepal. Dolpa and Mugu districts	Highest waterfall in Nepal, snow leopard	3,555
Makalu-Barun NP, 1992	High Mountain region of Eastern Nepal. Situated in the Sankhuwasabha and Solukhumbu districts. Bordered by the Arun River on the east, Mt. Everest on the west.	Snow leopard and Red Panda	1,500
Makalu-Barun Conservation Area (CA), 1992		Area managed to fulfill the objectives of a buffer zone	830
Annapurna CA, 1992	High and Middle Mountain region of mid west Nepal. Situated in Kaski, Lamjung, Myagdi, Mustang and Manang district.	World's deepest gorge, the Kali Gandaki, most scenic landscape	7,629
Kanchenjunga CA	High mountain region of Eastern Nepal. Bordered by Sikkim and Tibet.	NA	NA
KoshiTappu Wildlife Reserve (WR), 1976	In the floodplains of the *Terai* of Sapta-Koshi in Saptari and Sunsari districts of eastern Nepal.	Known for wild buffalo	175
Parsa WR, 1984	Siwalik hills of central Nepal. Occupies parts of Chitwan, Makawanpur, Parsa, and Bara districts.	Known for tiger habitat	499
Royal Shukla Phanta WR, 1977	In the *Terai* region of Far-western Nepal in Kanchanpur district.	Largest herd of swamp deer	305
Shivapuri Watershed and National Park, 1984	Mid-mountain region near Kathmandu Valley. Occupies parts of Kathmandu, Nuwakot and Sindhupalanchok district.	Watershed area for Kathmandu city	144
Dhor Patan Hunting Reserve (HR), 1983	Mid-western high mountain. Adjoins Rukum, Maygdi and Baglung district in the Dhaulagiri Himal range.	Known for blue sheep.	1,325

Source: DNPWC (1998)

Despite the rhetoric of buffer zone concepts, the chief activities of national park management in Nepal have been limited to demarcation of boundaries, providing visitor permit licences, penalising park offenders, and protecting flora and fauna. The Government spends considerable sums of money in the deploying the army for policing and administration. Increasing numbers of army personnel, radios, weapons, vehicles and watch towers are sought by park management. This exerts considerable financial pressure on the Government, obliging it to look for increased foreign assistance. In 1996/97 the annual expenditure of the DNPWC was NRs 88.4 million. Ironically, this expenditure is being used to keep people out of the parks, people who could have been their best protectors. The interrelated socioeconomic aspects, particularly the role that national parks play in supporting local livelihood systems, have been neglected in park management.

Since the local people living in and around the park are seen as the principal 'threat' to forests and wildlife, the major concern of park authorities in Nepal has been to curtail the prevailing level of 'human interference'. People have been displaced from their settlements or denied access to resources such as the fuelwood and food products within parks. Often it has meant increased economic insecurity for many social groups and generated extreme antipathy towards official conservation measures. Furthermore, government and park authorities all seem to overlook the interrelated social costs of the expansion of national parks and protected areas. For example, the result of trying to maintain tight control over forest resources in parks is that local people in adjacent areas become compelled to overuse land and other natural resources existing outside forest boundaries. The community development programmes launched by the Park and People Project (PPP) are so small that they cannot compensate for local people's daily needs for forest products. In fact, as a result of this situation, more land may become degraded rather than less (Ghimire 1994).

Even in the Park and People Project area a typical perception that has been found among park officials is that local people are involved in illegal exploitation of forests and poaching due to 'the lack of environmental awareness driven by poverty'. This opinion seems to have found favour with government organizations, despite evidence that local people are aware of the impacts of environmental degradation, and that it is their lack of control over natural resources that decreases their incentive to manage the forests sustainably.

Conservation practice in developing countries, including Nepal, is still aimed at key species by neglecting local people's needs. Dudley (1992) describes this practice as merely a glamorous contemporary clothing to neo-colonial conservation ideologies and practice. Pimbert (1993) acknowledges that most of the species important for the maintenance of ecological processes (the inconspicuous organisms) are located in human-managed ecosystems such as agricultural and forestry land, which therefore lie outside protected areas, with (presumably) greater species' diversity.

As in other developing countries, protected areas in Nepal are established primarily for the protection of large animals. It is also evident from the fact that most of the studies and research are being carried out on the habitat and behaviour of large animals (for a detailed bibliography see Maskey and Rajbhandari 1997). However, in recent years, the preservation of biological diversity and the maintenance of ecological processes are also seen as crucial functions of the national park areas. The role of national parks in developing

tourism, particularly with a view to generating foreign exchange earnings and providing income and employment opportunities for local people, is also commonly emphasised. There are an increasing number of tourists every year (see Table 6.4). However, the amount of benefits generated by tourism at the local level is negligible (Kadt 1976).

Local residents who live in the vicinity of protected areas are the important group of people affected by conservation measures, because of their geographic proximity, cultural and historical associations, and the likelihood that they will continue to live in the area, despite the fact that their livelihood is adversely affected following the establishment of protected areas. There are conflicts between park authorities and local populations.

Table 6.4: **Number of Tourists Visiting Nepal's Protected Areas**

Year	No of Tourists
1994	83,024
1995	90,086
1996	1,11,211
1997	1,52,252

Source: DNPWR (1997)

6.4 Various Stakeholders and Park Management

There are many interest groups that are directly or indirectly involved in the management of protected areas. Each group has contested interests in biodiversity conservation. Table 6.5, for example, outlines the major interests involved in managing biodiversity in protected areas. It identifies groups and their main areas of interest and influence, relating their interest

Table 6.5: **Interest Groups and Stakeholder in Protected Areas**

Group	Interests/Aims	Means
Local people	Livelihood maintenance; use of protected areas for subsistence needs, minor trading of products; thatch, fodder, building materials, fuel, wild foods, plant medicines, hunting, and fishing	Subsistence farming, minor marketing; legal and illegal extraction of resources from protected areas
Migrant farmers	Livelihood maintenance; use of protected areas for subsistence needs: thatch, fodder, fuel, building material	Cash farming plus subsistence; legal and illegal extraction of products from protected areas
Local entrepreneurs	Profit; commercial; range of small enterprises - tourist and non-tourist based	Small business enterprises, buying and selling to tourists
Tourist concessions	Profit commercial; expansion; some revenue may be earned overseas; control tourists staying in protected areas overnight	Tourism revenues; concessions from government
Government conservation agencies	Conserving wildlife and facilitating tourist development	Enforcing park boundaries; imposing fines
Conservation pressure groups	Conserving biodiversity but with considerations for livelihoods	Lobbying, publicity
International conservation groups	Conserving biodiversity; limited interests in human welfare	International legislation, lobbying

Source: Adapted from Brown (1998)

in biodiversity to the types of values that they capture or gather from biological resources of the park. For each group, this analysis demonstrates the means by which the group acts in its own interests.

6.5 Policy Impact

The social and economic impacts of conservation on local households and institutional impacts on government organization are of vital consideration in evaluating the role of protected areas in the lives of local populations. In many places, the park's creation has resulted in households losing access to certain areas of land they previously used for obtaining forest products (Ghimire 1994). At the government organization level, despite Nepal being a signatory to a number of international conventions on which wildlife policies are based, functioning of the bureaucracy is as usual. The actions of National Parks and Wildlife Officials have been according to conventional bureaucratic routine, norms, and values. Project documents are generally prepared by foreign consultants who do not know the sociocultural context and many legislations are often used as showcases.

As an illustration, this section briefly reviews the impacts of two projects implemented in the areas of national parks and conservation areas. This review is based on the documentation available from secondary sources,

6.5.1 Annapurna Conservation Area Project

ACAP is an integrated conservation development project that attempts to link biodiversity conservation in protected areas with social and economic development in surrounding communities (over 40 thousand mostly poor rural farmers). The aim of the project is to protect and conserve nature and natural resources through integrated community and tourism management. It is being implemented by the King Mahendra Trust for Nature Conservation (KMTNC), a Nepali NGO established through an act of parliament.

Over 30 thousand foreign trekkers visit this area each year, and this has led to the development of hundreds of lodges and tea shops along the trails. Where tourism has become important to the local economy, it has also led to serious environmental problems. The forests have been cleared to provide fuelwood for cooking and heating for visitors. Expanding agriculture, growing water pollution, poor sanitation, and increased litter on trekking routes are the major environmental impacts resulting from the establishment of the conservation area.

The project claims to have made significant progress in motivating local populations to participate in natural resource management decisions in order to mitigate the adverse environmental impacts mentioned above (KMTNC 1997).

As Brandon and Wells (1992) report, the project has been able to generate significant amounts of revenue from tourism. However, it has not been distributed evenly among the local communities. The principal beneficiaries have been the lodge owners and tourism-related business entrepreneurs.

6.5.2 Park and People Project (PPP)

The main aim of the project is to enhance the capacity of the local communities and the DNPWC to jointly manage the five *Terai* National Parks and their buffer zones and to improve the socioeconomic conditions of the people living in the adjoining VDCs.

Royal Chitwan National Park (RCNP), Royal Bardia National Park (RBNP), Koshi Tappu Wildlife Reserve (KTWR), Parsa

Wildlife Reserve (PWR), and Royal Shukla Phanta Wildlife Reserve (RSWR) have been declared the Buffer Zones for the protected areas (see Table 6.6).

The UNDP-funded Park-People Project (PPP) has been implementing various activities in the parks and surrounding buffer zones, and these activities have broadly been categorised as buffer zone development, park management, and eco-tourism (DNPWC/UNDP 1996). By 1997, the project has covered 43 VDCs out of 91 VDCs in the buffer zone, covering about 86,000 people. The main objectives of the project are broadly divided into two.

- To enhance the capacity of the Department's staff and local communities around the protected areas to ensure effective and sustainable management of parks and buffer zones
- To facilitate local people's initiatives in socioeconomic improvement (PPP 1998).

The project implementation strategy includes organizing rural communities into User Groups, enhancing their skills and providing opportunities for undertaking income-generation activities, community savings, and access to credit. The PPP (1998) claims that many local communities have benefitted from its activities in community development, income generation, and community forestry. However it is early to make any conclusions about its long-term socio-environmental impact.

Table 6.6: **Buffer Zone in Nepal's Protected Areas (in sq. km.) (by December 1997)**

Protected Areas	Total Area	Area in the Buffer Zone	No. of VDCs in the Buffer Zone	VDCs Covered by PPP	Pop. in Buffer Zone ('000)	PPP Beneficiaries ('000)
RCNP	932	750	34	14	242	27
RBNP	968	460	16	6	69	10
KTWR	175	136	13	9	172	12
PWR	499	367	17	5	126	10
RSWR	155	153	11	9	74	27
Total	2729	1866 (68%)	91	43 (47%)	683	86 (13%)

Source: PPP (1998, 8)

Chapter 7
Decentralization

7.1 Historical Context

7.1.1 Prior to 1951

History of local governance dates back to the Kirat dynasty (around 3000 years ago) in Nepal. After the Kirat dynasty, during the Lichhavi period (3rd century AD), the *Panchali* system of local governance was regarded as a supreme system and was practised. After the integration of modern Nepal in 1768, during the reign of King Prithvinarayan Shah, *panchayat*(s) (local governing bodies) were formed at various levels. *Panchayat*(s) were regarded as useful for judicious as well as developmental work at the grass roots' level. In 1919, municipalities were established in urban areas and in 1926, the establishment of assemblies of wise persons at village level (*kachahari*) took place, which was progress towards autonomy. The Village *Panchayat* Act of 1948 and Village Development Act of 1950 can also be perceived as steps towards paving the way for local government.

7.1.2 Post-1951 Period

A multiparty parliamentary democracy was introduced in Nepal in 1951. Prior to it, for 104 years there was an oligarchic Rana regime that was a highly centralized system of governance. Local entities were simply involved in maintaining law and order, and collecting taxes.

A partyless *Panchayat* system was introduced in 1962 by King Mahendra. Decentralization appeared in the preamble of the *Panchayat* constitution as the basis of *Panchayat* administration. The following is a chronology of steps towards decentralization during the Panchayat period.

Formulation of high-level administrative power decentralization commission, 1963

In little more than a year, the commission submitted a report to the government that suggested decentralization of powers to enable the village *panchayat* to act as the village cabinet, the village assembly as the legislative body, the district assembly as a legislative body, the district *panchayat* as the district cabinet and the executive members of the village, town and district to hold the portfolios of agriculture, health, education, irrigation, forest, and so on.

Besides these responsibilities, the commission also suggested the government give rights to the village and district *panchayats* for maintaining law and order and exerting limited judicial powers.

Decentralization Plan, 1965

This plan was prepared to implement the commission's (1963) report in three phases within 12 years. In the first phase it was suggested that Nepal would be organized into 75 districts with a Chief District Officer (CDO) as the administrative and development head of each district. Nepal would be divided into 14 zones with 12 zonal commissioners. These commissioners would be mainly responsible for maintaining law and order within the zone. In the second phase, the task was to prepare trained manpower for planning and implementation. The final phase was aimed at devolving all responsibilities of local and district development of local *panchayat*(s). A separate decentralization unit at the centre was envisaged to implement and monitor the plan.

Local Administration Act 1965

HMGN through the promulgation of the Local Administration Act Ordinance 1965 established 75 districts and 14 zones. The CDOs and Zonal Commission were appointed and the decentralization plan was introduced.

Decentralization Committee, 1967

The HMGN formed a 21-member decentralization committee in September 1967 to review and make suggestions to the government on matters related to delegation of power to district *panchayat*(s), the capacity of district and village *panchayat*(s), the relationship between the CDO and the district *panchayat*, and the provision of authority to maintain law and order in the district. This committee suggested greater power to the CDOs–including exercise of power related to maintaining law and order.

Administrative Reform Commission, 1968

The commission in its three consecutive reports suggested to the government that a *Panchayat* Development Officer (PDO) should be the secretary of the district *panchayat* office not the CDO, and the task of the CDO should be limited to maintaining law and order. It also suggested that all policy and supervision matters should be within the central government and all development-related works at the district level should be implemented with the assistance of a district committee chaired by the District Panchayat Chairman and member of the National Panchayat and one of its members. The PDO would serve as the District *Panchayat* Secretary.

Decentralization Committee, 1969

HMGN formed a 15-person decentralization committee to submit practical suggestions for the successful implementation of decentralization plan of 1965. It suggested that Zonal Commissioners be the chief administrators of the zone; the district assembly be made a legislative body of the district and the CDO made secretary of the district assembly giving all executive power to the district *panchayat*. The need for giving all district-related powers to the district *panchayat* and assembly and making the CDO entirely responsible for programme implementation was also suggested.

Local Administration Ordinance 1971

This ordinance relieved the CDOs from all development tasks as the secretary of the district *panchayat*, which became the responsibility of the Local Development Officer (LDO). The CDO was entrusted with the task of maintaining law and order.

District Administration Plan, 1974

This plan initiated an integrated district administration plan. All district-level offices were put under the CDO and the district *panchayat*(s) were given the right to take decisions within the policies, rules, and guidelines made by HMGN. This plan also made provision for local multipurpose development workers and a village *panchayat* secretary.

Administrative Reforms' Commission, 1975

This commission was formed in 1975. It made various suggestions for the 'true' implementation of decentralization. It also suggested effective enforcement of the decentralization plan.

Integrated *Panchayat* Development, 1979

This outline was introduced when the district administration plan of 1974 was declared a failure. The means and resources required for an integrated development plan were to be provided by the centre. This also had a provision of a coordination committee chaired by the Prime Minister, a committee under the Panchayat minister and other coordination committees at district regional, zonal district, and service central levels.

Working Paper on Local Development Ministry, 1980

After the establishment of the Local Development Ministry, a working paper was prepared that recommended the formation of user committees to formulate and implement local development plans. The LDO acted as the secretary of the district *panchayat* and also coordinated all district-level development plans

Decentralization Subcommittee, 1981

This was formed as a follow-up to the 1979 referendum, which went in favour of the *Panchayat* system. The purpose was to adopt decentralization as an important principle of the *Panchayat* system. This committee also identified the following main reasons for the failures of the decentralization plan during 20 years of *Panchayat* rules.

- Lack of uniform perspective of view on decentralization
- Lack of implementation
- Lack of regularity in decentralization efforts
- Lack of a perspective of decentralization as a strategy of national development
- Limit of decentralization only to the executive boundary

The committee suggested a procedure for bottom-up planning, and a review and modification of all existing laws conflicting with the Decentralization Act.

High-level Decentralization Subcommittee, 1982

HMGN formed a nine-member, high-level decentralization subcommittee in 1982 under the chairmanship of the *Panchayat* Policy and Investigation Committee. It made rules and regulations to implement a decentralization plan. Amendments to the Decentralization Act were proposed, and again the Decentralization Act and rules and regulations were enforced.

7.2 Contemporary Policy on Decentralization

7.2.1 Constitution of Nepal 1991

The people's movement of 1990 overthrew the 30-year *Panchayat* system in Nepal and restored parliamentary democracy. The Constitution of Nepal 1991 embodied the principle that the main responsibility of the state is to establish a condition in which the people have the opportunity to be involved to the maximum level in various

stages of administration through the process of decentralization, thereby strengthening multiparty democracy.

7.2.2 Administrative Reforms' Commission, 1992

A high-level administrative reforms' commission was formed in line with directives of the Constitution of Nepal 1991 was formed in order to take necessary measures to make administration more responsive to people's aspirations. The commission recommended devolution of various sectional powers to local authorities such as village, town, and district development committees.

7.2.3 Local Authorities' Acts 1992

The Village Development Act, Municipality Act, and District Development Committee Act were made separately in order to expedite local development through maximum participation of people at the grass roots' level in the task of self-governance and development work and development of local leadership for institutional development of multiparty democracy. However, progress was not seen as satisfactory.

7.2.4 Eighth and Ninth Five-Year Plans (1992-1997; 1998-2003)

Both of these plans mentioned decentralization as the main vehicle for the development of democracy in Nepal. They also ensure appropriate training for local people in skills that enable them to run their affairs by themselves.

7.2.5 Decentralization Action Plan, 1995

HMGN selected 250 VDCs in the first phase for the implementation of this plan. This plan decentralizes power to the village. Sectors such as education, health, agriculture, irrigation, and drinking water were included in this phase. VDCs were authorised to formulate, execute, and monitor projects. The government provided funds. VDCs were given the power of administrative and financial control over the programmes. There was provision for the involvement of people's representatives in the evaluation of work performance of the staff deputed for the implementation of the programme.

7.3 Issues

The Decentralization Working Committee of the high-level Decentralization Coordination Committee recently identified four major drawbacks to the implementation of decentralization in the past. They are as follow.

7.3.1 Decentralization was not Integrated with Political Norms

Decentralization was used as a manipulating tool for mobilising people's participation for development work intended to be undertaken by the state.

7.3.2 Lack of Political Commitment

Each committee/commission held different views regarding decentralization. Decentralization was confined to the local executive as an administrative exercise. Consequently, as recommendations were considered not timely by the administration, they were simply confined to paper.

7.3.3 Lack of Continuity

There were frequent changes in the structure of local organizations and rights of the local authorities. Reports and plans were never fully implemented; instead, a new programme was introduced each time.

7.3.4 Inadequate Planning Support to Make Local Authorities Efficient and Capable

Sectoral programmes often ran parallel to VDC-initiated programmes creating confusion. No assessments were made and inadequate assistance was provided to the local organization in terms of financial and manpower support.

7.4 Evolution of the Local Autonomy Act 1998

Bearing in mind the above-mentioned constraints on institutionalising decentralization in the formation of democracy, a high-level decentralization coordination committee was formed by the Government in May 1996. The Government also formed a Decentralization Working Committee as a Coordination Committee in order to review and suggest implementable processes for institutionalisation of decentralization. The working committee submitted a *Report on Decentralization and Local Government 1996* in December 1996.

As recommended, the Local Autonomy Act 1997 was sent to the Development Committee for detailed discussion. Records show that there were over 113 hours of discussion. After making some additional suggestions, the bill was forwarded to the Upper House, which endorsed it and sent it to the Lower House for final approval. Discussions were held again in the Lower House, which was not customary. During these deliberations, parliamentarians were physically abusive and furniture was destroyed. This was the first incidence of its kind and a few parliamentarians were injured. Ultimately, the house passed the bill with a two-thirds majority. Opposition parties disagreed with the process adopted by the chairman so they registered a motion for his impeachment. Simultaneously, a similar motion was registered against the vice-chairman by the ruling partner. The vice-chairman resigned before voting, while the chairman survived. The bill is still awaiting final endorsement from His Majesty.

In the Local Autonomy Act 1998, there are particular articles on decentralization of power of natural resource management. These articles are related to agriculture, forestry, land tax and land use. Local bodies are empowered to exercise their right of planning, implementing, and evaluating the use of natural resources.

7.5 Other Efforts

7.5.1 Panchayat Development and Land Tax, 1965

The basic tenets of the *Panchayat* system were the creation of a society free from exploition and the maximum mobilisation of human and financial resources at the local level. The aim was to meet these objectives by greater decentralization of both administrative power and institutions, and also by making local political and economic institutions viable instruments for carrying out local development objectives.

The Land Reform Act of 1964 was one such measure for improved agricultural production and greater equity. Associated with this act was the enactment of the *Panchayat* Development and Land Tax (PDLT) Act 1965 whose intention was not only to be an effective measure for rural resource mobilisation especially from the agricultural sector, but also was the instrument to make local (village and district) *panchayat*(s) strong and viable. It was perceived as a reasonable scheme for greater resource mobilisation for local development. However, the PDLT did not achieve tax collection at a desirable level as it was difficult for local people to enforce tax collection in their own village; there was

income disparity as Nepal is geographically and resourcewise diverse with unequal resource endowments; there was a lack of trained manpower; and there were many opportunties for misappropriation of funds. There were incidences of the village *panchayat* chairman ignoring the district *panchayat* and national *panchayat* authorities. Ultimately, the programme was abandoned.

7.5.2 Participatory District Development Programme (PDDP), 1995

With a view to establishing and further augmenting the process and institutional base of an effective decentralized system of local-level planning and monitoring, the Decentralization Support Programme (DSP) was implemented during 1992-1995 with assistance from the United Nations Development Programme (UNDP). The DSP involved key government agencies at the central level and a number of districts. Encouraged by the results of the DSP, the Participatory District Development Programme (PDDP) is currently being implemented in 20 districts as a follow-up to DSP. Besides the PDDP, there is also a Local Governance Programme (LGP) in 12 districts. This totals 32 districts of Nepal where local-level agencies (VDCs, DDCs) are being assisted and trained for sustainable autonomy.

A recent study by UNDP, however, mentions that legal provisions used by local government were not being honoured by central government organizations. Moreover, confusion existed in the way devolution of power to local bodies is understood and interpreted by different stakeholders.

7.6 Impact and Evidence

In the past, the rulers consulted the rural elite. These rural elite, who were often disguised as the representatives of the people, in fact worked for the ruling class and thus perpetuated class exploitation. During the *Panchayat* regime, devolution of centrally controlled power to grass roots' organizations often remained on paper. Local institutions created by the state were simply mechanisms for controlling and monitoring the people, not for empowering them in a real sense. Decentralization, therefore, was not an outcome of bottom-up demand but rather a recipe given by the centre.

Nepal's first democracy crumbled in 1960 and the contemporary society was blamed for its nonpreparedness to practice democracy. The PDLT was abandoned prematurely when local bodies began institutionalising their power and was later seen as a threat by district- and central-level organization leaders. Partial devolution of power to local bodies indicated that, with such empowerment, higher level organizations were neglected, and conflicts among different hierarchies arose with regards to resource use (land use, land revenue, and land tax). There was competition for the exploitation of natural resources rather than their conservation.

However, each report/plan on decentralization has given rise to another plan and, ultimately, the Local Autonomy Act 1998 has been passed by parliament. Certainly the rights of local bodies have been protected by the act, but doubts about the people's wisdom still persist as the act still makes the government the final assessor. The government's sincere commitment to empowering local entities is still questionable.

Decentralization, when viewed as a means for reversing the centralized governance of the past and reinforcing the devolution of power to local political units for self-governance and self-reliant development, has mixed results. Dahal (1996) rightly says

that decentralization efforts pursued so far in Nepal—whether as a mix of restrained deconcentration and delegation under the *Panchayat* system, or as vigorous efforts towards delegation at present—are 'essentially experiments to legitimise the policies of survival regimes, be they the development practices undertaken internally or a response to the imperatives of changing global needs and demands'.

As resource constraints are obstacles to sustainable development, attempts were made to support local entities in the past. Rights to resource mobilisation in terms of various kinds of tax collection and freedom to invest were given to local bodies; more recently, the state has supported VDCs with Rs 500,000 each (under the 'Build Your Own Village' and 'self-reliance' banners). However, the practice of dividing this money equally among wards is widely practised. This creates the problem of treating all VDCs and DDCs in a similar manner regardless of their resources. The Local Autonomy Act too intends to empower local entities with blanket recommendations in spite of the fact that there are great variations among VDCs and DDCs of diverse agro-ecological zones and ethnic/caste diversity.

The bill (Local Autonomy Act, 1998) seeks to revise the existing legal framework in tune with government's avowed commitment to fully fledged and unconditional decentralization and devolution of authority to local bodies. However, the outcome is still uncertain.

Chapter 8
Summary and Conclusions

Nepal has gone a long way in terms of formulating a wide range of policies, plans, and regulatory instruments (Annex 3). In fact, many of these documents overlap. The inherent contradictions have often led to serious difficulties in their implementation. These have also provided a convenient excuse for the responsible agencies not to implement their provisions seriously. Hence it may be observed that many of the plans, policies and programmes appear only on paper, failing to produce the intended impacts. This is true across the broader macro-policy framework as well as in sectoral policies. The present study began by asking what specific impacts were generated by the policies adopted at different times in sectors and subsectors covered in the study. Yet, it was found that not many of the policies were actually implemented fully. In this concluding chapter, an attempt is made to synthesise in general terms the impact of different policies to the extent that these could be observed and deduced with some degree of reliability.

Land-related policies have their origin in various governmental development plans, the National Conservation Strategy (HMGN/IUCN, 1988), NEPAP (EPC, 1993), and sectoral master plans and perspective plans. The effectiveness of implementation of these policies on the ground has, however, remained weak to non-existent.

Growth in agriculture, the largest sector of the economy, has remained virtually stagnant over a protracted period despite a number of plans and strategic approaches being followed in the past, often with donor encouragement. However, such plans have failed to give adequate attention to issues related to land ownership, tenurial arrangements, and potential impacts on soil fertility as intensive farming expands in hill and mountain areas. Agricultural research has failed to respond to the changing contexts of farming systems. Agricultural extension has similarly remained mostly incapable of assisting farmers. Women farmers are neglected in most programmes, and the cadre of women extensionists remains extremely meagre. Emphasis all along has been to treat all farmers (rich and poor, large and

small, men and women) equally. Agricultural development efforts are still target-oriented and based narrowly on increasing production, without attention to market potentials. A generalist approach is followed without regard to the diverse peculiarities of different agro-ecological regions and farmer categories.

All periodic plans, strategic documents, and action plans have invariably emphasised the need for giving high priority to soil fertility maintenance, particularly in the hills and mountains. However, continuously declining crop yields and the ever-worsening process of land degradation indicate that these policies have failed. Nepalese mountain and hill farmers face the critical problem of extensive land degradation. There is evidence to suggest that the amount of plant nutrients lost each year from the soil far exceeds the amount replenished through the application of organic manure and chemical fertilizer. As a result, crop yields have continually declined along with food security.

In terms of property rights and entitlements to productive assets and natural resources, the farmers of Nepal have limited access to such resources. Land and land-based resources have served as the principal source of economic surplus generated by the ruling classes. Concentration of land in the hands of a few elite classes and severe exploitation of the peasantry through the excessive expropriation of labour and land revenue have been the principal characteristics of rulers through much of the nation's history. Measures adopted at various times to alleviate the wretched condition of the peasantry became largely ineffective since the government was not serious about genuine reform. The overwhelming concern was to perpetuate the *status quo*, which was to safeguard the interests of the high-caste privileged classes. This is also true with regard to the implementation of the Land Act of 1962. In Nepal, more than two-thirds of the total holdings are of less than one hectare of land, and are only 30 per cent of the total farm area. On the other hand 1.5 per cent of the holdings are in the more than five ha holding class and cover 14 per cent of the total farm area.

Landless and other chronically resource-poor households that are least affected directly by agricultural innovations and growth need special attention as employment opportunities expand on large farms and in non-farm sectors. Intervention to facilitate access to land is one of the options available to address the equity issue. Indeed, land redistribution and regulation of tenancy contracts are favoured both on equity and efficiency grounds.

Land fragmentation has emerged as another significant constraint. It is considered a structural problem inhibiting the modernisation of agriculture. Because of the scattered nature of farm parcels and, in many instances, owing to their economically non-viable size, farmers are hindered from adopting productivity-enhancing technologies that are otherwise readily available for their benefit.

In the forestry sector, the mechanism for implementing policies has been simply to launch projects that are often funded by the donor community, notably the World Bank, the Asian Development Bank, FAO/UNDP, Japan, Germany, UK, Australia, the United States, Denmark, Finland, and Switzerland. As an example, Annex 4 provides a list of the major forestry sector projects implemented during the last 15 years. Many of them have been reported to have 'performed well' at the micro-level. The EDAW (1994) report, for instance, suggests that the NACFP has reversed the process of forest degradation that was occurring through the combined impact of

fires, overgrazing, and excessive harvesting of forest products. However, recent evidence from Sindhu Palchowk district shows that there are problems related to equity in community forestry. Forest user group committee members are predominantly from economically advantaged groups; they make most of the decisions and economically disadvantaged groups lose access to vital resources (Graner 1997). In many cases, community forestry has offered village elites legitimacy for their power and an opportunity to expand their political influence (Pokharel 1998).

Similarly, reports of environmental impacts of various forestry projects at the national level are pessimistic. Based on the latest national forest inventories developed from air-photo interpretation and satellite image analysis, the Forest Resource Information System Project has found that forest lands have been reduced by about nine per cent in 17 years (between the period 1979–96), and the rate of degradation of the existing forest is yet to be reversed (Table 8.1).

Such contradictory sets of data on the extent of environmental degradation in Nepal indicate that it is difficult to measure the extent and the causes of degradation in the country, and the reasons are much more complex than often believed. As Blaikie (1990) has concluded, seeking confirmation of land degradation can be a daunting task. The emphasis of government publications, received wisdom, and academic research at a particular point in time can so condition the perceptions of policy-makers that it is difficult for any counter-intuitive results of research to gain credibility.

Whatever its factual basis, the environmental 'crisis' or the achievements made in this area have been used by both the Nepalese government and the donor community in different ways, in line with their own interests, approaches, and political convictions. In either context, the Nepalese government has been able to convince the donor community to produce aid flows. In fact, the majority of the donor agencies, who send their personnel directly or indirectly into government departments, end up merely doing the routine work of inefficient state services.

The views in this document may seem pessimistic and somewhat cynical in comparison with the rhetoric of official policy, legislation, and progress reports. However, even without rigorous evidence, the general state of the nation's policy environment, and its role in influencing land management and degradation, appears unsatisfactory. These findings come from the perceived reality of institutional incapability of government apparatus and non-sustainability of donor-funded projects and their environmental impact on the natural resource base and local population.

Any general problem of unsustainable resource use and biodiversity degradation, in Nepal as elsewhere, lies in the inability of the state. Any recommendation must therefore address this general issue first. While a good policy and legislation are necessary prerequisites, even when in place

Table 8.1: **Percentage Change in Forest and Shrubland Area in Nepal, 1979-1996**

Data sources	Forest area	Shrubland	Total
NFI (1990-96)	29.0	10.6	39.6
Master Plan (85-86)	37.4	4.8	42.2
LRMP (78-79)	38.0	4.7	42.7

Source: FRISP (1998)

they are far from being effective instruments unless there are adequate mechanisms and commitment to execute seriously. There has to be the political will and institutional capability to manage resources in a sustainable way; but pervasive failures in governance have prevented this from taking place. It is only the weaker sections of society that are brought under the purview of the law, and powerful individuals involved in violations of law often escape through their influence.

Therefore, the implication of this type of study dealing with the socio-environmental impacts of official policies is that the currently growing dominance of populist rhetorics in the NGO sector, neo-liberal influences in the public sector, and historically inherited classical approach in the mindset of bureaucrats and technical professionals, should not be allowed to prevent critical reflection. Nor should the rhetoric of official policy blind one to innovate and search for radical alternatives that challenge the *status quo*. Evidence suggests that the poor have become victims of the negative impacts of government land policies that have contributed largely to environmental degradation.

Finally, with regard to decentralization, the *Panchayat* system, which was virtually a centralized monocratic system, empowered the elite (specialising in power games) rather than the people. Reports of most of the committees/commissions formed by the government for suggesting better implementation of decentralization were never fully implemented. The bureaucracy as well as the national leaders and state institutions did not have faith in the people. Various policies related to decentralization were not implemented with sincerity because of the lack of a strong political commitment. The political change of 1990 has not altered the feudal structure of the Nepalese society. A few people still own most of the resources and the government is represented mostly by the power elite. State-owned natural resources are also siphoned off, mostly for the benefit of the elite class, while the majority of the poor have been pushed further into poverty and deprivation. Decentralization in the past never emphasised proper management of natural resources and sustainable development. The centre was never sincere in real deconcentration, decentralization, and devolution of power to local entities. Broader issues such as environmental conservation, land degradation, and sustainable development were never the subjects of discussion within the broader framework of decentralization. The latest Local Autonomy Act (1998) attempts to safeguard the interests of local entities by entrusting people to manage their own affairs. However, strong political commitment and bureaucratic support are needed to make this act operational and meaningful. Nepal's past experience does not lead to such optimistic expectations.

Bibliography

(Not necessarily cited in the text)

AGRICULTURE AND ENTITLEMENT

APROSC (1986a). *Perspective Plan of Agriculture (1985-2005).* Kathmandu: Agricultural Projects Services Centre (mimeograph).

APROSC (1986b). *Perspective Land Use Plan.* Kathmandu: Agricultural Projects Services Centre (mimeograph).

APROSC (1986c). *Perspective Nepal: Long-Term Food Plan.* Kathmandu: Agricultural Projects Services Centre (mimeograph).

APROSC (1988). *Sustainability of Training and Visit System of Agricultural Extension Approach in Nepal.* Submitted to the World Bank funded Agricultural Extension and Research Project, Kathmandu: Agricultural Projects Services Centre.

APROSC/JMA (1995). *Nepal Agriculture Perspective Plan.* Kathmandu: Agricultural Projects Services Centre/John Mellor Associates.

Bajracharya, B (1994). *Gender Issues in Nepali Agriculture: A Review. Research Report Series No. 25, Policy Analysis in Agriculture and Related Resource Management.* Kathmandu: Ministry of Agriculture/Winrock International.

Baral, J. R.; Basnyat, B.; Sharma, B. H.; Shakya, P. B.; and Basnet, B.M.S. (1989). *Commodity Group Approach of Agricultural Extension in Nepal.* Submitted to the Ministry of Agriculture and Food and Agriculture Organization of the United Nations. Kathmandu: Department of Agriculture, Ministry of Agriculture.

Bhatt, N.; Shrestha, L.; Thomas-Slayter, B.; and Koirala, I. (1997). *Managing Resources in a Nepalese Village: Changing Dynamics of Gender, Caste and Ethnicity.* Kathmandu: Institute for Integrated Development Studies.

Bhatta, B.R (1990). *Watershed Management Guidelines for Monitoring and Evaluation.* Kathmandu: United Nations Development Programme/Food

and Agriculture Organization of the United Nations.

Bromley, D. W. and Chapagain, D. P. (1984). 'The Village Against the Centre: Resource Depletion in South Asia'. In *Amer. J. Agric. Econ.*, Vol. 66, No. 5.

Carson, B. (1992). *The Land, the Farmer, and the Future.* Kathmandu: International Centre for Integrated Mountain Development (ICIMOD).

CBS (1994a). *A Compendium on the Environmental Statistics of Nepal: Issues and Facts.* Kathmandu: Central Bureau of Statistics, His Majesty's Government of Nepal.

CBS (1994b). *National Sample Census of Agriculture Nepal 1991/92, Analysis of Results.* Kathmandu: Central Bureau of Statistics, His Majesty's Government of Nepal.

Chapagain, D. P. (1984). *Managing Public Lands as a Common Property Resource: A Village Case Study in Nepal.* Ph.D. Dissertation, USA: University of Wisconsin-Madison.

Denholm, J. and Rayachhetry, M. B. (1990). *Major Agro-Forestry Activities of Non-Governmental Organizations in Nepal.* Research Report Series No. 10, Policy Analysis in Agriculture and Related Resource Management. Kathmandu: Ministry of Agriculture/ Winrock International.

EPC. (1993). *Nepal Environmental Policy and Action Plan: Integrating Environment and Development.* Kathmandu: Environment Protection Council, His Majesty's Government of Nepal.

FAO (1974). *Perspective Study of Agricultural Development for Nepal.* Rome: Food and Agriculture Organization of the United Nations.

Ghimire, K (1992). *Forest or Farm: The Politics of Poverty and Land Hunger in Nepal.* Delhi: Oxford University Press.

Gill, G. J. (1995). *Agriculture and the Environment in the Mid Hills of Nepal: A Case of Mistaken Identity.* Research Report Series No. 32. Kathmandu: His Majesty's Government, Ministry of Agriculture/Winrock International Policy Analysis in Agriculture and Related Resource Management Project.

Gilmour, D.A. and Fisher, R.J. (1991). *Villagers, Forests and Foresters: The Philosophy, Process and Practice of Community Forestry in Nepal.* Kathmandu: Sahayogi Press.

HMGN/ADB (1982). *The Nepal Agriculture Sector Strategy Study.* Kathmandu: His Majesty's Government of Nepal/Asian Development Bank.

HMGN/FINNIDA/ADB (1988). *Master Plan for the Forestry Sector.* Kathmandu: His Majesty's Government/FINNIDA/Asian Development Bank.

IDS (1983). *Foreign Aid and Development in Nepal*, Proceedings of a Seminar. Kathmandu: Integrated Development Systems.

ILO/SAAT/UNDP (1996). *Nepal Programmes and Strategies for Employment Promotion,* A Report Prepared by ILO-SAAT under UNDP Technical Support Services-1. New Delhi: International Labour Organization/South Asia Multidisciplinary Advisory Team/United Nations Development Programme.

Jha, A.; Shakya, P. B.; Manandhar, D. N. and Basnyat, B. B. (1994). *Extension*

in Transition: National Agricultural Extension Strategy. Lalitpur, Nepal: Department of Agricultural Development, Ministry of Agriculture.

Jodha, N. S. (1992a). *Sustainable Land Use Involving Trees in the Himalayan Region: Perspectives and Policy Implications.* Mountain Farming Systems Discussion Paper Series No. 24. Kathmandu: International Centre for Integrated Mountain Development.

_____. (1992b). *Agricultural Growth and Sustainability: Perspectives and Experiences from the Himalayas.* Mountain Farming Systems Discussion Paper Series No. 25. Kathmandu: International Centre for Integrated Mountain Development.

_____ (1993). *Perspectives on Poverty-Generating Processes in Mountain Areas.* Mountain Farming Systems Discussion Paper Series No. 34. Kathmandu: International Centre for Integrated Mountain Development.

Jodha, N.S.; Banskota, M. and Partap, T. (eds) (1992). *Sustainable Mountain Agriculture: Farmers' Strategies and Innovative Approaches.* New Delhi: Oxford & IBH Publishing Co. for International Centre for Integrated Mountain Development (2 volumes).

KMTNC (n.d.). *A New Approach in Protected Area Management: A Decade of Conservation for Development (1986-1996).* Kathmandu: King Mahendra Trust for Nature Conservation.

MFAI (1973). *Ten-Year Agricultural Development Plan (in Nepali).* Kathmandu: Ministry of Food, Agriculture and Irrigation, His Majesty's Government of Nepal.

MOA (1981). *Nepal's Experience in Hill Agricultural Development.* Kathmandu: Ministry of Agriculture, His Majesty's Government of Nepal.

MOF (1998). *Economic Survey, Fiscal Year 1997/98.* Kathmandu: His Majesty's Government/Ministry of Finance.

NPC (1978). *A Survey of Employment, Income Distribution and Consumption Patterns in Nepal.* Kathmandu: National Planning Commission, His Majesty's Government.

NPC (1985). *The Seventh Plan 1985-90.* Kathmandu: National Planning Commission, His Majesty's Government.

NPC (1986). *Basic Needs Programme.* Kathmandu: National Planning Commission, His Majesty's Government.

NPC (1992). *Poverty Alleviation and Human Development in Nepal,* Proceedings of a Seminar. Kathmandu: National Planning Commission, His Majesty's Government.

NPC (1992). *The Eighth Plan 1992-97.* Kathmandu: National Planning Commission, His Majesty's Government.

NPC (1998). *The Ninth Plan 1997-2002.* Kathmandu: National Planning Commission, His Majesty's Government.

Oli, K. P. (1996). 'Legal Instruments for Sustainable Environmental Management in Nepal'. In *Environment and History,* Vol. 2, No. 2, Special Issue on South Asia. Cambridge, United Kingdom.

Partap, T. and Watson, H.R. (1994). *Sloping Agricultural Land Technology (SALT): A Regenerative Option for Sustainable Mountain Farming.*

ICIMOD Occasional Paper No. 23. Kathmandu, Nepal: ICIMOD.

Rai, N. K. and Thapa, M. B. (1993). *Indigenous Pasture Management Systems in High-Altitude Nepal: A Review.* Research Report Series No. 22, Policy Analysis in Agriculture and Related Resource Management. Kathmandu: Ministry of Agriculture/Winrock International.

Regmi, M. C. (1971). *A Study in Nepali Economic History 1769-1846.* New Delhi: Manjusri Publishing House.

Regmi, M. C. (1978). *Land Tenure and Taxation in Nepal.* Kathmandu: Ratna Pustak Bhandar.

Sen, A. (1981). *Poverty and Famines: An Essay on Entitlement and Deprivation.* Delhi: Oxford University Press.

Sharma, B. (1995). *The Land Resources of Nepal. Background Technical Paper for the Agriculture Perspective Plan, APP/TP/21.* Kathmandu: Agricultural Projects Services Centre.

Sharma, B.P. and Antoine, J. (1994). *Agro-Ecological Zoning Strategy for Sustainable Agriculture Planning and Development in Nepal (Main Report).* TSSP DP 9/70/NEP/92 TO 1. Kathmandu: APROSC/FAO/UNDP.

Shivakoti, G.; Varughese, G.; Ostrum, E.; Shukla, A.; and Thapa, G. (eds) (1997). *People and Participation in Sustainable Development: Understanding the Dynamics of Natural Resource Systems,* Proceedings of an International Conference. Rampur, Chitwan, Nepal: Institute of Agriculture and Animal Science, Tribhuvan University.

Shrestha, B.P. (1967). *The Economy of Nepal.* Bombay: Vora and Co.

Skerry, C. A.; Moran, K. and Calavan, K. M. (1991). *Four Decades of Development: The History of U.S. Assistance to Nepal.* Kathmandu: United States Agency for International Development.

Stiller, Ludwig F., S.J., (1993). *Nepal: Growth of a Nation.* Kathmandu: Human Resources Development Research Centre.

Stiller, L. F. S.J. and Yadav, R. P. (1979). *Planning for People: A Study of Nepal's Planning Experience.* Kathmandu: Shahayogi Prakashan.

Stri Shakti (1995). *Women Development and Democracy: A Study of the Socio-Economic Changes in the Status of Women in Nepal (1981-1993).* Kathmandu: Stri Shakti.

Svejnar, J. and Thorbecke, E. (1986). *Economic Policies and Agricultural Performance: The Case of Nepal 1960-82.* Paris: Development Centre, Organization for Economic Cooperation and Development.

Tamang, D. (1990). *Indigenous Forest Management Systems in Nepal: A Review,* Research Report Series No. 12. Kathmandu: His Majesty's Government, Ministry of Agriculture/Winrock International Policy Analysis in Agriculture and Related Resource Management Project.

Tamang, D.; Gill, G. J.; and Thapa, G. B. (eds.) (1993). *Indigenous Management of Natural Resources in Nepal.* Kathmandu: His Majesty's Government, Ministry of Agriculture/Winrock International Policy Analysis in Agriculture and Related Resource Management Project.

Thapa, G. (1992). *Public Resource Allocation and Agricultural Performance in*

Nepal. Kathmandu: His Majesty's Government/Winrock International.

Thapa, G. B. and Weber, K. E. (1990). *Managing Mountain Watersheds: the Upper Pokhara Valley*. Bangkok: Asian Institute of Technology, Division of Human Settlements Development.

Thapa, K. B.; Timilsina, P. and Dahal, M. K. (1996). *Adhunik Nepalko Arthik Itihas* [Economic History of Modern Nepal]. Kathmandu: Centre for Nepal and Asian Studies, Tribhuvan University.

Thapa, Y.B. and Aryal, U. (1988). 'Productivity-Wage Gap and Surplus Appropriation in Nepalese Agriculture'. In *The Economic Journal of Nepal*, Vol. 11, No. 3.

World Bank (1990). *Nepal: Relieving Poverty in a Resource-Scarce Economy*. Vol. 1. Washington, D. C.: World Bank.

World Bank (1992). *World Development Report 1992: Development and the Environment*. Washington DC: Oxford University Press.

Yadav, R.P. (1987). *Agricultural Research in Nepal: Resource Allocation, Structure, and Incentives*. Washington D. C: IFPRI.

Zaman, M.A. (1972). *A Socioeconomic Case for Peasant Ownership in Land. Staff Paper No. 9*. Kathmandu: Ministry of Food and Agriculture, Economic Analysis and Planning Division.

_____ (1973). *Evaluation of Land Reform in Nepal*. Kathmandu: Ministry of Land Reform.

FORESTRY AND WILDLIFE

Arnold, J.E.M. and Campbell, J.G. (1986). 'Collective Management of Hill Forests in Nepal: The Community Forestry Development Project'. In *Proceedings of a Conference on Common Property Resource Management*, April 21-26. Washington DC: National Academy Press.

Bajracharya, D. (1983). 'Deforestation in the Food/Fuel Context: Historical and Political Perspectives from Nepal'. In *Mountain Research and Development* Vol. 3(3), 227-40.

Bajracharya, M.K. (1986). *Forestry in Nepal: An Introduction*. Kathmandu: Ratna Pustak Bhandar.

Barrow, C.J. (1991). *Land Degradation: Development and Breakdowns of Terrestrial Environments*. Cambridge: Cambridge University Press.

Bartlett, A.G. and Malla, Y.B. (1992). 'Local Forest Management and Forest Policy in Nepal'. In *Journal of World Forest Resource Management*, Vol. 6, 99-116.

Benkhe, R.H. and Scoones, I. (1993). 'Rethinking Range Ecology: Implications for Rangeland Management in Africa'. In Benkhe, R.H,Scoones, I. and Kerven, C. (eds) *Range Ecology at Disequilibrium*. London: ODI.

Banskota, M. (1979). 'The Nepalese Hill Agro-Ecosystem: A Simulation Analysis of Alternate Policies for Food Production and Environmental Change'. Unpublished Ph.D. Thesis, Cornell University.

Bhatia, K.R.; Rai, S.; Khadgi, S.; Tembe, D.; Oli, K.; Bhujel, J.B. and Moktan, M. (1995). *A Gender Analysis: Dolakha-Ramechhap Community Forestry Project*. Vols. 1 and 2. Kathmandu: SDC.

Biot, Y.; Blaikie, P.M.; Jackson, C. and Palmer-Jones, R. (1995). *Design of an*

Agenda for Research on Land Degradation. World Bank Discussion Paper No 289. Washington, D.C.: World Bank.

Blaikie, P.M. (1985). *The Political Economy of Soil Erosion in Developing Countries.* Harlow, Essex: Longman Scientific and Technical.

Blaikie, P. M. (1988). 'The Explanation of Land Degradation'. In Ives, J. and Pitt, D.C. (eds) *Deforestation: Social Dynamics in Watersheds and Mountain Ecosystems.* London: Routledge.

Blaikie, P. (1989). 'Explanation and Policy in Land Degradation and Rehabilitation for Developing Countries'. In *Land Degradation and Rehabilitation*, Vol. 1, 23-37.

Blaikie, P.M. (1990). 'The State of Land Management Policy: Present and Future'. Paper Presented at the Rural Development Studies Research Seminar at the Institute of Social Studies, November 4, The Hague.

Blaikie, P. (1994). 'Political Ecology in the 1990s': An Evolving View of Nature and Society', Political Ecology Workshop, MSU, April 1994.

Blaikie, P.M. and Brookfield, H. (1987). *Land Degradation and Society.* London and New York: Methuen.

BPP (1995). *Biodiversity Profile of the Terai and Siwalik Physiographic Zones.* BPP Publication No 12. Kathmandu: DNPWC.

Brandon, K.E. and Wells, M. (1992). 'Planning for People and Parks: Design Dilemmas'. In *World Development*, Vol. 20(4), 557-70.

Branney, P. and Yadav, K.P. (1998). *Baseline Forest Resource Reassessment.* Kathmandu: NUKCFP.

Brown, K. (1998). 'The Political Ecology of Biodiversity, Conservation and Development in Nepal's *Terai*: Confused Meaning, Means and Ends'. In *Ecological Economics*, Vol. 24, 73-87.

Carpenter, R. (1989). 'Do We Know What We're Talking About?'. In *Land Degradation and Rehabilitation*, Vol. 1, 1-3.

Carson, B. (1985). *Erosion and Sedimentation Processes in the Nepalese Himalayas.* ICIMOD Occasional Paper No 1. Kathmandu: ICIMOD.

CFDP (1983). *Community Forestry Development Project Progress up to Mid 1982.* Miscellaneous Document No 9. Kathmandu: HMGN/UNDP/FAO.

CFDP (1984). *Annual Progress Report for 1984-85.* Miscellaneous Document No 15. Kathmandu: HMGN/UNDP/FAO.

CFDP (1985). *Annual Progress Report for 1984-85.* Miscellaneous Document No 23. Kathmandu: HMGN/UNDP/FAO.

CFDP (1986). *Annual Progress Report for 1984-85.* Miscellaneous Document No 36. Kathmandu: HMGN/UNDP/FAO.

Chhetri, G and Rana, S. (1995). *A Gender Analysis of Women's Participation in Community Forestry.* A Report to the Nepal-Australia Community Forestry Project. Kathmandu: NAFP.

CPFD (1991). *The Community and Private Forestry in Nepal.* Kathmandu: DOF.

CPFD (1996). *Forest Users' Group Database.* Kathmandu: CPFD.

CPFD (1998). *Forest Users' Group Database*. Kathmandu: CPFD.

Chapagain, D.P. (1984). 'Managing Public Lands as a Common Property Resource: A Village Case Study in Nepal'. Unpublished Ph.D. Thesis. University of Wisconsin.

Dankelman, I. (1993). 'Women, Children and Environment'. In Steady, F.C. (ed) *Women and Children First: Environment, Poverty and Sustainable Development*. Vermont, USA: Schenkman Books.

DNPWC/UNDP (1996). *Park and People Project*. Implementation Guidelines. Kathmandu: DNPWC and HMGN.

DNPWC (1997). *Barsik Pragati Pratibedan* 2053/54 (Annual Progress Report 1996/97). Kathmandu: DNPWR

DNPWC (1998). *Department of National Parks and Wildlife Conservation (mimeo)*. Kathmandu: DNPWR

DOF (1994). *Van Bibhag: Barsik Pratibedan 2050/51* (Annual Progress Report of the DOF 1994/95). Kathmandu: DOF.

DOF (1995). *Samudayik Van Vikas: Digdarshan* (Community Forestry Development: Operational Guidelines). Kathmandu: Danida/ICIMOD/CPFD.

Dudley, N. (1992). *Forests in Trouble: A Review of the Status of Forests Worldwide*. Gland, Switzerland: WWF International.

Eckholm, E.P. (1975). 'The Deterioration of Mountain Environments'. In *Science*, Vol. 189, 764-70.

Eckholm, E. (1976). *Losing Ground: Environmental Stress and World Food Prospects*. New York: W. Norton for the World Watch Institute.

EDAW (Aust) Pty. Ltd. (1994). *Nepal Australia Community Forestry Project: Environmental Review*. Australia: AIDAB and ANUTECH Pty Ltd.

Elson, D. (1995). 'Gender Awareness in Modelling Structural Adjustment', In *World Development*, Vol. 23(11), 1851-68.

EPC (1993). *Environmental Policy and Action Plan*. Kathmandu: NPC.

FAO (1991). 'Sustainable Development and Management of Land and Water Resources'. Background Document No 1 for FAO/Netherlands Conference on Agriculture and the Environment.

FAO (1997). *Asia-Pacific Forestry Sector Outlook Study Paper No APFSOS/WP132: Country Report Nepal*. Rome: Forestry Policy and Planning Division, FAO.

FDP (1995). *Project Index*. Kathmandu: HMGN/USAID.

Fisher, R. J. (1989). *Indigenous System of Common Property Forest Management in Nepal*. Working Paper No 18. Honolulu, Hawaii: Environment and Policy Institute, East-West Centre.

FORESC (1994). *Deforestation in the Terai Districts 1978/79-1990/91*. FSD Publication No 60. Kathmandu: Forest Research and Survey Centre (FORSC).

FRISP (1998). *Forest and Shrub Cover of Nepal Based on the Latest Inventories (mimeo)*. Kathmandu: Forest Resource Information System Project.

Ghimire, K.B. (1994). 'Parks and People: Livelihood Issues in National Parks

Management in Thailand and Madagascar'. In *Development and Change*, Vol. 25, 195-229.

Goetz, A.M. (1995). 'Institutionalising Women's Interests and Gender-Sensitive Accountability in Development'. In *IDS Bulletin*, Vol. 26(3), 1-10.

Graner, E. (1997). *The Political Ecology of Community Forestry in Nepal*. Germany: Verlag für Entwick Ungspolitik Saarbrucken.

Hausler, S. (1993). 'Community Forestry: A Critical Assessment. The Case for Nepal'. *In The Ecologist*, 23(3):84-90.

Heinen, J.T. (1993). 'Park-People Relations in Koshi Tappu Wildlife Reserve, Nepal: A Socioeconomic Analysis'. In *Environmental Conservation*, Vol. 20, 25-34.

HMGN (1961). *The Forest Act, 1961*. Kathmandu: Law Books Management Board.

HMGN (1976). *Rastriya Van Yojana, 2033* (National Forestry Plan, 1976). Kathmandu: MOFSC.

HMGN (1978). *Panchayati Van, Panchayat Samrasit Van and Kabuliyati Van Niyamaabali 2035* (Panchayat Forest, Panchayat Protected Forest and Leasehold Forest Regulations, 1978). Kathmandu: Law Books Management Board.

HMGN (1988). *Master Plan for the Forestry Sector, Nepal: Main Report*. Kathmandu: MOFSC.

HMGN/IUCN (1988). *The National Conservation Strategy for Nepal*. Kathmandu: HMGN/IUCN.

HMGN (1990). *Master Plan for the Forestry Sector, Nepal: Revised Forestry Sector Policy (Draft)*. Kathmandu: HMGN/ADB/FINNIDA.

HMGN (1993). *Nepal Raj Patra Bhag Dui: Van Ain, 2049* (Nepal Gazette Part 2: The Forest Act 1993). Kathmandu: HMGN.

HMGN (1995). *The Forest Act 1993 and the Forest Regulations 1995: An Official Translation by the Law Books Management Board*. Kathmandu: FDP/USAID/HMGN.

Ho T.J. (1985). 'Population Growth and Agricultural Productivity in Sub -Saharan Africa'. In T. J. Davis (ed.) *Proceeding of the Fifth Agricultural Sector Symposium: Population and Food*. Washington, D. C.: World Bank.

Hobley, M. (1985). 'Common Property Does Not Cause Deforestation'. In *Journal of Forestry*, Vol. 83, 663-64.

Hobley, M. (1990). 'Social Reality, Social Forestry: The Case of Two Nepalese Village Panchayats'. Unpublished Ph. D. Thesis, Australian National University, Canberra.

Hobley, M. (1991). 'Gender, Class and Use of Forest Resources: Nepal'. In A. Rodda (ed) *Women and Environment*. London: Zed Books.

Hobley, M. (1996). *Participatory Forestry: The Process of Change in India and Nepal*. London: ODI.

Ives, J.D. and Messerli, B. (1989). *The Himalayan Dilemma: Reconciling Development and Conservation*. London: Routledge.

Jaakko Poyry Oy and MADECOR (1989). *Project for the Implementation of the Master Plan for the Forestry Sector Nepal: Proposal for Forestry Legislation*

Reform in Nepal. Kathmandu: MOFSC.

Jacs, G.V. and Whyte, R.O. (1939). *The Rape of the Earth.* London: Faber and Faber.

Jones, S. (1995). *Deconstructing the Degradation Debate: A Study of Land Degradation in the Uluguru Mountains, Tanzania.* Unpublished Ph.D. Thesis, School of Development Studies, Norwich, UK.

Joshi, A.L. (1993). 'Effects on Administration of Changed Forest Policies in Nepal'. In *Policy and Legislation in Community Forestry*, Proceedings of a Workshop 27-29 January. Bangkok: RECOFTC.

Kadt, E. (1976). *Tourism: Passport to Development?* Oxford: Oxford University Press.

Karmacharya, S.C. (1987). 'Community Forestry Management Experiences of the Community Forestry Development Project'. In *Banko Janakari*, Vol. 1(4), 30-36.

Kharel, S. (1993). 'Women Participation in Community Forestry: The Nepal Australia Community Forestry Project's Experience'. In *Banko Janakari*, Vol. 4(1), 73-5.

King, G.C.; Hobley, M. and Gilmour, D.A. (1990). 'Management of Forests for Local Use in the Hills of Nepal. Part II. Towards the Development of Participatory Management'. In *Journal of World Forest Resource Management*, Vol. 5, 1-13.

KMTNC (1995). *King Mahendra Trust for Nature Conservation (Brochure).* Kathmandu: KMTNC.

KMTNC (1997). *King Mahendra Trust for Nature Conservation: Annual Report.* Kathmandu: KMTNC.

Kayastha, B.N.; Bajracharya, K.M. and Shrestha, A. 1997. *BTRT Watershed Management Project: Final Evaluation Report.* Kathmandu: Department of Soil Conservation and CARE/N.

Lal, R.; Hall, G.F. and Miller, F.P. (1989). 'Soil Degradation I: Basic Processes'. In *Land Degradation and Rehabilitation* Vol. 1, 51-69.

Lele, U. and Stone, S.W. (1989). *Population Pressure, the Environment and Agricultural Intensification: Variations on the Boserup Hypothesis.* MADIA Discussion Paper. Washington D.C: World Bank.

Long, N. (1992). 'From Paradigm Lost to Paradigm Regained'. In Long N. and Long, A (eds) *Battlefields of Knowledge.* London: Routledge.

LRMP (1986). *Land Utilization Report.* Kathmandu: HMGN/Land Resource Mapping Project.

Mahat, T.B.S.; Griffin, D.M. and Shepherd, K.R. (1986a). 'Human Impact on Some Forests of the Middle Hills of Nepal. Part I: Forestry in the Context of the Traditional Resources of the State'. In *Mountain Research and Development*, Vol. 6(3), 223-32.

Mahat, T.B.S.; Griffin, D.M. and Shepherd, K.R. (1986b). 'Human Impact on Some Forests of the Middle Hills of Nepal. Part II: Some Major Human Impacts before 1950 on the Forests of Sindhu Palanchowk and Kavre Palanchowk'. In *Mountain Research and Development*, Vol. 6(4), 325-34.

Mahat, T.B.S.; Griffin, D.M. and Shepherd, K.R. (1987a). 'Human Impact on Some

Forests of the Middle Hills of Nepal. Part III: Forests in the Subsistence Economy of Sindhu Palanchowk and Kavre Palanchowk'. In *Mountain Research and Development* Vol. 7(1), 53-70.

Mahat, T.B.S.; Griffin, D.M. and Shepherd, K.R. (1987b). 'Human Impact on Some Forests of the Middle Hills of Nepal. Part IV: Detailed Study in South-East Sindhu Palanchowk and North-East Kavre Palanchowk'. In *Mountain Research and Development*, Vol. 7(2), 111-34.

Maskey, T. M. and Rajbhandari, K.R. (1997). *A Bibliography of the Biodiversity of Nepal: Protected Areas, Wildlife and Higher Plants.* Kathmandu: WWF Nepal Program.

McFarlane, A. (1976). *Resources and Population: A Study of the Gurungs of Nepal.* Cambridge: Cambridge University Press.

Mearns, R. (1991). *Environmental Implications of Structural Adjustment: Reflections on Scientific Methods.* IDS Discussion Paper 284. Sussex: University of Sussex.

Messerschmidt, D.A. (1995). 'Local Traditions and Community Forest Management: A View from Nepal'. In Warren, D.M., Slikkerveer, L.J. and Brokensha, D. (eds) *The Cultural Dimension of Development: Indigenous Knowledge Systems.* London: Intermediate Technology Publications.

Metz, J.J. (1991). 'A Reassessment of the Causes and Severity of Nepal's Environmental Crisis'. In *World Development,* Vol. 19(7),805-20.

MPFS (1988). *Master Plan for the Forestry Sector, Nepal.* Main Report. Kathmandu: HMG/FINNIDA/ADB.

MPFSP (1988a). *Master Plan for the Forestry Sector, Nepal: Summary of the Programmes.* Kathmandu: HMG/ FINNIDA/ADB.

MPFSP (1988b). *Master Plan for the Forestry Sector Nepal: Executive Summary.* Kathmandu: HMGN/FINNIDA/ ADB.

Mueller-Boeker, U. (1991). 'Wild Animals and Poor People: Conflicts between Conservation and Human Needs in Chitwan (Nepal)'. In *European Bull Him. Res.*, No 2. Suddttsran Institute Heidelberg.

Myers, N. (1992). 'Population - Environment Linkages Discontinuities Ahead'. In *Ambio,* Vol. 22(l), 116-18.

Nepal, S.K. and Weber, K.E. (1993). *Struggle for Existence: Park People Conflict in Royal Chitwan National Park, Nepal".* Bangkok: AIT.

NPC (1992). *Eighth Five Year Plan (1990-95).* Kathmandu: NPC.

Okafor, F.C. (1991). *Population Pressure, Agricultural Change and Environmental Consequence in Southeastern Nigeria.* Working Paper Number 3. African Agriculture: Crisis and Transformation. Social Science Research Council/ American Council on Learned Societies, N.Y.

Pimbert, M. (1993). *Protected Areas, Species of Special Concern, and WWF.* Gland, Switzerland: WWF International.

Pokharel, B. K . (1998). *'Foresters and Villagers in Contention and Conflict: The Case of Community Forestry in Nepal.* Unpublished Ph.D. Thesis. School of Development Studies, University of East Anglia, Norwich, UK.

PPP (1998). 'Introduction'. In *Park and People Programme*. Annual Report 1997. Kathmandu: PPP.

Pretty, J.N. (1994). 'Alternative Systems of Inquiry for a Sustainable Agriculture'. In *IDS Bulletin*, Vol. 25(2), 37-48.

Redclift, M. (1987). *Sustainable Development: Exploring the Contradictions*. London: Routledge.

Regmi, M.C. (1978). *Land Tenure and Taxation in Nepal*. Kathmandu: Ratna Pustak Bhandar.

Scoones, I. and Thompson, J. (1992). 'Beyond Farmer First: Towards a Theoretical Framework', Overview Paper Number 1. In *Workshop Proceedings on Beyond Farmer First: Rural People's Knowledge, Agricultural Research and Extension Practice*. Sussex, London: IDS, University of Sussex.

SDC (1996). *Of Trees, Careers and Capacity Development: Evaluation of the Dolakha- Ramechhap Community Forestry Development Project*. Lalitpur, Nepal: SDC/N.

Sharma, U.R. (1991). 'Park-People Interaction in Royal Chitwan National Park, Nepal'. Unpublished Ph.D. Thesis. University of Arizona, Arizona, USA.

Shrestha, B. (1996) 'Park-People Conflict around the Royal Chitwan National Park'. In *J. Nat. Hist. Mus.* (Nepal), Vol. 15, 73-82.

Shrestha, A. and Jacobsen, L. (1997). *Final Evaluation of the Upper Andhi Khola Watershed Management Project: Final Report*. Kathmandu: Department of Soil Conservation/HMGN and CARE/N.

Soussan, J., Upreti, B., and Shrestha, L. (1995). *The Social Dynamics of Deforestation: A Case Study from Nepal*. London: The Parthenon Publishing Group Limited.

Sowerwine, D. (1994). 'Forest Sector Potential and Constraints. The Forestry Model and Report'. Prepared by a consultant (Unpublished). Kathmandu: DANIDA/ ODA/ SDC/ TU/IDRC/ UMN/ NACFP/ the World Bank and HMGN.

Stone, L., (1989). 'Cultural Cross-Roads of Community Participation in Development: A Case from Nepal'. In *Human Organization*, Vol. 48(3),206-13.

Studsrod, J.E. and Wegge, P. (1995). 'Park-People Relationships: The Case of Damage Caused by Park Animals around the Royal Bardia National Park, Nepal'. In *Environment Conservation*, Vol. 22,133-42.

Talbott, K. and Khadka, S. (1994). *Handing it Over: An Analysis of the Legal and Policy Framework of Community Forestry in Nepal*. Washington D.C.: World Resource Institute.

Tamrakar, S.M. and Nelson, D.V. (1991). *Potential Community Forestry Land in Nepal*. Part 2. Field Document No 16. Kathmandu: CFDP, DOF.

Thomson, M.; Warburton, M. and Hatley, T. (1986). *Uncertainty on a Himalayan Scale: An Institutional Theory of Environmental Perception and Strategic Framework for the Sustainable Development of the Himalaya*. London: Milton Ash Editions Ethnographica.

Tinker, I. (1994). 'Women and Community Forestry in Nepal: Expectations and Realities'. In *Society and Natural Resources*, Vol. 7(4), 367-81.

Tolba, M.K.; El-Kholy, O.A. et al., (1992). *The World Environment 1972-1972:*

Two Decades of Challenges. London: UNEP/ Chapman and Hall.

Wallace, M.B. (1981). 'Solving Common Property Resource Problems: Deforestation in Nepal'. Unpublished Ph.D. Thesis, Harvard University.

Wallace, M.B. (1988). *Forest Degradation in Nepal: Institutional Context and Policy Alternatives*. Research Report Series No 6. Kathmandu: HMGN/ USAID/GTZ/IDRC/Ford/Winrock Project.

Wells, M.P. and Hannan, L. (1992). *People and Parks: Linking Protected Area Management with Local Communities*. Washington D.C.: The World Bank/ WWF/USAID.

Westoby, J.C. (1989). *Introduction to World Forestry*. Oxford: Basil Blackwell.

World Bank (1992). 'Development and the Environment'. In *World Development Report*. Washington D.C: World Bank.

Wysocki, J. (1998). *Consultants Review of the Nepal-United Kingdom Community Forestry Project*. Kathmandu: NUKCFP.

DECENTRALIZATION

Dahal, D. R. (1996). *The Challenge of Good Governance: Decentralisation and Development in Nepal*. Kathmandu: Centre for Governance and Development Studies.

Dhungana B.; Kayastha, N. and Rai, B. P. (1976). *A Study on Panchayat Development and Land Tax, Centre for Economic Development and Administration*. Kathmandu: Tribhuvan University.

____ . (1996). *Report on Decentralisation and Local Government*. Lalitpur, Nepal: High Level Decentralisation Coordination Committee, Decentralisation Working Committee, HMGN.

____ . (1998). *Performance Assessment of PDDP Activities and Staff (an Unpublished Document)*. Lalitpur, Nepal: UNDP.

____. (1998). *Local Autonomy Act*. Kathmandu: HMGN.

____. nd. *Constitution of the Kingdom of Nepal 1990 and Electoral Laws*. Kathmandu: Legal Research Associates.

Annexes

Table A1: **Share of Different Sectors in Total Development Expenditure During Various Plan Periods** (as percentage of total)

Sectors	Plan Periods								
	I	II	III	IV	V	VI	VII	VIII	IX
	1956-61	1962-65	1965-70	1970-75	1975-80	1980-85	1985-90	1992-97	1997-2002
Agriculture	9.41[1]	14.6[2]	17.6	21.7	25.4	27.9	27.9	25.7	27.0
Transport and Communication	44.3	11.7	31.3	41.2	27.7	19.3	15.7	17.7	17.6
Industry, Mining Commerce and Electricity	11.1	40.4	10.0	14.5	18.8	21.7	23.9	24.2	21.1
Social Services	17.4	16.0	17.2	17.3	23.2	29.5	29.5	31.5	33.3
Others	17.3	13.3[3]	23.9	5.3	4.9	2.6	3.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100	100.0	100.0
(Rs. in million)	(214.4)	(596.8)	(1,574.7)	(3315.6)	(8832.6)	(15,582.8)	(74,174.0)	(113,479.0)	(189,580.0)

Notes: The figures up to the Eighth Plan are actual whereas those for the Ninth Plan are as proposed by the NPC.

1. Includes irrigation and drinking water but excludes land reform, land survey and cooperatives
2. Excludes land reform, cooperatives, land survey
3. Includes land reform, surveys, cooperatives, statistics, training and the Rapti Valley Development Project

Sources: NPC (1961) cited by Shrestha (1967); Paudel, 1986; APROSC, 1986a; NPC, 1980, 1985, 1992b, 1998.

Table A2: **Sex Composition of Economically Active Population by Industry (in percentage)**

Industry	Male			Female		
	1971	1981	1991	1971	1981	1991
I. Agriculture and Forestry	69.6	63.6	55.0	30.4	36.4	45.0
II. Non-agriculture	90.5	85.7	79.8	9.5	14.3	20.2
- Mining and Quarrying	86.1	73.3	79.4	13.9	26.7	20.6
- Manufacturing	87.5	85.1	77.1	12.5	14.9	22.9
- Elect., Gas and Water	98.4	95.2	93.6	1.6	4.9	6.4
- Construction	97.2	94.1	89.1	2.8	5.9	10.9
- Commerce	87.7	85.0	76.3	12.4	15.0	23.7
- Transport and Communication	96.7	95.4	96.1	na	10.2	16.4
- Finance	na	89.8	86.6	na	10.2	13.4
- Personal and Community Services	96.1	85.5	79.0	3.9	14.5	21.0
- Others	na	na	93.3	na	na	6.7
III. Not Stated	na	na	76.8	na	na	23.2
Total	70.8	65.4	59.6	29.2	34.6	40.4

Sources: Population Census, 1971, 1981 and 1991, cited in Acharya (1994)

Table A3: **Distribution of Economically Active Population by Sex and Industry (in Percentage)**

Industry	Male			Female		
	1971	1981	1991	1971	1981	1991
I. Agriculture and forestry	92.8	88.7	74.9	98.2	95.8	90.5
II. Non-agriculture	7.2	9.2	23.8	1.8	2.1	8.9
- Manufacturing	1.3	0.6	2.6	0.5	0.2	1.2
- Electricity, gas and water	0.1	0.1	0.3	-	0.0	0.0
- Construction	0.1	0.0	0.7	0.0	0.0	0.1
- Commerce	1.6	2.1	4.5	0.6	0.0	2.0
- Transport and communication	0.3	0.2	1.1	0.0	0.0	0.1
- Finance and business services	0.1	0.2	0.4	0.0	0.0	0.1
- Personal and community services	3.7	6.0	13.6	0.8	1.9	5.3
- Mining and quarrying	-	0.0	0.0	-	0.0	0.0
- Others	-	-	0.6	-	-	0.1
III. Not stated	-	2.1	1.2	-	2.1	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Population Census, 1971, 1981 and 1991, quoted in Acharya (1994)

Table A4: **Male/Female Time Use Pattern in Conventional Economic Activities, in Number of Hours (Comparative Figures for 1961 and 1993** (at 1972/73 prices)

Activities	1961		1993		1961		1993	
	M	F	M	F	M	F	M	F
Animal husbandry	1.43	0.97	1.76	1.07	1.78	1.81	1.37	1.01
Agriculture	2.72	2.74	1.98	2.54	0.70	1.12	0.48	0.56
Manufacturing	0.42	0.45	0.53	0.48	0.05	0.05	0.04	0.15
Outside earnings: wage, salary, business, tea shops	1.24	0.46	1.50	0.69	0.17	0.24	0.02	0.18

Source: Stri Shakti (1995).

Annex 2: **List of Institutions Concerned with Agricultural Development**

Institutions	Main Subsector/Subject/Service of Influence
I. **National Planning Commission**	Formulation of national development policies, screening and approval of development projects, allocation of foreign scholarships
Central Bureau of Statistics	Collection, analysis and dissemination of statistics, including agricultural statistics
II. **Ministry of Agriculture**	
A. Departments	
1. Agriculture	Research not covered by NARC, extension and support services in field crops, horticulture, vegetable and industrial crops, apiculture, sericulture, etc.
2. Livestock Service	animal husbandry, veterinary services and pasture development
3. Cooperatives	Cooperatives
4. Central Food Research Laboratory	Research and extension in food technology and implementation of food and feed acts
B. Corporations/Boards	
1. Agricultural Inputs' Corporation	Seeds, fertiliser, pesticides
2. Dairy Development Corporation	Dairy processing and marketing
3. Nepal Tea Development Corporation	Production, processing and distribution of tea
4. Agricultural Tools' Factory	Production and distribution of farm tools
5. Agricultural Lime Industry	Production and distribution of agricultural lime
6. Cotton Development Board	Research, extension and some support services for production of cotton
7. Animal Feed Development Board	Production and distribution of animal feed
8. Agricultural Projects' Services' Centre	Consultancy and socioeconomic research services
9. Kalimati Fruit and Vegetable Wholesale Market Development Board	Operation and management of the Kalimati market
C. Affiliated Autonomous Bodies	
1. Nepal Agricultural Research Council	Research
2. National Dairy Development Board	Design and advice on dairy policies and projects
3. Tea and Coffee Development Board	Design and advice on tea and coffee polices and projects
4. National Cooperative Development Board	Cooperative policies
III. Ministry of Forests and Soil Conservation	
A. Departments	
1. Forest	Forestry
2. Soil Conservation	Watershed management
3. National Parks and Wildlife Management	Management of national parks and wildlife reserves
4. Plant Research	Research on plants and management of herbarium

Annex 2: **List of Institutions Concerned with Agricultural Development** (Cont'd)

Institutions	Main Subsector/Subject/Service of Influence
B. Corporation/Companies/Boards	Promotion of production and collection of herbs and their processing and distribution
1. Herb Production and Processing Company	
2. Forest Products' Development Board	
IV. Ministry of Water Resources	
A. Department/Agencies	
1. Irrigation	Design and implementation of public sector irrigation projects
2. Hydrology and Meteorology	Meteorological and hydrological research and information services
3. Water and Energy Commission	Design and advice on water and energy-related policies and programmes
V. Ministry of Land Reform and Management	
A. Departments	Implementation of land reform policies
1. Land Reform	
2. Survey	Survey of agricultural and other lands
3. Land Revenue	Collection of land revenue, and land registration
B. Corporation	Management of trust properties including trust lands
1. *Guthi Sansthan* (Public Trusts' Corporation)	
VI. Ministry of Supplies	Design and influence public distribution policies
Corporations	
1. Nepal Food Corporation	Procurement and distribution of food grain and essential oils
2. Timber Corporation of Nepal	Felling and distribution of timber for construction
3. Fuelwood Corporation	Collection and distribution of fuelwood
4. Salt Trading Corporation	Procurement and distribution of sugar, food processing
5. National Trading Limited	Importation and distribution of consumer goods and consumer durables including farm machinery
VII. Ministry of Finance	Financial policy formulation and implementation. Financial resource allocation for different sectors
Departments	
1. Income and Sales' Tax	
2. Customs	
3. Excise	
Corporations	
1. Nepal Bank Limited	
2. Agricultural Development Bank	Agricultural and rural credit
3. *Rastriya Banijya* (National Commercial) Bank	
VIII. Ministry of Industry	Industrial policies
A. Departments/Boards (of direct concern to agriculture)	
1. Department of Industry	Issue licence to industry

Annex 2: **List of Institutions Concerned with Agricultural Development** (cont'd)

Institutions	Main Subsector/Subject/Service of Influence
2. Department of Cottage and Village Industries	Issue licence to small industries and provide training
3. Cottage and Small Industries Development Board	Promotion
Corporation/Industries concerned with Agriculture:	
1. Birgunj Sugar Factory	Sugar processing
2. Lumbini Sugar Factory	Sugar processing
3. Morang Sugar Mills	Sugar processing
4. Birtnagar Jute Mill	Jute processing
5. Janakpur Cigarette Factory	Cigarette production
IX.Ministry of Commerce	Determines international trade polices
1. Department of Commerce	Implementation of trade policies
2. Trade Promotion Centre	Promotion of trade
X. University	
Institute of Agriculture and Animal Service	Production of trained manpower in agriculture
Institute of Forestry	Production of trained manpower in forestry
Institute of Applied Science and Technology	Production of trained manpower in food science and technology

Annex 3: **List of Existing Laws Influencing Agricultural Decisions**

Laws	Spheres of Influence
1. Civil Code, 1961	Inheritance, and slaughter of female animals
2. Agricultural Development Bank Act, 1967	Establishes specialised agricultural credit institution, restricts ADB's authority in lending against the collateral of mobile property or production projects
3. Nepal Rastra Bank Act, 1995	Establishes a central bank and a monetary authority that regulates, *inter alia,* institutional flow of agricultural credit
4. Foreign Exchange (Regulation) Act, 1962	Authorises government's control in exchange rate determination
5. Audit Act, 1967	Centralizes auditing system
6. Act to Promote Use of Nepali Currency, 1957	Forbids use of foreign currency in internal trade
7. Alcohol Act, 1974	Regulates production of alcohol, and permits home brewing and distillation
8. King Mahendra Nature Conservation Trust Act	Establishes a fund for conservation of biodiversity
9. Soil and Water Conservation Act, 1982	Establishes legal frame for the conservation of soil and watersheds–Authorises government to regulate cultivation practices in areas designated by it
10. Decentralisation Act, 1982	Authorises local governments to undertake development activities and to levy certain taxes
11. Natural Calamity (Relief) Act, 1982	Authorises government to regulate civil behaviour in case of natural calamities
12. National Parks and Wildlife Protection Act, 1972	Authorises government to establish national parks and wildlife reserves, and to evict people from the protected areas
13. Finance Act, (Promulgated every year)	Authorises the government to implement its financial policies
14. Village Development Committee Act, 1991	Establishes VDCs, authorises them to levy certain taxes and to undertake local-level development activities. Prorogues earlier Village Panchayat Act
15. District Development Committee Act, 1991	Establishes DDCs, authorises them to undertake district-level development activities and to collect taxes (land tax, water, cess)
16. Foreign Trade (Regulation) Act, 1956	Authorises government to regulate international trade including trade in agricultural commodities and raw materials
17. Private Firm Act, 1957	Regulates the establishment and operation of private firms
18. Company Act, 1964	Regulates the establishment and operation of private companies including those related to agriculture
19. Black Marketing and other Social Crime and Punishment Act, 1975	Controls trade in agricultural products, cancels the earlier acts established in 1952
20. Civil Rights Act, 1975	Defines and restricts certain civil rights including sale of property to foreigners
21. Immobile Property Acquisition Act, 1956	Authorises government to procure any private property at a rate set by it

Annex 3: **List of Existing Laws Influencing Agricultural Decisions** (Cont'd)

Laws	Spheres of Influence
22. Essential Commodities' Control (Authority) Act, 1960	Authorises government to exercise control over trade in agricultural commodities
23. Corporations' Act, 1964	Authorises government to establish corporate bodies and parastatals to undertake business activities related to agriculture
24. Development Board Act, 1956	Authorises government to establish semi-autonomous bodies for any development-related activities
25. Revolving Fund Act	Authorises government bodies to establish revolving funds for any purpose including agricultural development
26. Act Related to Contracts, 1967	Regulates and defines arrangements for contracts including contract in agricultural trade
27. Standards Measures and Weights' Act, 1968	Introduces metric system of weight and measures
28. Drugs' (Control) Act, 1976	Declares hemp as illicit drug and prevents production of specified crops without prior authorisation of the government
29. Social Behaviour (Improvement) Act, 1976	Regulates social behaviour and exercises control over some rural and traditional social functions
30. *Birta* Abolition Act, 1959	Abolishes the exemptions granted on the payment of land revenue to the owner of *birta* land
31. Aquatic Life Protection Act, 1960	Regulates fishing in rivers and natural lakes
32. Land (Measurement and Categorisation) Act, 1962	Authorises government to undertake new land surveys and to categorise them
33. Ukhada Related Act, 1965	Abolishes *zamindari* system of tenancy and transfers the land to tenants
34. Lands Act, 1965	Introduces ceiling on land holdings
35. Food Act, 1967	Control over food quality
36. Act to Manage (Sale of) Land of the Rapti Dune Development Area, 1968	Authorises government sale of the land by clearing forests in the Rapti Valley
37. Pasture Land Nationalisation Act, 1974	Nationalises traditionally communally-owned pasture lands in the country
38. Land Administration Act, 1967	Introduces *inter alia* formalities and formats for registration of tenants in the land title papers
39. Act Related to Land in the *Jhora* Area 1971	Regularises the distribution of land in Jhora area of eastern *Terai*
40. Forests Act, 1990	Repeals the Forestry Act of 1956 and legalises establishment of users' groups in community forestry and leasehold forestry
41. Forests' Act, 1956	Nationalises forests
42. Feed Act, 1976.	Regulates the production and distribution of animal feed
43. Cooperatives' Act, 1994.	Repeals the earlier Cooperatives' Act of 1950s and reduces the government's control over formation of cooperatives

Annex 3: **List of Existing Laws Influencing Agricultural Decisions** (Cont'd)

Laws	Spheres of Influence
44. Seeds' Act, 1990	Regulates introduction of seeds of new varieties, authorises government for quality control
45. Pesticides' Act, 1991	Regulates import, production and distribution of pesticides
46. Statistics' Act, 1958	Regulates collection, collation and publication of all statistical information
47. Industrial Enterprises' Act, 1992	Repeals the Industrial Enterprises Act, 1961–promotes private sector investment in industries
48. Foreign Investment and Technology Transfer Act, 1992	Repeals the Foreign Investment and Technology Transfer Act, 1981, liberalises transfer of foreign technology
49. National Cooperative Development Board Act, 1992	Establishes a national-level autonomous Cooperative Development Board
50. Nepal Agricultural Research Council Act, 1990	Establishes an autonomous Nepal Agricultural Research Council for agricultural research
51. Water Resources Act, 1982	Delicenses private sector investment in hydro-electricity generation up to 100 kw–protects against nationalisation of the private sector investment in hydro-electric projects. Repeals the Related to Water Resources Related to Canal and Electricity, 1967
52. Civil Service Act 1994	Repeals the Civil Service Act of 1956, regulates recruitment, transfer and promotion of civil servants

Annex 4: **Donor-Funded Forestry Sector Projects in Nepal**

No.	Donors	Duration	Budget (mill)	Project's Name
1.	ADB, UNDP	1986-93	$10.0	Nepalganj Forest Development Project
2.	ADB	1990-95	$21.0	Forestry Programme Loan
3.	AIDAB	1991-96	A$ 9.5	Nepal Australia Comm. Fore. Project
4.	CARE/N	1993-97	$1.5	Syangja Ankhikhola Watershed Mgt. Proj
5.	CARE/N	1990-95	$2.0	Begnas Tal Rupa Tal Watershed Mgt. Proj
6.	CIDA	1985-94	$18.0	Kamali Bheri Int. Rural Dev Proj.
7.	DANIDA	1992-96	$2.0	Tree Improvement Programme
8.	DANIDA	1989-96	DC33.0	Commu. Fore. Training Project
9.	DANIDA	1995-	DK12.5	Watershed Mgt. Proj
10.	EEC/EU	1985-96	ECU5.5	Bagmati Watershed Project
11.	FINNIDA	1991-95	$9.0	Forest Mgt. and Uti. Project
12.	FINNIDA	1994-95	FM5.0	Forest Res. Inf. Sys. Project (II)
13.	FINNIDA	1989-93	FM3.5 NRs1.0	Fore. Sector Inst. Stre. Comp 1
14.	FINNIDA	1990-93	FM37.0 NRs24.5	-do- Com 2
15.	FINNIDA	1989-92	FM9.5 NRs9.5	Int. Watershed Mgt. Project
16.	FINNIDA	1992-92	FM0.6	Forest Mgt. and Uti. Plan for SFDP
17.	Italy	1994-97	$1.0	Inter-Regional Proj. for Participatory Upland Cons. and Dev, Nepal
18.	GEF, UNDP, WMI	1988-2000	$8.0	Makalu Barun Nat. Parks and Cons. Area
19.	Netherlands	1994-95	NG0.5	Bio-diversity Profile Project
20.	IFAD, FAO	1993-96 1997-2001	$18.0	Hill Leasehold Forestry and Forage Dev. Project
21.	ITTO	1993-97	$1.0	Training and Mgt. Dev in Forestry
22.	JICA	1991-94	NRs 57	Forestry Ext. and Demons. Network Project
23.	JICA	1994-99	-	Comm. Dev, Forest and Watershed Cons. Project
24.	JICA	1994-95	NRs 5.0	Forestry Ext. Activities Support Project
25.	Norway, FAO	1992-97	$3.0	Shivapuri Int. Watershed Project
26.	ODA	1994-96	£5.0	Nepal UK Fore. Res. Project
27.	ODA	1993-98	£7.0	Nepal UK Commu. Fore. Dev. Project
28.	SDC/N	1991-96	$4.0	Dolakha Ramechhap Comm. Fore. Dev. Proj.
29.	SDC, GTZ	1992-95	$1.0	Palpa Dev. Program
30.	SNV, TRANS/CIDA, WWS-US, MOT. DOT	1992-2002	NRs 0.3/yr	Annapurna Cons. Area Project
31.	UNCHR	1993 onwards	-	Bhutanese Refugee Project
32.	UNDP, GEF	5 Years	$6.0	Bio-diversity Cons. Nepal Project
33.	UNDP, ADB, FINNIDA	1986-93	$19.0	Sagarmatha Fore. Dev. Project
34.	UNDP, FAO	1986-92	$2.0	Watershed Mgt. Project
35.	UNDP	1994-97	$2.0	Parks and People Project

Annex 4: **Donor-Funded Forestry Sector Projects in Nepal** (Cont'd)

No.	Donors	Duration	Budget (mill)	Project's Name
36.	USAID	1990-95	$9.0	Forestry Dev. Project
37.	USAID	1987-95	$29.0	Rapti Dev. Project (III)
38.	USAID	1995-2002	$11.0	Env. and For. Enterprise Proj.
39.	WB	1995-	JY56.0	The Terai and Siwaliks Fore. Dev Proj. (Fore. Sector Dev Proj)
40.	WB	1987-94	NRs11.5	Rasuwa Nuwakot Soil Cons. Project (II)
41.	WB, UNDP	1990-96	$23.0	Hill Comm. Fore. Programme
42.	GTZ	1994-97	-	Churia Fore. Dev. Project

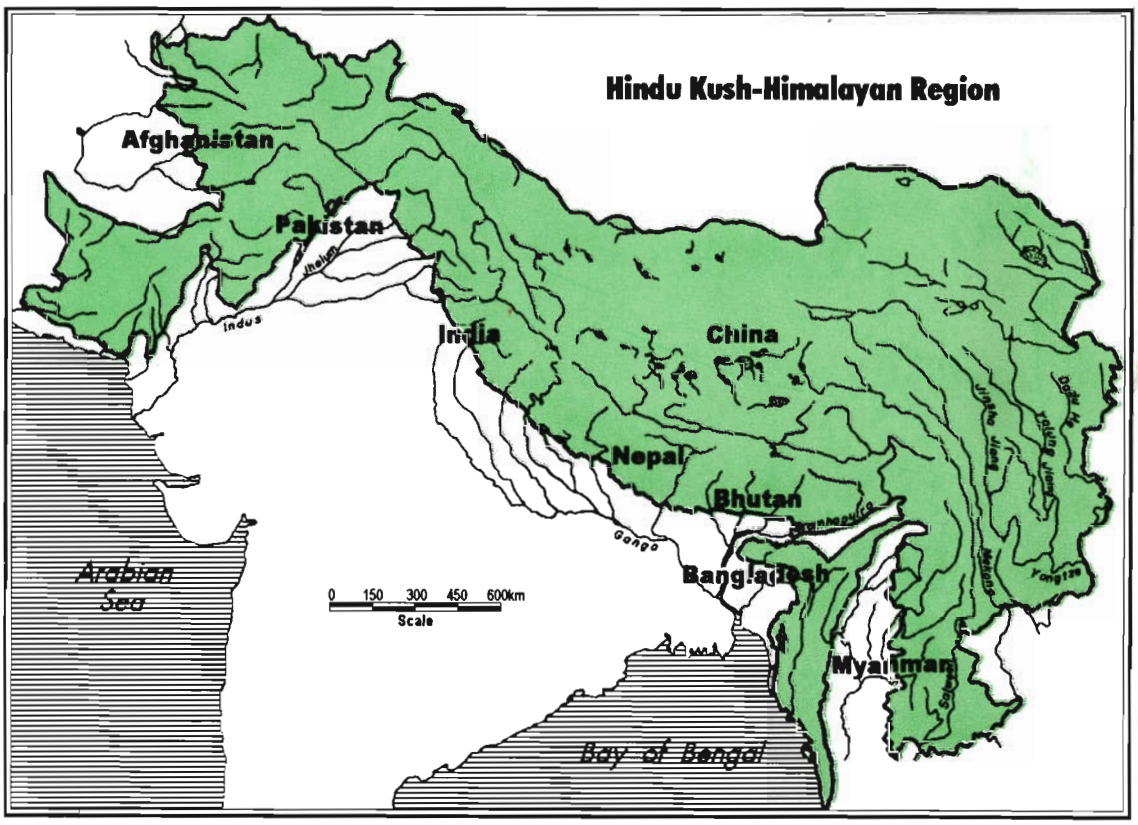
Source: FDP (1995)

about the author

SEEPORT consultancy is a consulting agency for social sciences. It has a core group of four professionals: a rural sociologist, a resource economist, an environmental engineer, and a social ecologist. SEEPORT also has a roster of 60 highly qualified professionals available on request. Besides consultancy, SEEPORT also conducts socioeconomic and ethno-political research, organizes training, and publishes books on contemporary socioeconomic and ethno-political issues

Participating Countries of the Hindu Kush-Himalayan Region

- Afghanistan
- Bangladesh
- Bhutan
- China
- India
- Myanmar
- Nepal
- Pakistan



International Centre for Integrated Mountain Development

4/80 Jawalakhel, G.P.O. Box 3226, Kathmandu, Nepal

Telephone : (977-1) 525313
e-mail : distri@icimod.org.np
website : http://www.icimod.org.sg

Facsimile : (977-1) 524509,
: (977-1) 536747
Cable : ICIMOD NEPAL