

# Forestry



Four

- Top           Cleared slopes with crop field in Hunza, Pakistan  
*Vaqr Zakaria*
- Middle       Bare tree stumps of Guzara forest in North-western Pakistan  
*Vaqr Zakaria*
- Bottom       Piled up timber lots awaiting transportation, Chilas, Northern Pakistan  
*Vaqr Zakaria*

## Chapter Four

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# Forestry

### Introduction

Forestry is one of the most important sectors in land policy, as defined in this study. It is central to most environmental as well as development issues in the Hindu Kush–Himalayan region. Firstly, it provides the most valuable natural resource in commercial terms in the form of timber and other forest products for almost every country (or hill districts thereof). Secondly, natural forests are closely integrated into all but a few farming systems in the region and provide multiple subsistence requirements for farmers and some pastoralists. Forests are also the major repository of biodiversity and perform soil and water conservation functions that are superior to almost all other land uses. Indeed, it is the priority of these different forest benefits that forms the basis of current policy debate in the sector.

There is another reason why forestry is a central issue in land policy. It is that forest policy is the best articulated of all the land policies discussed in this report for all countries except perhaps China. In some parts of hill India for example, the forestry service has been managing forests for about 100 years and, therefore, the environmental impacts are most marked. Arguably, for most countries in the region, forestry is the best-developed professional administration with a long history stretching back into the imperial past of the subcontinent, and this includes legal and regulatory experience, training, and an established professional career structure. The main institution that dominates the subcontinent is the Dehradun School of Forestry to which Indian, Nepalese, Pakistani, and Bhutanese foresters have been sent either for many years before independence or after it. While Pakistan, Bangladesh, and Nepal now have independent forestry schools, it is fair to say that the syllabuses, textbooks, and professional ethos at the school at Dehradun, together with its imperial history still, with its legal and regulatory substructures, maintain a strong continuity today and permeate much of the profession and policy throughout the region, except in China.

The professional qualities of the forest service obviously have advantages in effective policy-making, and it has to be said that there would be far less forest than there is today without the forestry services of the countries of the region. The view that this report takes is that the Dehradun institutional presence in the subcontinent is both part of the solution to as well as part of the problem of effective and socially acceptable natural resource management.

Much of the policy discourse about forest policy in the region deals with the contending criteria for the management of forests. How should forests be managed, who for and to what ends? The stereotypical, classic approach has the following elements.

- Forests must be managed in the national interest in which commercial concerns remain central.
- Customary rights of local users must be recognised, but as a residual management objective, and should be carefully prescribed by law.
- Scientific management of forests is a matter for the state to lay down and implement.
- Watershed protection roles of forests have now been re-affirmed by a tacit acceptance of the theory of Himalayan environmental crisis.

Why then is there any reason to challenge this approach? Why have more populist pressures built up and engaged with the classic approach? Firstly, a cursory glance at the history of forestry in India, Pakistan, and Nepal will reveal a long resistance to government policy on the part of local people. Burning of government forests and poaching have been commonplace over many years and have taken new and political forms today. Social movements, such as the Chipko movement, the testaments of such leaders as Bahaghuna in India, the exposure offered by the free press in countries such as India, and the separatist movements of both a violent and more constitutional form, are all widespread throughout the region. While narrow concerns over forest management are only a part of these movements and form a subtext for a more general anti-state and self-determining role for local people, they remain an important part, and they are also central to this report. It is simply neither realistic nor constructive to confine discussion to the apolitical and technical aspects of forest policy. Indeed, to do so is to ignore the causes of the current problems and to disregard willfully any political (in the widest sense) sources for their resolution. Every country and locality presents different politics of engagement, although there are commonalties.

Secondly, the traditional criteria for forest management, and for judging the success or failure of forestry programmes, point to serious strains appearing

in all countries, except, perhaps, Bhutan. Widespread cutting, both legal and illegal, has increased in many areas of the region. The calling for logging bans in all countries except Bhutan is a symptom of crisis, not of sustainable and long-term planning. In China there have been devastating periods of deforestation that have been recognised, catalogued, and widely discussed in some policy circles there. Yet, the reaction in many circles has been that established forestry practice must somehow intensify its surveillance of the forest, strengthen its institutions, and 'dig in for the long siege'. Certainly, there is evidence, which this report briefly reviews below, that forests in many parts of the region are deteriorating (particularly in the heavily forested states of northeast India). Such a reaction to a general acceptance of retreat has led to a polarisation in public debate, as well as a 'conspiracy of rhetoric', whereby well-tryed, but increasingly ineffective, custodial policies of the old style carry on, arm-twisting by international agencies becomes more commonplace, and policy statements suggesting radical change remain on paper but are not implemented.

One of the key controversies in the academic and policy-making communities is the meaning, significance, and extent of deforestation. How much this debate actually matters in policy circles and in actual policy formulation is a moot point; probably not much. This report takes the view that bureaucratic and administrative cultures and political and strategic considerations are probably more important in shaping forest policies on the ground than academic debates, particularly those surrounded by so much uncertainty. Closure on this issue is beset by many problems. There are, predictably enough, serious data problems. Firstly, only official data of commercial felling are available. These data only concern a proportion of total extraction and are subject to serious under-reporting. This occurs for many reasons: deliberate under-specification of timber volumes by the forestry officials; felling of trees that is altogether unrecorded; and overharvesting on the part of contractors above the amounts sanctioned by the management plan. The rates of forest removal and thinning in forests not controlled or jointly managed by the forestry service may go unrecorded altogether. Alternative methods of assessing changes through time from satellite imagery and aerial photographs have been more promising, but expensive ground verification is often necessary. The most intensively researched country in the region has been Nepal. Even here, there are still unresolved debates. Up to the early 1980s and the implementation of the Nepal-Australia Forestry Project, the conventional wisdom was that the Nepalese hills were losing their forest cover fast. A number of Nepalese foresters and academics questioned this and provided evidence for an increase in forest cover in many areas (e.g., Mahat 1987). Most recently, new data are emerging that suggest that, even in districts that have enjoyed the environmental success of community forestry, the forest may be exhibiting signs of thinning, overuse of the forest floor, and reduction in crown

cover. The intensity of research into changes in forest cover elsewhere in the region is much lower, and the uncertainty therefore higher. Thus, in this report, only a brief and non-quantitative summary of change is given. No original research could be undertaken, and the listing below is a summary of a best estimate.

- India (northwest). Official forestry statistics suggest an increase in forest cover under most categories of forest. This trend is contradicted by the majority of observers, academics, and activists. The rate of decline is relatively gentle but is more serious in local pockets.
- India (northeast). There is strong evidence of rapid deforestation. Arunachal Pradesh has the best preserved forest but here, as in most of the other six hill states, rapid deforestation, exceptionally so in certain areas, is reported.
- Nepal·(hills). It is likely that the forest area and status are stable or gently declining in most places. There are exceptions in the relatively small areas under community forestry and in small reported pockets elsewhere.
- Bhutan. Forests occupy about 72% of the total area and, therefore, the country has one of the best natural forests in the region. The area is fairly stable but deterioration of forest quality due to subsistence needs is reported in some areas.
- Bangladesh (Chittagong Hill Tracts [CHT]). Quite rapid decline of forest cover in the most densely populated western area due to shifting cultivation and both illegal and legal felling.
- Pakistan (Northern Areas, North West Frontier Province). Episodic deforestation over the past 20 years has occurred, particularly since 1988. At present, there is rapid deforestation as a result of high timber prices and illegal felling.
- China (Yunnan). Most areas have undergone marked fluctuations of deforestation and afforestation that accompanied China's varied political projects over the past 60 years, but the net position at present is widespread deforestation. This has been verified by official statistics and publicly discussed at the local level.

## **Bangladesh**

The forest policy of Bangladesh followed the political subdivision that occurred with the end of the British Empire, and then the winning of independence from Pakistan. The Forest Policy of 1894 was felt inappropriate for the needs of Pakistan after independence and was replaced by the Forest Policy of 1955. Its salient features were as follow.

- Forestry should be given a high priority in the national development plan.
- Sound management should be extended to private forests.
- Necessary powers should be obtained to control land use under a coordinated programme of soil conservation and land utilisation in areas subject to or threatened with soil erosion.
- Public support should be enlisted for the execution of forest policy.
- Forests should be classified on the basis of their utility and objectives.
- The beneficial aspects of forestry should be given precedence over the commercial.
- Forest area should be increased by measures such as reserving 10% of land irrigated by canals and 10% of water for raising irrigated plantations; growing trees along canal banks, sides of roads, railway tracks, wastelands, and so on; encouraging farm forestry on a cooperative basis by village communities in compact blocks of cropland set apart for the purpose.
- Timber harvesting techniques should be improved (a special provision for then East Pakistan, now Bangladesh).
- All forests should be managed under working plans.
- A properly constituted forest service of fully trained staff should be made responsible for the implementation of forest policy.
- Forest research and education should be organised along proper lines.
- Wildlife should be protected, and their habitats protected and improved.

This classic forest policy, with an additional focus of the watershed protection role of forests that emerged at the international level in the late 1980s, still emphasised commercial forestry at the expense of conservation. The recognition of people's rights has also appeared, but, further than 'enlisting public support' — something which, with regard to the Chittagong Hill Tracts, the government has signally failed to do — there is no evidence of any implementation of a more participatory and accountable forest policy.

Parallel to the rising concern over continuing deforestation and consequent environmental impacts in India, Pakistan (that at that time included East Pakistan) promulgated its Forest Policy in 1962. The policy dealt with five aspects: forestry, watershed management, farm forestry, range management, and soil conservation. Policy directives for range management and soil conservation were especially applicable for areas that are now in (West) Pakistan.

- The management of forests should be intensified to make it a commercial concern.
- Use of forest products should be improved to reduce rotation, and regeneration accelerated to keep pace with increased harvesting.
- Government-owned wastelands should be transferred to the Forest Department for raising plantations.
- Timber-harvesting in the Chittagong Hill Tracts and Sundarbans should be further accelerated.
- Rights of the Forest Department to forest should be acquired progressively.
- Soil conservation should be given priority in forests and on private lands.
- Farm forestry should be the concern of the Department of Agriculture in non-project areas and of the Agricultural Development Corporation in project areas.
- Research should be directed to form shelterbelts and windbreaks as well as to select fast-growing commercial species for each ecological zone.

This policy was a sharp reversal to that of maximisation of timber-revenue, and involved the aggressive 'gazetting out' of large areas, and control by 'dictat' of the habitat and means of subsistence of large numbers of the inhabitants of the Chittagong Hill Tracts.

The first national forest policy after the independence of Bangladesh in 1971 was notified in 1979. A new set of guidelines followed, rather similar to those of the 1962 act, except that it emphasised research and training and mass mobilisation for the support of forestry policy. In the Chittagong Hill Tracts, this was a far cry from the actual situation, following the flooding of many tribal lands by the vast Kaptai Dam hydroelectric project and continuing abrogation of subsistence rights by a centralising and commercially minded forestry service. A critical evaluation of the impact of the Forest Policy 1979 indicates that the hopes for expansion and qualitative improvements expressed in the policy were not realised for lack of implementation. The policy was also, along with the Kaptai dam, a trigger for armed resistance in the Chittagong Hill Tracts. It contributed to the social unrest that would render its implementation impossible for a whole generation.

The current National Forest Policy 1994 was officially announced in 1995. It was an amendment of the Forest Policy 1979 and was formulated to implement a 20-year forestry master plan. The Government of Bangladesh,

assisted by the Asian Development Bank (AsDB) and the United Nations Development Programme (UNDP), prepared the forestry master plan to preserve and develop the nation's forest resources. The plan provides a framework to optimise the forestry sector's contribution to stabilising environmental conditions and assisting economic and social development. Three imperatives have been identified: sustainability, efficiency, and people's participation. These imperatives are in tune with the Agenda 21 forest principles, adopted at the 1992 United Nations Conference on Environment and Development held in Brazil. It is pertinent that the terms 'sustainability' and 'people's participation' appeared for the first time. The latter, it might be said, offers some of the political compromise required for a peaceful settlement to the present insurgency.

## **Bhutan**

The Forest Service Division in the Ministry of Agriculture is responsible for the management of the national forest resources in Bhutan. The Planning and Policy Division assists in the analysis and formulation of forest policy. The technical inputs and other experiences from the field and other staff of the division form the basis for policy analysis and revision. The concerns and views of the local community are supposed to be incorporated in this process through the participation of the field staff with local interests.

At the national level, the National Environmental Council is the overall coordinating agency for national environmental issues. Conservation and other forestry operations are guided by the National Environment Secretariat. A number of international agencies and some bilateral donors are major partners in managing the forest resources. This international community provides the funds needed for meaningful management and conservation programmes ranging from establishment of an efficient information system to enhancement of national capacity. In this respect, it may be noted that the Government of Bhutan exercises careful screening of donors, ideas, and consultants.

This screening has avoided the involvement of too many donors and their ideas with different development intervention styles; a situation that can be witnessed in a number of other countries in the region. It has also enabled the government to present a distinctive nationalist style of environmental policy that is perhaps as much about making a statement about international relations and its cautious approach to modernisation, as about environmental policy per se.

The forestry management style is an interesting case. Until recently, forests were controlled by the government. However, within the overall

decentralisation policy and the changing role and functions of the forests, there has been a gradual loosening of this state control and a change from policing to extension. Management of forest resources is now shared with the local community. Also, institutional strengthening and further legislative clarification are taking place. The result is that the government still remains the custodian of forest resources, but is now concerned with effecting a smooth transition between management styles that avoids a destabilising vacuum or a polarisation between government and local resource users. However, one major institutional constraint to effective forestry management is the lack of local expertise with technical competence in planning and management. In fact, there are staff shortages in many forestry operations.

Over the last three decades, forest policy has shifted its focus from that of revenue generation to protection of the environment. At the beginning of planned development in the 1960s, it was recognised that a major contribution to the national exchequer would come from forests. The then forest policy was, therefore, to exploit forest resources to generate revenue. It was contemplated that revenue from forests would grow at 10% per annum. This revenue was required for investment in roads, education, health, and agriculture.

However, in 1991, forest policy became conservation oriented: aimed at multiple use of forest resources and involvement of local people in planning and management. Revenue generation was no longer important, although necessary, and could be obtained from scientifically managed areas. The main areas of policy were as follow.

- Preserving the natural ecological balance by maintaining at least 60% of the land area under forest cover at all times
- Developing and managing wildlife reserves in each ecological zone
- Conserving and managing forest resources on a sustained yield basis
- Banning the export of round timber (This is a recent addition to the policy.)

Forestry policies in Bhutan are supported by the Forest Act 1969 and the Forest and Nature Conservation Act 1995. While both acts provide the legal framework for effective forest management, the 1995 act is aimed more at conservation. Some salient features, which can be considered improvements over the 1969 act, are listed below.

- The use of forest resources should be based on scientific management plans.

- Those forests not owned by any individual will continue to be maintained as government-reserved forests.
- Plants that are listed in Schedule 1 are declared to be totally protected.
- Based on management plans approved by the Ministry of Agriculture, local people can now develop and maintain community forests in government-reserved forests approved by the Ministry of Agriculture.
- An individual can develop or register his land as social forest.
- Unlike in the past, trees from social forests belong to the people and there is no need to pay a royalty to use them.
- The procedure for establishing wood-based industries has been streamlined. Authority to grant licenses to establish wood-based processing plants now rests with the Ministry of Agriculture.
- The lack of legal provision for soil and water conservation programmes on private land is now addressed. The act empowers the Ministry of Agriculture to take up soil and water conservation programmes on private land if the government finds it necessary to protect soil, water, and wildlife resources.
- In order to provide smooth marketing of forest products, including those from social and community forests, the Ministry of Agriculture is to issue rules regulating their transport, import, and export.

The underlying objective of the act is to involve local people in forestry management to meet their own requirements and thereby release pressure on government-reserved forests. The government acts as a facilitator and provides technical and advisory services to individual farmers and community groups. This act was formulated and adopted by the people through their participation in the National Assembly. People can provide feedback on the act so that the government can improve it.

Forestry management can be divided into three broad programmes: production forest management; protection; and social and forest extension. Each of these is highlighted below.

- Production forest management programme. The Forest Service Division prepares management plans for reserved forests so that the demand for fuelwood and timber, in particular, is met. At the end of the Seventh Five-Year Plan, a total of 38 management plans had been prepared and implemented. Their objectives are to conserve the natural environment, to meet the increasing demand for forest products and to generate revenue on a sustainable management principle. One component is, therefore, afforestation: logged areas are planted with seedlings before closing the area for regeneration.

- Protection programme. This programme consists of forest fire prevention activity through which fire incidences are checked and controlled; insect and disease control activity to control bark beetle and other epidemics; and forest legislation activities that cover a whole range of legal aspects including the amending, revising, and enforcement of acts.
- Social and forest extension programme. This is a new programme placed at district level under the decentralisation policy. It has the following five, broad components: designation of community forest areas to be managed by local people; community afforestation or reforestation initiatives in degraded areas; agroforestry and private forestry on privately-owned agricultural land; allocation of dry fuelwood for rural consumption; protection of forests from fire and encroachment. Under this programme, the following two national activities deserve to be mentioned. The second of June is celebrated as Social Forestry Day throughout the country. Seedlings are planted in institutional compounds and degraded forests by local people and communities. Environmental studies are now incorporated into the school syllabus. A Nature Study Centre has been established by the Forest Service Division to facilitate school children's study of nature and the environment.

In assessing the overall impact of forest policy, it is necessary to stress that deforestation has never been a critical problem in Bhutan, mainly because of low population pressure and tight state control over forest resources. Nationalisation of forests in 1961 and logging operations carried out by a single organisation that was directly and continuously supervised by the government demonstrated this control. This limited the uncontrolled expansion of commercial logging by regulating the actions of powerful individuals, and community and government interest groups. Furthermore, it resulted in maintaining a good forest cover; Bhutan has avoided excessive forest degradation, with 72.5% of its total area is under forest cover. However, with increasing demand for forest products, the following are some localised problems that show that the forest is subject to some degradation.

With so much forest cover, there should not be a shortage of fuelwood. However, shortage in Thimphu is typical of growing scarcity in some urban areas where the population is concentrated. This has become an urgent national issue; the Ministry of Agriculture is already exploring alternatives to fuelwood consumption. The first target groups are the armed forces, monastic bodies, and some educational institutions.

Some forest areas have been encroached to cultivate agricultural crops, mainly cash crops. There are cardamom plantations in the subtropical humid forests of Sarpang, Zhemgang, Danaga, and Tsirang districts. About 3,500 ha of cardamom plantation were recorded during the Seventh Five-Year Plan. Since this figure was derived from satellite imagery, the actual figure will be greater. These plantations are now showing signs of land degradation, such as landslides and gully formation, mainly because of poor drainage systems.

Cattle-grazing is allowed in government-reserved forests on an annual payment basis. This has resulted in overgrazing that has led to serious problems of soil degradation, gully formation, poor vegetative cover and composition, and poor regeneration processes. Cattle are let loose in forests and are free to graze. Forest areas are also subjected to mounting pressure from the need to develop infrastructure. New roads are constructed through forest areas, open spaces are created to erect electricity transmission lines, and there are other needs, such as construction of buildings, for educational and agricultural extension purposes.

The Ministry of Agriculture should be able to address these emerging problems with the new Forest and Nature Conservation Act. For example, with the change in forestry rules that allows full rights to use and sell timber under the social forestry programme, the option of timber plantation on 'tseri' (land used for shifting cultivation) has become attractive in many areas. This alternative use of tseri will provide fuelwood, leaf litter, fodder, and other minor forest products. Consequently, it will release pressure on government-reserved forests and help the government in managing its forests in a sustainable way.

## **China**

In China, there had been a 'forest policy' under the Xia, Shang and Zhou dynasties for many centuries, but what might be termed contemporary policy was only initiated in 1932 under the Guomindang administration. Thereafter, a several laws and regulations were promulgated from 1979 until the most important revision of forest rules under the market economy system. It is true to say that Chinese forest policy has been much less stable than Indian. Quite abrupt political changes had profound environmental impacts (e.g., the Great Leap Forward, the Cultural Revolution, and the DaGuoFan movement) and many of these were devastating. However, a high degree of local mobilisation has enabled people to deforest and re-forest the same area a number of times over the past 50 years. Most of these mass movements, however, swept aside whatever forest regulations were in place at the time. The present sets of laws dealing with devolution of powers of

management and regulation of market driven forces, which are now impacting on forests throughout China, were passed at the ninth National People's Congress in 1998.

After the establishment of new China, forest ownership was reformed with land reform. The general policy of forest ownership can be outlined as the following: large areas of forest belonged to the state; small areas of woodland belonged to the town, village, or individual according to the convenience of management and production. Woodland previously belonging to individuals or peasants still belonged to them. After enacting these policies, peasants obtained their woodlands and managed them according to their own wishes, meanwhile being exempt from usurious loans. On account of active government support, these peasants, just liberated from semi-feudal society, were strongly motivated to manage their forests. From 1956 to 1979, the government guided forest farmers in a socialist way. The first step was to establish a socialist agricultural cooperative community (SACC). The second step was to incorporate a forest cooperation community into the SACC.

During the Great Leap Forward, the Cultural Revolution, and the DaGuoFan (food prepared in a large canteen cauldron), communism dominated the whole political environment and was, therefore, also the way in which forests were managed. Almost all previous systems and institutions were swept away. Forestry production virtually broke down.

After 1978, forestry production was normalised. The State Council drew up Twenty-five Rules of Forestry. The whole country acted on the principle of Three Fixations; that meant fixing of forest and mountains ownership, fixing of boundaries of private mountains, and fixing of forestry contracted responsibility system. However, in practice, the system of Three Fixations was too simple and lacked any practical theory and management techniques (Zhang Jianguo et al. 1992). The main problems were caused by uncertain forest tenure.

- Forest farmers feared that the policy would change abruptly, as it had done in the past. Thus, after distribution of woodlands to farmers, they were only eager to cut down trees immediately, lest they were dispossessed once more.
- The revision of the property regime did not consider the forest farmer's benefits, so that the farmer lost any interest in planting trees.
- The system of forest ownership became divorced from day-to-day production realities. Forests were consumed, and resources destroyed. Farmers wanted land for food production and to satisfy their

commitments to the responsibility system. The last thing they wanted to do was forest production.

Set alongside abruptly changing property regimes, great uncertainty and powerful economic incentives to convert forest land, there was an extensive array of regulations and government officials that were supposed to encourage the conservation of forests. Local governments at different levels organised related departments to set up forest management organisations and appoint forest management staff. The main tasks of forest management organisations are forest conservation, preparation of contract agreements with units owning woodlands, delimiting the boundaries of forest conservation areas, and organising the masses to protect forest resources. The main tasks of forest management staff are inspection of woodlands, preventing the destruction of the forest, and putting offenders in the hands of a special government agency for punishment.

The current problems faced by forest management in Yunnan province, as in many other forested areas of China, are that forest areas are under enormous pressure from demands of the responsibility system and for land for food production. Many of the poorer peasants have become more vulnerable to food shortages and are obliged to place additional land under cultivation; officials simply look the other way, since denial would lead to serious hardship. Also the policy of placing economic growth above sustainability has led to a reluctance to invest in environmentally safe road construction, adequate industrial waste and domestic effluent treatment, and the planting of trees. Exceptionally high sediment loads were observed in most of the larger rivers of Luquan County and adjacent areas, and these have been verified by local officials.

## India

The history of forest policy in British India, dating from the 1860s, shows that three major objectives of forest policy have been recognised and prioritised at one time or another. These are fulfilment of commercial demands for forest products, preservation of the subsistence needs of local resource users, and preservation of watershed conservation roles.

One of the first comprehensive national policy statements was issued in 1894 and modified in 1904. The objectives of the policy were as follow.

- State forests were to be administered for the public benefit.
- Forests on hill slopes should be protected.
- People were allowed to satisfy their subsistence requirements from minor forests only.

- Wherever a demand for cultivable land existed and could only be supplied from the forest area, land should be relinquished without hesitation.
- Royalty for the government must be collected for various facilities enjoyed by the people of the area.

These objectives were to be reached by the definition and specific regulation of a four-fold classification: preserved forests, timber-supply forests, minor forests, and pasture lands. The subsistence rights of local people were codified in regulations that allowed limited access to the latter two types of forest. The main aim of the Forest Policy 1894 was revenue collection, but also to satisfy the local people by granting them rights and concessions. There was no intention to improve forest management in general; this had to wait until the Indian Forest Act of 1927. However, there is also a history of resistance to the more exclusionary of the imperial forest regulations around the early decades of the twentieth century. While the policy of 1894 had a clear environmental impact, and could be judged an environmental 'success', it is reputed to have caused the out-migration of up to one-third of the population. People's livelihoods had been severely undermined, particularly through the withdrawal of grazing rights. Resentment simmered for some time and culminated in deliberate fire-setting over large areas of Almora District in 1916. The framework for forest management was elaborated upon in the Indian Forest Act of 1927; and partly in response to these problems. In modified form, it remains intact today.

After the partition of British India in 1947, the Government of India declared its own forest policy in 1952. This emphasised a national target of 20% forest cover in the plains and 66% in the hills. However, it was not until the Forest Conservation Act of 1980, and the National Forestry Policy of 1988, that the prioritisation of conservation of forests for watershed management became one of the most important elements of policy.

In the three decades after independence, the shrinking of forest areas and degradation of remaining forests continued. Alarming diversion of forest lands for non-forest purposes also occurred. Encroachments kept mounting, and the situation became politically sensitive. Voices were raised against vandalism and exploitation of forests. The Chipko movement was one such social movement that resonated with the agendas of other smaller movements, environmentalists, and NGOs elsewhere in the country. In the meantime, the Indian Constitution had been amended and forestry made a concurrent subject. The centre could now enact forestry laws. The Forest Conservation Act of 1980 was promulgated to check deforestation. The law made the prior approval of government obligatory for de-reservation of

reserved forests or for use of forest lands for any non-forest purposes. This piece of legislation had a salutary effect on diversion of forest lands, the rate of which came down drastically. However, it also caused some resentment because many projects, for which forest land was required and for which there were no other alternatives, were greatly delayed. The government banned green-felling above 1,000m in the Uttar Pradesh Hills in 1981.

Environmental concern at the international level increased in the 1970s and 1980s. Sustainability of development was the new official rhetoric as stressed in the Brundtland Report (1987). In 1988, a new Forest Policy was again presented by the government to the Indian Parliament. An altogether different paradigm now emerged that reflected these new, global environmental concerns. The policy assigned top priority to the environmental role of forests. The basic objectives were as follow.

- Maintaining environmental stability through preservation and restoration of forests.
- Conserving natural heritage by preserving natural forests and checking soil erosion.
- Increasing forest cover through massive afforestation and social forestry programmes and increasing forest productivity.
- Meeting requirements for fuel, fodder, non-timber forest products, and small timber for rural and tribal populations.
- Creating a massive people's movement for achieving the above objectives. Special emphasis was placed on involvement of women in forest resource management.

A more populist and watershed management approach had arrived. Both the National Forest Policy of 1988 and the central government's Guidelines of 1990 laid down the path that would lead to increasing emphasis on joint forest management. Joint forest management may be a comparatively new slogan, yet it has distant, but still audible echoes, many decades old, in the history of forestry in the Uttar Pradesh Hills. To a certain extent, community cooperation has its roots in the old cultural traditions and values of Uttarakhand, which reflected a closely knit social structure and social concord. However, joint forest management has a more radical agenda and directly challenges the established custodial and often exclusionary style of forestry practice.

In Himachal Pradesh, forest management systems have passed through many stages and vicissitudes through the last century and a half. In the time of princely states, the king ruled supreme, and the community had no rights. In British times customary rights were recognised but decisions were

still vested with the colonial power and the forest bureaucracy. Then appeared a spell of forest over-exploitation during the three decades following independence. Strict custodial approaches were adopted that caused simmering reactions. In the 1970s, the metaphor of social forestry began to assume currency from within India. Then came the period of donor-driven social forestry programmes. Donors advocated participation but retained decision-making authority in ways that inhibited the evolution of effective decentralisation. Lately, some corrections to this approach have been attempted. The National Forest Policy of 1988 distinctly shifted the policy stance towards the protective role of forests and the meeting of community needs as the 'first charge on usable forest resources'. The Joint Forest Management Guidelines (1980) lent a sharp edge, at least on paper, to the objective of involving and empowering communities in forest resource management, and this included the sharing of benefits. The extent to which these intentions became realities is discussed later in this report.

Nevertheless, a number of qualifying statements should be made regarding the implementation of joint forest management. First, joint forest management was only undertaken on degraded lands within villages and avoided handing over any management of more valuable forests. Secondly, the share of non-timber forest produce given to the village varies between 20-80%, and is usually less than 50% (in contrast to the community forestry programme of Nepal that allocates all the harvest, including timber, to the community). Thirdly, the actual implementation of joint forest management in the hills is still, after eight years, extremely slow. The reasons for this are discussed later.

## **Nepal**

Nepal's history of forest policy according to Hobley (1996) can be divided into three broad periods: privatisation (1768-1951), nationalisation (1951-87) and populism (1987 to date). It was only in 1925 that formal forestry policy and administration (then known as 'ban jach') started. The establishment of the first Department of Forests took place in 1942. The forestry tradition soon came to resemble that of India, and the influence of Dehradun became firmly established. Forest policy and administration at the time was merely about how to export more timber from the 'terai' to British India, and to supply wood and wealth to the ruling, feudal Rana families. The Rana regime (1846-1951) had, by the end of their rule, distributed almost one third of the forests of Nepal to various Rana families and other clients in the form of 'birta' and 'jagir' tenure.

The influence of the post war era (WW2) of institutional development of forest services on a global scale began to make its presence felt, most of

which was designed in the context of a more centralised management system 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 uses of forest, it was not out of touch regarding the whims of industrial forestry. The classic forestry education of Dehradun Forestry School, to which almost all Nepalese foresters were sent for training, made the forest service very technically oriented. This was reinforced by the autocratic political regime of the time that made the forest service an extremely authoritative and centralised institution.

In the hills, however, during the Rana period there were no specific policies, although there was de facto recognition of the 'kipat' system (an ancient form of communal tenure in the hills), the 'talukdari' system (whereby taxes were collected by a local intermediary for the government) and 'indigenous forest management systems' (Fisher 1989). In 1957, the Private Forest Nationalisation Act was introduced with the aim of ending the birta and jagir tenure exploited 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 led to tremendous controversy amongst academics and practitioners alike. Although one of the main intentions of nationalisation was to prevent the destruction of the forest and to ensure adequate protection, maintenance, and use 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 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 1985).

Whatever may be the intention of the 1957 act, nationalisation meant that forests that were managed by local people under traditional systems were 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 an 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 contained no more than a handful of trained foresters.

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" (HMG 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, on paper and in law at least, a powerful institution with a technical as well as a judicial role and 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 the disaffection of local people dramatically and led to even greater hostility towards the Forest Department. It also represented a reversion to an aggressive and military version of the classic model.

The Forest Act 1961 was powerful enough to take action against any suspected person and many landless peasants and their leaders (mostly opposition political leaders) were the victims. The forest service was, in a sense, then used as a political tool to suppress opposition leaders who were fighting for land reform and the restoration of democracy. Apart from this, law enforcement was limited to use against the powerless and poor. These legal instruments and powers were exercised in a discriminatory fashion, with the poor and disadvantaged in particular being the target of Forest Department officials whilst the more influential were able to exploit the forest resources at will (Mahat et al. 1986a). Despite all these powerful forest acts, the forest service remained ineffective. It was able to neither protect the existing forests nor place the forest into active management.

The global wind of modernisation, based on green revolution technology, accelerated the conversion of forest land for agriculture and was supported by government incentives to hill migrants to carry out this conversion. There was a massive policy emphasis 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 and Nepal Fuelwood Corporation with a grant from the Food and Agriculture Organization of the United Nations Development Programme (FAO/UNDP). The major forestry activities of the forest service then became inventory control and 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 acts and the forest service was least felt and the indigenous forest management system (Fisher 1989) was strongly established, communities continued to preserve their local forest through communal arrangements. In other places, where local systems were not well established and people felt their forest was taken over by the Forest Department, 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 panchayats took advantage of this (see for example, Hobley 1990), it was not until the early 1980s that provision for such local control was put into widespread practice.

The government admitted for the first time in the National Forestry Plan of 1976 that protection, management, and development of forests scattered throughout the kingdom was 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.

Despite a clear recognition of the need to develop 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 of the target of 1.83 million ha (Karmacharya 1987). Among the causes of failure were the bureaucratic nature of the procedures to hand over forest; the provision of only severely degraded forest to be designated as panchayat forest; the wrong assumption that panchayat was synonymous with community; and control of the forest being given to a committee which in fact constituted powerful elites. The real users of the forest, such as the poor and women, were unaware of the process. Communication between the forest service and the panchayat was only between local politicians and the officer in-charge of the district forest office 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, and all forest designated as panchayat forest was much too degraded to give any immediate benefit.

As in other sectors, all projects to be implemented in the forestry sector are required to undergo an initial environmental examination/environmental impact assessment. These requirements are made mandatory by the Environment Protection Act 1997 and the Environmental Impact

Assessment Guidelines for the Forestry Sector 1995. However, these requirements are fulfilled only cursorily as a routine action without much attention to the complex analysis usually expected in a standard environmental impact assessment. This is a key example of policy guidelines that appear from donor pressure and which, from a rational perspective of environmental management, are useful. However, effective deployment is beyond the existing capacity of forestry officials, and although the guidelines are easy to observe on paper (the requisite signature is routinely provided without the scrutiny of the application), their impacts (or absence of potentially damaging ones) are virtually untraceable on the ground.

## **Pakistan**

Pakistan, shortly after independence, enacted a series of forest policies in 1955, 1962, 1975 and, most recently, in 1991. The first two policies were formulated entirely by representatives from federal and provincial governments, with the only element of diversity being provided by the fact that a range of government departments including planning and finance were involved in the process. As in subsequent policies, these two policies also emphasised the management of public forests and were particularly concerned with the expansion of area under forests. The primary objective of forest management, as envisaged in these policies, was the generation of revenue and the maximisation of yields from forests — environmental and social considerations did not figure prominently in the agenda. The forest policies served to set the tone for a top-down approach towards forest management and reinforced the notion that communities had no interest in forest management and no stake in the preservation of the public forests in particular.

The forest policy of 1975 was formulated in response to the loss of forest resources that resulted from the separation of East Pakistan in 1972. The policy marked an important departure from the first two policies in that the drafting committee for the policy included representatives from both governmental and non-governmental institutions. The recommendations of the policy framers were extensively scrutinised by the federal Ministry of Food and Agriculture and by participants in the Inter-provincial Conference in 1974. The policy was approved by the Council of Common Interests, which oversees inter-provincial issues, in 1975, and it remains to date the only forest policy to be approved by this body. The forest policy of 1975 was the first people-friendly policy enacted in the forestry sector, in that it recognised that the management of 'guzara' forests (private forests that are managed by the state for the owners) should be entrusted to the owners themselves, with the state taking on only supervisory responsibilities. The

policy recommended the formation of owners' cooperatives, but recommended that harvesting should be carried out entirely by public sector corporations. This directive was followed in the North West Frontier Province, but never became operational in the Northern Areas as the Northern Areas' Forest Department did not have the institutional capacity to establish a distinct institution to manage harvesting operations.

The policy of 1975 soon fell prey to political expediencies. The government that had formulated the policy was removed in a coup d'état in 1977 and the new government, which did not wish to continue with the initiatives of its predecessor, restarted the process of analysing the existing conditions of forests, rangelands and other natural resources. From 1977 to 1988, forestry continued to be considered a subsidiary of agriculture, and forest policies were enacted as appendages of agricultural policies.

The revival of interest in forestry as a distinct discipline has much to do with the influence of donor agencies that, though active in Pakistan since the 1960s, had become prominent players in development initiatives at the grass roots by the 1980s. The United States Agency for International Development (USAID) was running one of its largest aid programmes and, in 1989, took the lead in introducing a project on forestry planning and development that emphasised the development of farm-forestry plantations and private forests to meet the country's timber and fuelwood needs. The USAID and the Food and Agriculture Organisation (FAO) advocated a new forest policy that would have a more integrated approach to forest management and would incorporate social and environmental considerations. An international seminar on forest policy, held in 1989 and funded by these agencies, proved to be the first step in a consultative process that eventually resulted in the formulation of the forest policy of 1991.

The policy of 1991 represents a turning point in the history of forest policy-making in the country as it was influenced to a considerable extent by donor agencies and Pakistani NGOs involved in implementing forestry programmes at the grass roots' level without necessarily relying on any support on the part of the Forest Department. The most significant contribution of these grass roots' development programmes has been the demonstration of the participatory approach to forest management, and the 1991 policy specifically mentions the replication of participatory forest management programmes such as, amongst others, the Kalam Integrated Development Programme funded by the Netherlands' government. The policy also placed greater emphasis on research and development than any of the previous policies and emphasised the need to preserve biodiversity and contain environmental degradation. With regard to hill forests, in

particular, the policy is ambiguous. While it mentions the need to conserve these forests, it also talks about intensive management of these forests, mechanised forest operations and increasing the density of forest paths. Nevertheless, like previous policies, the 1991 policy is also concerned primarily with public forests and with using these forests to meet national wood and wood-product needs.

Forestry is a provincial subject and national forest policies cannot be effective unless they are adopted by provincial governments and implemented through provincial forest departments. In the Northern Areas, national policies have traditionally had a limited impact, mainly as the region does not even have the status of a province; the infrastructure for policy appraisal, adaptation and implementation, which does exist to some extent at the provincial level, is not fully developed in the region. Policy directives formulated at the federal level are thus rarely implemented or adhered to and are not owned by the regional authorities, even though representatives from the region were a part of the policy-formulation process. When policies give conflicting signals, as in the case of the recommendations on hill forests in the 1991 policy, chances of implementation become even more nebulous and the policy documents tend to be relegated to the back burner.

In the Northern Areas, where the bulk of forest area is privately owned, and the forest areas occur primarily in tribal areas such as Chilas, Darel, and Tangir—where government authority has traditionally been minimal—the only policy guidelines followed are the ones enshrined in the government's agreements with the tribes. Thus, private forest management in the Northern Areas has continued to function primarily according to the provisions of the 1952 agreement with communities, which laid out certain specific forest management principles and procedures.

## **Commonalties and Differences in Forest Policies**

There are some similarities in the paths of evolution that different forest policies have taken throughout the region. The three major purposes for which forest management has been undertaken have remained in evidence in virtually all forest policies since the last century. There has been a slow shift of emphasis — at least on paper — from the commercial objectives of forestry towards soil and water conservation, biodiversity conservation and more participatory approaches. Different foci, first on the recognition of user rights, and then on a participatory-management relationship with local users, have made their appearance in national forest policies at different times, but usually from the mid 1980s. In all forest policies, including those of China, the increasing globalisation of environmental

policy has been felt. These new agendas have been introduced into national policy-making by the financing of donor-driven projects; some through informal arm twisting by the more powerful bilateral donors, and more by formal conditionalities of loan agreements by multilaterals (specifically the World Bank). The degree of international leverage applied to different countries explains a great deal of the different speeds at which the new priorities appeared in policy documents: most in Nepal, followed by Pakistan and Bangladesh, and least in India, China, and Bhutan.

While the language of policy documents in the different countries of the region, excepting China, has converged, even if new approaches appear at different points in time, the degree and style of implementation in each country have both significant similarities and differences. The most important similarity from a historical point of view has been the enduring professional momentum of the forestry service in each country towards centralisation, authoritative management based upon rational principles, and a tendency, both in policy and practice, to favour income maximisation through commercial exploitation of both natural forest and plantations. This is most true of Bangladesh, Bhutan, China, India, and Pakistan, but less so of Nepal's hill forests (although not at all of its terai forests). All forest policies have, to a greater or lesser extent, made the shift of emphasis towards forest conservation for watershed management and biodiversity conservation reasons, as well as towards a more decentralised and participatory form of forest management, at least on paper. The degree to which these new paradigms actually affect the environment and local people does, however, vary considerably between countries.

Similarity between all policies, except for those of China, can be found, and what significant changes in implementation there are seem to be little more than slight shifts of emphasis from the paradigmatic Indian Forest Act of 1927. However, there are significant changes that are neither wholly rhetorical nor cosmetic. Policy did, and still does, matter. There are important differences in different countries both in policy and in the mode of implementation. Regarding the forests of the eight hill states of northeast India, the ability of the centre and the state forestry departments to intervene in the management of forests held under a myriad of indigenous tenure systems remains severely curtailed. India's forestry service was, and still is, big and confident enough to resist all but the most determined attempts by international and bilateral donors. The foreign financial share of forestry operations in India remains trifling, unlike in Bhutan and Pakistan, for example. The new ideas of biodiversity conservation and the (reactivated) watershed protection role of the forest also resonate perfectly with the classic model of conservation (authoritative, scientific, expert, and

exclusionary). Thus, there now appear additional scientific reasons why the state must take extra care to protect the forest and not allow administrative control to slip from its grasp. The idea of participation derives from donor-led projects of social or community forestry and joint forest management in other non-hill lands of India, but has been slow to be implemented in the hills and has been implemented in a manner on the ground that belies the intentions of the programme. As has been said, the actual areas under joint forest management, and social and community forestry in both Nepal and the hills of India remain small. Furthermore, the amount of discretion that local institutions are allowed in the management of social/community forests remains highly contested, and usually rather limited.

Pakistan has mostly followed the style of Indian forest policy, but in the Northern Areas and in North West Frontier Province the federal state has had to negotiate particular forms of joint management control in order to fill the policy vacuum left by the removal of the local princely rulers. Much forest remains in private hands, managed by common-property resource-management institutions, with advice and guidance only of the forestry service. Nepal's forestry policy moved rapidly from its late feudal origins up to the 1950s to a classic, nationalising stance that is drawn from the style of the Deharadun School of Forestry at the time, and to which it sent most of its forestry professionals. It has since reversed some of its priorities and responded to international pressure for a more participatory approach, in which it is now a regional leader.

Bhutan is an interesting case in which the country was concerned to move from a pre-modern administration to a modern one. It also initially adopted a classic stance that emphasised scientific management for commercial ends, but later asserted an independent and more participatory style. There were early successful measures to nationalise all forests, and timber processing was undertaken by a single parastatal company. Increasing pressure from international donors towards sustainability and participation was undoubtedly felt, but the careful screening of donor ideas and personnel mitigated its full force. Participatory forest management is still in the initial stages, and the enabling environment is still being developed and tested. Like Nepal, Bhutan does not have an entrenched confrontational history between forest department and local people, as does India.

The roles of forest in watershed management, as a site for biodiversity and in providing inputs into agricultural systems throughout to the region have been intensively researched. This report cannot review the field in detail but will highlight a number of key scientific issues relevant to forest policy.

## Role of Forests in Soil and Water Conservation

Many experimental and empirical studies, particularly in the Hindu Kush-Himalayan region, have shown that forest cover is superior to other land uses in reducing run-off and variability of stream flow, in minimising nutrient loss, and soil movements, such as slumping, gullyng, topsoil loss and mass-wasting, and that these functions are particularly critical in areas of sloping lands. This incontrovertible body of international scientific work formed an important part of the construction of the 'theory of the Himalayan environmental crisis'. It has become a major cause célèbre, particularly in the forest policy debate, and has been used as a scientifically authenticated justification for the re-affirmation of classic custodial roles in forestry protection, and for a focus on watershed management for many projects for at least a decade or more. This report takes an agnostic line on the extent of the generality of the environmental crisis in the Hindu Kush-Himalayan region. However, it is likely that there are serious cases of non-reversible land degradation in some places and also that deforestation has been a major factor. This may be the case particularly in drier areas at high altitude and with less precipitation where the resilience of the biosystem is lower. At the same time, there is a considerable degree of scientific uncertainty surrounding the importance of 'deforestation' (as defined by most forestry services) in accelerated erosion. Part of the problem results from a professional judgement about degradation as being any departure from narrow scientific management norms. Instead, a blanket judgement, concerning other definitions of land degradation and other land uses considered sustainable, may not be made so rapidly and invariably against alternative definitions and practices. There may indeed be other management techniques that can be termed deforestation in formal terms, but that do not increase erosion rates at all. In a general report such as this, all that can be done is to raise this issue, and provide a few illustrations that point to the need to re-examine the scientific justification of outlawing some alternative types of forest use.

For example, conversion of forests to other land uses has complex and often site-specific environmental impacts. Under certain circumstances, conversion of already degraded forest to irrigated paddy terrace or well engineered (sloping, unirrigated) terrace may actually decrease rates of erosion. Again, conversion of mature sal (*Shorea robusta*) forest to coppiced secondary sal forest may actually increase the protection of soil from rain splash and increase the rate of production of useful biomass for subsistence purposes. It is scientific findings such as these that can add important qualifications to the conventional reasons for forest protection on the grounds of watershed protection. There is not much evidence that research findings such as these find their way into the policy debate.

A second example is the much-debated issue of the environmental impacts of shifting cultivation, which will be discussed in the following chapter. However, the policy assumptions that all types of shifting cultivation under all circumstances cause environmental degradation in terms of increased soil and biodiversity erosion and nutrient loss have remained impervious to a developing field of research that underlines the diversity of shifting cultivation techniques and throws doubt on the universal condemnation of shifting cultivation. At present, it is banned in every country under study in the Hindu Kush-Himalayan region.

A third example concerns the focus of forestry research in the region. It is true to say that the vast majority of forestry research, also reflected in forestry syllabuses in forestry schools in the subcontinent, concerns the commercial production of timber for sale. There is also an emphasis on reforestation with single species and establishment of plantations in single stands. The status of research on the management of natural and multispecies' forest is not nearly so well developed. The direction of policy is towards participatory forest management in which multipurpose natural forest must remain the central focus. At present, the Indian Joint Forest Management Research Network is currently undertaking research into this still neglected aspect.

Formal scientific research into forestry management has had little dialogue with the multiplicity of local management systems. It has not had to, since local and official management objectives have been hitherto mutually exclusive. Most hill people have been managing their forest for centuries for a wide variety of purposes. It is only in the countries that used to be parts of imperial British India that the state has had a strong presence in forest management for a long time. This history has marginalised and undermined indigenous technical knowledge and common-property resource-management institutions. In other countries not so affected by this history, it is easier to recognise the survival of local technical and institutional management systems. In Nepal, for example, there are many accounts of such complex and sophisticated technical management systems. However, there is strong evidence that the nationalisation of forests in 1954 undermined both local technical knowledge and the authority of common property resource-management institutions. It is now that a more participatory approach has forced a new dialogue between the state and its science and local people with their knowledge. Participatory management plans constitute this dialogue. However, even this participatory drive on the part of the Indian joint forest management may also further undermine local systems of management, whereby joint forest management committees are set up in parallel and overlapping already functioning indigenous organisations.

The management plan is at present the instrument of implementation of scientific forestry principles at the village, circle and division levels. It specifies areas for re-forestation and for felling. It details the specific trees to be felled and possible modes of cutting and removal. The scientific basis for harvesting timber for sale has long been established and is reflected in theory behind the plans. However, a more hybrid set of management objectives might be established, through which alternatives are incorporated. Thus, more flexibility in management and more participation of local people and local knowledge, plus the recognition of new scientific research, may not increase land degradation in terms of accelerated erosion at all.

## **The Story of Felling**

The pressures for felling the forest for commercial purposes in the Hindu Kush-Himalayan region are immense and increasing. They are highest in the most densely populated areas with good road and rail connections and close to centres of industrial development. The construction of highways in the region has been frequently made for strategic reasons (e.g., to and within the Chittagong Hill Tracts in Bangladesh, the Karakoram Highway in the North West Frontier Province and Northern Areas of Pakistan, and in four of the states of northeast India). Timber-felling pressures are propelled by high timber prices, in turn created by a large potential demand from the relatively large non-hill populations of these countries. The exceptions to this are the Nepalese hills and Bhutan. (In the Nepalese case, it is the terai forests that satisfy the commercial demand for timber, and where commercial demand confronts subsistence needs in the most stark fashion, but these areas fall outside the brief of ICIMOD and this report).

Timber exports serve a large and growing timber processing industry in almost all countries (for furniture-making, packaging, construction and paper industries). Statistics suggest there has been an enormous increase of production in these industries in the region as a whole. In some cases, timber is the only major revenue-raising activity. In many of the northeast Indian states, the sale of timber provides the main source of income for small farmers as well as more wealthy chiefs, many civil servants and politicians. As stated elsewhere in this report, timber pays for expensive election campaigns and underwrites many local patron-client relations. In northwest India too, there have been intense pressures for felling at an unsustainable rate. To quote Sunder Lal Bahuguna (1986): [with reference to hill areas of Uttar Pradesh]:

“While a moratorium on felling of green trees stands, heaps of sleepers near Thadujab and other places on the banks of the Tons tell the tale of organised plunder of forest... plunder of forests is a common feature in the catchments

of Bahagirathi, Alaknanda, Pindarr, Ramganga and Kosi. In remote areas, where there is nobody to check, the plunder continues unabated.”

In China, the most recent move towards a contract system for achieving particular targets has put pressure upon villages, townships, and counties to seek revenues from timber felling. China as a whole is enjoying high rates of economic growth which create a lively local market for timber. Although many regulations are promulgated at the county level and above, they are not well policed. There is widespread confusion in tenurial matters, and many individuals have de facto privatised areas of forests and other natural resources under conditions of great uncertainty, all of which have discouraged sustainable use.

Set against these commercial pressures are laws, regulations, and, in some areas, forest management plans. The major professional task of forestry services is custodial: it has been performed with a considerable degree of success for a long time in India and Pakistan. However, there is no direct incentive to uphold this custodial and regulatory task other than professional pride and fear of reprimand in the case of dereliction of duty. The service at all levels, therefore, acts as a gate-keeper to keen commercial interests that can offer handsome inducements to relax these regulations. Such a situation requires connivance of others in the service, which may explain the patchy nature of the corruption. The symptoms of this kind of rent-seeking are familiar. The purchase of potentially lucrative forestry postings became commonplace at particular periods. The quick turnover and instability of these favourable rent-seeking opportunities mean that the successful incumbent must reap a return on his investment as quickly as possible, thus increasing the rate of flow of black money through the forestry system and rapid illegal felling of trees. There are a number of ways in which these rents may be realised. Contracts for felling are usually put out to open tender. However, a minister may demand that his subordinate submit all contracts to him alone. His own clients will be awarded the contract, even though their tender may not be the cheapest. Indeed, the most extravagant tender may be accepted by the minister, and honoured at the expense of the forest service, and to the benefit of the minister and his clients. Also, there are standard procedures for under-recording timber volumes awarded to contractors, and the difference between these and actually harvested timber will be reflected in the level of inducement.

Much anecdotal evidence of this kind was collected by researchers and the authors of this study. A case study of forestry practices in the Northern Areas of Pakistan also illustrates this issue. This study includes it here, not because it represents the worst case of this type, but because it was well researched and illustrates a widespread challenge to future forest management. The reason for discussing this sensitive issue is not sensationalist, but to draw attention to

the problems of entrusting the sustainable use of forest to a regulatory bureaucracy that has little incentive other than professionals pride and integrity to uphold their custodial role and which is, therefore, particularly susceptible to informal inducements. Also, none of this is new, and in many policy circles it is openly discussed (e.g., during the World Bank country strategy consultation exercise in Kathmandu, September 1998 and in their documents concerning lending policy to countries of the Hindu Kush–Himalayan region).

## **Participatory Forestry: Fashion or Necessity?**

The previous sections have described a well-tried and tested management style in all countries except China, some evidence of increasing pressures on forestry services, and also a rhetoric (partly realised in some instances) of the participatory management of forests. More involvement in the management of forests by local people is not only a technical issue, but also an ethical one involving environmental entitlements, and there is a long history of their abrogation that continues today. Forests are used by farmers and pastoralists throughout the region and appear as essential constituents of many aspects of their livelihoods. Forests, wherever moisture conditions are sufficient for the growth of trees, form an integral part of almost all farming systems. They provide an enormous range of essential inputs for subsistence which includes fuelwood, timber for house construction, roofing grass, leaf and grass fodder, medicinal herbs, wild food, and raw materials for petty commodity production (e.g., bamboo for baskets). They are essential sources for nutrients for agricultural soil. It is this 'transference of fertility' that links agricultural land under private property to forest land under state or common property. The practice of shifting cultivation is different, but only in degree, whereby nutrients from existing trees and other biomass are converted to nutrients for private use in situ by burning rather than cycling biomass through livestock.

In virtually all areas of the Hindu Kush–Himalayan region, population pressure on forest use has intensified through demographic growth and through state-sponsored schemes that take land out of use by local farmers (e.g., hydroelectric schemes, private or state plantations, national parks and reserved forests). However, the 'moral economy' of peasant society usually provided a low-level safety net for the poor, and access to the forest for subsistence needs was not usually denied. It may be noted that the more aggressive exclusionary forest policies of the classic mould deny this safeguard of the moral economy, with the result that livelihoods are destroyed and people have had to migrate. The denial of these rights has fallen disproportionately on those endowed with poor private resources of land, upon women who undertake most of the tasks of extracting and using forest produce, and tribal groups at the political margins who found themselves living in the best preserved forest of the region.

Each country has had a different policy history and has been experimenting with a variety of approaches. These are joint forest management, the van panchayat system and social forestry (India), community forestry and community leasehold forestry (Nepal), social forestry (Bhutan), *guzara* forests, forest cooperatives (Pakistan) and various policy measures in the Chittagong Hill Tracts (Bangladesh). All of them share the following characteristics.

- The recognition of user rights, although having a long history in custom and in law, has undoubtedly been strengthened.
- In principle, these user rights have been re-interpreted in most, but not all, national forest policies as entitlements of local people.
- A substantial shift in the global developmental discourse towards equity, gender sensitivity, and the championing of indigenous knowledge has occurred and has engaged with a classic, male-dominated profession with a custodial orientation.
- Empirical evidence of continuing deforestation in most areas has prompted a search for alternatives that shift the cost of management and policy from the forestry service to local people.

One of the most difficult issues to clarify is the extent to which this policy shift in forest policy is reality, or remains on paper only. Much of this change in direction is donor-driven and it has met with professional resistance from forestry services almost everywhere. There is considerable evidence in the form of the slow uptake of participatory forestry in India and even in Nepal, which is credited with being the leader in participatory forestry. There is a high degree of cynicism amongst many foresters who feel they are disempowered. Their professional expertise is being rendered irrelevant and their authority deliberately undermined. The few pioneers of this type of forestry (forestry professionals as well as intellectuals and activists) deserve mention and their early efforts in many ways helped to shape the form of international intervention in forest policy. However, they failed to form an 'epistemic community' (a cadre of self-referencing and networked professionals who share a common and distinct set of values and behaviour) of sufficient weight within the profession. Instead, they became isolated and often took up employment either abroad or in the foreign-funded projects that promoted their own vision of the future. Professional resistance still remains today in the form of foot-dragging, routine participatory processes (e.g., setting targets for the number of participatory rural appraisals), and reducing their personnel interactions with villages to a minimum. In many areas, participatory forestry remains 'old wine in new bottles', in the same way as many of the components of national environmental strategies discussed in Chapter 3.

For all the resistance to participatory forestry, enormous changes in the profession have taken place. Syllabuses in forestry training colleges have changed, although not markedly. Social and community foresters are now trained in many colleges although there are reports of discrimination in job selection. Programmes are now established in all countries, and Yunnan is one of the few areas in China that has taken social forestry seriously. It is quite clear that such a major reversal of management objectives, professional expectations, and administrative reform is a long process, and the social and environmental impact from a more participatory approach cannot be expected to materialise in the shorter term.

The measurement of success of such a transformation can never be captured by a single indicator. It is a gradual process. As always with complex and profound changes, the 'learning institution' becomes crucial. One of the most important areas of this learning process is at the interface between the forestry service and the local community. It is in the detail of negotiation and in the form that local institutions take that 'success' takes root. The research undertaken by this project of the impact of social forestry on the ground was of necessity cursory, and can only be briefly summarised here. Firstly, community forestry can be established with wide consensus most easily under conditions of relative abundance of forest and pastures (not a common occurrence). Secondly, socially cohesive villages (e.g., in which a single ethnic group or caste predominates) perform community forestry much better than the obverse (a case study of the Phewa Tal Watershed Management Project is presented elsewhere). Thirdly, the setting up of new participatory forestry groups may undermine or confuse existing groups where they exist. Finally, although gender aspects of participatory forest management have been formally acknowledged and incorporated into reserved places in user groups and forest committees, there has been slow progress in ensuring improved women's control of forest produce under the new dispensation.

### **A Cautionary Case Study: The Impact of Forestry Policy and Practice in the Northern Areas, Pakistan**

This is a summary of a case study reported in the Pakistan country study. It is reported in some detail here since it illustrates well the problems of implementation of working plans, the problem of a long-established mistrust between state and local people over forest use, and the appropriation by local leaders of windfall profits from felling. It should be noted that the choice of case study from this country in no way implies that these problems are any more pronounced in Pakistan than elsewhere.

The procedure for sale of timber from private forests in the Northern Areas is supposed to be as follows. At least 60% of the conglomerate of owners of a

particular forest area enter into an agreement with a timber contractor according to which the standing timber is sold to the contractor who makes the agreed payment directly to the owners. The timber is supposed to be harvested according to principles of forest management as delineated by the Forest Department. Thus, the Forest Department draws up a working scheme for each sale agreement and is empowered to supervise the harvesting operation. The working schemes are made for periods of 10–15 years and contain prescriptions for harvesting of timber from a particular forest area over that period of time. Plans for regeneration of forests are also included in the working schemes. The contractors are responsible for the regeneration of forests as well as the timber harvesting, and the Forest Department provides seeds to contractors for this purpose.

The agreement between the owners and the timber contractors, the terms of which have been supervised by the Forest Department, is then attested by the Assistant Commissioner or the Deputy Commissioner of the district. The timber is auctioned in the open market and the sales' proceeds are then returned as royalties to the state and to the owners, both parties getting 50% of the amount. The amount accruing to the state is actually determined before exit permits are issued for the timber to be taken down-country. The amount is decided upon according to market prices prevailing in the main timber markets of Lahore and Peshawar. Since the timber contractor has effectively purchased the royalties from the owners at the time of finalisation of the agreement, the 50% royalties that are supposed to accrue to the owners are actually paid to the contractor. Seven per cent of the wood volume extracted goes to local communities for domestic use.

The system of forest management is generally believed to have strengthened the role of the timber contractors or the middlemen who control logging operations. Forest owners tend to hand over all aspects of timber extraction and marketing to the logging contractors as the contractors are willing to pay them a mutually agreed upon amount even before harvesting actually begins. The owners do not have the management or skills needed to organise large-scale logging operations, and their reliance on contractors for timber extraction is thus absolute. Marketing is again a specialised activity, and, even if the timber is marketed satisfactorily, the procedures for payment of royalties are normally arduous and the process takes too long. The owners of the forest tracts would, in most cases, rather forego some proportion of the financial returns due to them to avoid entanglement in cumbersome bureaucratic procedures.

The conservation of natural resources is now recognised to be directly linked with tenure considerations, thus people who have tenurial rights over a resource will have an interest in investing in its conservation. When rights

of tenure are not defined, a free for all ensues and a number of stakeholders compete for the right to exploit the resource. The tribal people of Diamar, where the bulk of coniferous forests are located, have never felt comfortable with the system of management of guzara forests, wherein the Forest Department is involved in the harvesting and sale of timber. The general perception is that if the government becomes involved in the timber trade, the rights of the local people will be either subverted or denied altogether. This impression is encouraged by contractors who use this atmosphere of distrust to their advantage and encourage owners to collude with them in practising illegal harvesting.

The forest management systems practised in the Northern Areas have thus effectively reduced the Forest Department to having a side role in the exploitation of forests. The policy of recognising the owner's right to negotiate with contractors for timber extraction and harvesting has, due to the prevalent atmosphere of mistrust in the absence of adequate awareness-raising programmes and in the face of an ineffectual Forest Department, resulted in widespread destruction of coniferous forests. The Forest Department's authority has been further denigrated by the collaboration between owners and contractors. The owners of private forests, particularly in the tribal areas of the Diamar district, do not recognise the authority of the Forest Department to manage their forests and feel that their traditional rights have been usurped without their consent. The working schemes prepared by the Forest Department are generally acknowledged to be irrelevant and are hardly ever followed. The Forest Department has lost out on its royalty rights, as corruption is endemic, fraud in royalty payments is common, and rates of extraction are far higher than prescribed. The restructuring of the Forest Department is one attempt to bolster its image.

The system of timber extraction was working reasonably satisfactorily until 1988. That year was, however, marked by a series of sectarian clashes in the Gilgit district that rapidly escalated into armed clashes between rival sectarian groups. As the newly elected government looked increasingly ineffectual and the law and order situation continued to deteriorate, timber contractors began to exert pressure on the government to issue more timber extraction permits in return for assurances that the contractors would exert political influence to restore peace. The government responded by indiscriminately approving logging contracts and turning a blind eye if the volume of wood extracted was greater than the amount prescribed in the working scheme for any particular block.

From 1988 to 1991, an estimated 10,200 cu. m of wood was extracted from the private forests of Diamar (Iqbal 1998) after payments as low as Rs 100 per cu. m for conifers and Rs 70 per cu. m for fir. The wood was then fashioned

into sleepers and transported to collection points where the Forest Department assessed the value of the produce and collected royalties before issuing exit permits. Communications with Forest Department officials suggest that the royalties collected at this stage have generally been of a lower magnitude than would be expected, and instances of departmental corruption are relatively high.

There have been some instances of imposition of fines for excess cutting, but, up to 1991, the rate of the penalty was just Rs 1,800–2,800 per cu. m. With market prices ranging from Rs 3,500–8,800 per cu. m, the fines were hardly punitive even when imposed. In 1991, the fines were increased to Rs 3,000–3,900 per cu. m, but market prices were still high enough to render the fines ineffectual. The Forest Department policy dictates that once fines are paid by the contractors, transit permits are issued to transport cut timber out of the forest areas and into central depots. With fines at ridiculously low levels, it was no problem for contractors to pay the required 'cess', receive their transit permits and transport timber to the collection points from where it is taken down-country. An estimated 31,130 cu. m of timber was extracted from Diamar within a two-year period from 1991 to 1993. Thus the fine imposition and issuance of permits policy proved, more or less, to be a complete failure.

In October 1992, the federal government imposed a complete ban on logging in response to the widespread floods of September 1992 that were widely believed to have been caused by extensive loss of tree cover in the northern watersheds. The ban did not take into account the timber needs within the country; nor did the directive distinguish between required harvesting of deadwood and illegal logging. In the Northern Areas, the ban effectively meant that cut timber could not be transported out of the forest areas or fashioned into sleepers, and consequently large quantities of valuable timber began to decay on the forest floor, hampering natural regeneration and the growth of grasses. The situation was obviously untenable, and, in 1994, the government allowed contractors to transport cut timber out of the forest areas and into commercial depots for assessment by the Forest Department. The order extended only to timber that had been harvested before the 1992 ban. However, the Forest Department estimates that permits were issued for the removal of more timber than the estimated volume of cut timber in the region.

As permits for cut timber continued to be issued, illegal cutting continued unabated and the government was forced to reconsider its position. In October 1996, the government finally imposed a complete ban on the transportation of timber and the issuance of transit permits was completely stopped. An estimated 11,320 cu. m of timber is now stacked in forest areas and collection points around the Northern Areas.

The ban on logging and transportation of timber seems to have checked illegal cutting to some extent, and has certainly stemmed the flow of timber from the Northern Areas to the timber markets down-country. Although this is a gross wastage of a valuable resource, the government cannot take the risk of allowing the transportation of this timber as the Northern Areas Forest Department does not have the capacity to check illegal logging or violations of the working schemes. The timber contractors, who control the market in Pakistan, responded to the ban by shifting operations to the province of Kunar in Afghanistan, and the timber markets of Lahore and Peshawar have since been flooded with Afghan timber. This development has helped to maintain timber prices at pre-ban levels. Nevertheless, the imposition of the ban is not a long-term solution and the Forest Department has to think in terms of more structural changes in the system of forest management to ensure forest protection.

## **Conclusions**

- Forestry has become increasingly politicised at all levels. The classic model of forestry based upon custodial principles and justified by its own forestry science can no longer be the only arbiter of future policy.
- The classic model has been successful in the past according to its own criteria, but it is now less so, as evidence for continuing forest degradation mounts in most areas.
- In the absence of effective policing, many state forests (e.g., revenue forest, minor forest, unprotected forest) have become open access and have ceased to become forest except in name (and in some statistics).
- There are increasing pressures for felling from commercial sources and from farmers for subsistence needs. Rent-seeking is on the increase in most services, although patchy; and, in some cases, improvements have been made.
- The custodial model may still be appropriate for some biodiversity/wildlife projects on technical grounds, but even here, negotiation with local communities is essential. For other multispecies' natural forest that are used by local people, participation has become a practical necessity. Scientific and institutional knowledge on how to continue and improve early initiatives is either insufficient or not seriously considered in the policy process.

There are ethical issues about environmental entitlements that are currently addressed only through forest regulations. Management criteria, drawn from multiple uses for subsistence, should reflect these ethical issues.

# Agriculture



Five