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Credit:
(Upper left) —Brother and sisters in Cambodia
Photo: Kazuhiro Harada

(Middle left)— Boy in swidden cultivation area in Cambodia
Photo: Kazuhiro Harada

(Lower left)— Weaving rattan in Kalimantan, Indonesia
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(Upper right)— Swidden cultivation in Sumatra, Indonesia
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(Middle)— Mother and child in Cambodia
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(Lower right)— Paddy fields in flooded lowlands in Cambodia
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PREFACE

Makoto Inoue
Project Leader

The goal of the forest conservation project is to develop strategies for desirable forest conservation and sustainable forest management. The project has set out to develop the following guidelines and recommendations to promote the participation of local people in forest management. The outcomes of the FC project are *Village Action Guidelines, District Policy Guidelines, National Policy Recommendations.*

These outcomes were published both in local language and in English in order to support and facilitate the participation of local people in forest management for target countries/areas such as Indonesia, Laos and Far East Russia.

The aim of the *Policy Trend Report is* to disseminate information on aspects of our research activities to all interested parties, as well as to provide a basis for discussion on the further development of guidelines and recommendations. All papers included in the report have been reviewed by outside reviewers.

Any comments or suggestions on this report would be welcomed. Please contact to the following person by post, facsimile or e-mail.

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Community Forestry in Nepal: A Comparison of Management Systems between Indigenous Forestry and Modern Community Forestry

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Abstract

This is a review of forest management in Nepal that focuses on the differences between indigenous systems and those introduced by the government and international non-governmental organisations (NGOs) under community forestry programmes. It includes an analysis of which system is more feasible for implementing sustainable forest management by comparing an indigenous forest management system with community forestry. As well, the evolution of forest management implementation in Nepal through the populist paradigm of community-based forest management will be discussed. First, it will examine how forest management systems have shifted, by defining the differences between the traditional indigenous forest management system and community forestry. Subsequently, the features of community forestry as a political intervention, and its dynamic characteristics and evolutional processes, will be examined. A key factor of this study is the study of institutional arrangements, including property rights, and the role of the state and its interactions with local users in both the indigenous forest management system and community forestry. It aims to analyse how effective forest management is carried out, in terms of the improvement of livelihoods and the regeneration of forest cover, arguing that the presence of such institutions is vital to achieving the goals of sustainable forest use. The research detailed in this report, primarily from secondary resources, is used and analysed in the context of community forestry and the indigenous forest management system in Nepal.

Keywords: Indigenous forestry, Community forestry, Self-organised institution, Property rights, Relations with the state.

1. Introduction

1.1 Forest management systems and local communities in Nepal

1.1.1 Characteristics of forests and local community

In Nepal there are different ethnic and religious groups with their own social structures, such as the caste system and hierarchical income groups, which vary according to geographical location (Varughese and Ostrom 2001). As a result, there is a diversity of community management systems relating to forest use, which are constructed by the social nature of property embedded in the cultural and moral frameworks of each community (Messerschmidt 1985; Li 1996).

Due to the beneficial functions that forests provide, however, forest lands have attracted various actors and stakeholders, including the state and private enterprises as well as local forest users. They have had different interests and have built up distinct interactions with the forest in order to satisfy their needs in economic, political, and social terms. Consequently, the Nepali people have faced an increasing loss of forest areas, and contested usufruct rights for forest uses with a large number of various stakeholders, as the values of timber and other natural resources have risen (Hobley and Malla 1996).

1.1.2 Changes of forest policy and management system

As forest losses and degradation are recognised and perceived by the state and local communities, forest policies have been changed. Along with the revision of forest policy, local communities have been also forced to change their familiar management systems or relationships with other social actors.

The nationalisation of Nepal's forests in 1957 ignored the diversity of existing management systems and took over the responsibility and autonomy of local people to manage the lands, converting community lands into state lands. There were limitations, however, on the state's efforts to enact the nationalisation policy as originally intended. Consequently, it failed to effectively manage the country's forests and to ensure the livelihoods of local communities.

Therefore, in the 1970s, the importance of local users' participation in forest management was reconsidered by the government after recognising the effectiveness and benefits of common property management (Brown et al. 2002). At first it decided to devolve the power and authority over resource use to the community level as part of the decentralisation process, returning property rights to communities.[1] Community forestry

1 Decentralisation is a process whereby responsibility and power, initially under the central authority, is increasingly shared or taken over by one or more sub-units with the capacity and capability to efficiently and effectively deliver the agreed upon services.

programmes were initiated on an experimental basis in the 1980s. Projects were established by policymakers, field staff in the Forest Department, and project staff of the National Community Forestry workshop. Eventually, community forestry was legally implemented with the 1993 Forest Act and the 1995 Forest Rules.

The modern community forestry approach is based upon aspects of indigenous forest management systems that were practised until the advent of nationalisation. The study of the era when indigenous forestry was carried out as a form of privatisation proceeded; as a result, it was found that forest lands did not have clearly defined owners under the land grant system. Therefore, in community forestry—although forest ownership still remains with the government—the authority and control of forest products and resource management has shifted back to the hands of communities.

1.2 Aims and framework of this report

At present, forest users in Nepal have the responsibility of managing communal forests and property granted by the government, and thus they also have de facto use rights and rights to control the land (Hobley and Malla 1996; Gilmour and Fisher 1998). There are several problems, however, that need to be dealt with in order to achieve the goals of setting up a community forestry project plan:

- Establishing self-organised institutions in order to effectively manage communal forests (see Section 4 below).
- Excluding beneficiaries from access and use of forest by providing property rights to the local community (Section 5).
- Establishing effective relations among the state and local community so that the government and local people collectively implement sustainable forest management (Section 6).

It is therefore necessary to determine whether there are further aspects of indigenous management systems that should be applied to solving contemporary difficulties that the paradigm of community forestry does not currently address. Both systems must be critically appraised to determine their suitability in providing the needs listed above.

Therefore, as the main discussion of this report, it will assess how the features of both systems have changed. First, it will be necessary to provide definitions of the following concepts: (1) indigenous forest management systems and (2) community forestry.

2. Mechanism of community-based forest management in Nepal

Throughout the history of forest policy, from privatisation to nationalisation and finally to populism, the transition of forest management systems can be viewed through categories of indigenous forestry and community forestry (Gautam 1991). This is essential to understanding how forest use is viewed by both state and local actors. The following statement describes the historical transition of forest policy and local management system in Nepal:

The production of the First Five-year Development Plan by HMG Nepal in 1957 is the clearest evidence of the impact of international thought on Nepalese policy, and since that date Nepal has been increasingly influenced by world trends in economics and in development theory and practice. Before 1957, Nepalese policy, and especially forest policy, was dominated by concerns and attitudes arising from within the country itself, and the years before 1957 therefore provide the best evidence of forest policy and management indigenous to Nepal (Gautam 1991, 4).

2.1 Indigenous forest management systems

2.1.1 Indigenous forestry

Under indigenous forestry, local knowledge was fully utilised, possessing information about agriculture, agro-forestry, pest management, soil fertilisation, multiple cropping patterns, health care, and food preparation (Agrawal 1995). In addition, as nature is a part of human society, which is constructed by social norms that define people's perspectives towards the environment and relations with others, management and livelihood strategies for survival were adjusted to the social construction of their knowledge and understanding of nature (Alcorn 1993).

According to Gautam (1991), indigenous forestry in Nepal is defined as the management systems that are not significantly affected by Western influences and that are operated as responses to local requests or initiatives through village or villager group meetings. Therefore, it indicates being a product of the time before forests were managed without any technical "inputs from other countries by way of imposition, inducement or extension" (ibid., 4) through seminars, workshops, meetings, plantation activities, and training.

2.1.2 Formation of an indigenous forest management system

According to the indigenous forest management systems surveyed by Arnold and Campbell (1985), forest use was shared amongst adjoining villages. Management was undertaken with strong cohesive bonds amongst households. The use of the forests was controlled with restricted access at certain times of the year, while during the rest of year the areas were protected and regenerated under the rules set up by groups who had their own management systems to deal with forest-related problems. Harvesting was regulated depending on the type of products and species, the condition of products, and the season.

Villagers were willing to participate in co-operative forest management and to exercise rational use in line with the changes in forest condition. They preferred not to collect when they were aware of problems of diminishing resources such as shortages of fuel, fodder, and

composting material (Gautam 1991). In order to exercise effective management and to enforce regulations, a watcher was hired, who was paid in grain gathered from every household except the poorest. The duties of the watchman were to patrol the forest and control access for collection and cutting of firewood and fodder, and for livestock grazing, according to the rules set up by the user group committee (Arnold and Campbell 1985).

For example, among the Sherpas of the Khumbu region, forest guards, who were called *shingo naua* and mandated by the village assembly, were in charge of the protected forest (Khatri-Chhetri 1993). They had the responsibility for preservation by checking the areas regularly and regulating access and forest use. They only provided permission to limited felling for special purposes in line with the needs of the community and rules determined by the assembly. Furthermore, such preservation mechanisms were reinforced through monitoring and patrols by other local individuals.

Indigenous forest management systems combine traditional authority and self-regulation in order to organise informal institutions. Households co-operate in such a way that individuals manage and minimise damage to the resources they rely on in order to meet their long-term needs (Soussan et al. 1995).

2.2 Community forestry

A community forestry programme was initiated with the assumption that local communities will become active participants in forest management, since they understand the problems, are motivated to find the best solutions, and possess knowledge of forest conditions and the changes observed. It is a group of local people who will be able to maintain the conditions sustainably over time due to their vested interests (Adhikari 2002). The original justification of the programme is linked to two basic assumptions:

1. Participatory resource management is the most appropriate solution for reducing resource degradation.
2. Granting property rights over the local commons will meet community needs in terms of equitable and sustainable use of environment resources.

Moreover, two goals were set in order to achieve successful community forestry:

1. Achieve environmental benefits by preserving forests and appealing to conservation practice.
2. Alleviate the poverty of people dependent on the forest by emulating the success of the now-diminished traditional forest management system.

2.2.1 The aims of initiating community forestry

The programmes were initially implemented as a result of the government's recognition that participation in forest management by forest users who customarily hold the de facto user rights should be prioritised (Timsina 2002). This recognition of the importance for forest users to take responsibility of local forest management is based on experience of past government failures to control forest degradation because of the limited capacity of the Forest Department to handle problems. Substantially, the correlation between the loss of traditional systems and the autonomous functions of local management and the changes in forest condition were observed and then examined (Mosse 1997). Finally, the re-establishment of local users' rights and social organisations has been focused on, including institution building for the use of natural resources. Local users were identified, and then forest user groups (FUGs) were formulated so that they could manage the local forest themselves. Rural communities were empowered in the process of transferring the authority to control and regulate their legitimate user rights (Soussan et al. 1995).

(a) Initial contradiction

The community forestry approach was set up based on the definition and suggestion that "community forest implies 'community-resource' relations, commonly known as [the] 'indigenous system of forest management'" (Fisher 1989). Yet, simultaneously, it was initiated with Western influences through scientifically-trained foresters (Houster 1993). Therefore, indigenous forestry practices that included local knowledge were reconsidered as an essential factor for care of the environment and the development of the community. Such an assumption has helped to empower local people through the study of their relationship with nature and their traditional system of managing natural resources. And, at the same time, political interventions in forest management were introduced by the state, ones that utilised scientific knowledge and methods, including education and training.

(b) Transition

As the programmes have progressed, such state interventions have come to focus more on facilitating the restoration of effective indigenous forestry practices and encouraging local participation in sustainable forest management, by bringing out local interests, identity, and needs using research methods such as participatory research approval (PRA)[2] (Hobley 1996).

Furthermore, as community forestry programmes in some communities and the study of community-based forest management have advanced, the effectiveness of traditional management systems have come to be better understood by both international and national agencies, as is reflected in the growing volume of literature on local people's capacity to conduct sustainable resource management (Messerschmidt 1985; Gautam 1991; Bartlett and Malla 1992; Bhattachan 2002). The positive

[2] PRA is a "family of participatory approaches and methods which emphasize *local* knowledge and enable local people to do their *own* appraisal, analysis and planning. PRA uses group animation and exercises to facilitate information sharing, analysis and action among stakeholders." (World Bank 1995:175)

effects on local people of giving attention to the potential importance of "indigenous knowledge" to environmental management has been recognised in political ecology theory (Adams 1990; Bryant 1997), which explains that political and economic processes either generate or exacerbate environmental problems such as desertification, tropical deforestation, soil erosion, and wildlife depletion. The role of local people and the value of their management systems have been appreciated for their sustainable use and protection of the forests that they depend on as common property. Eventually, while the role of the state is reduced to only that of a regulatory authority, the communities take total management control (Hobley 1996).

2.2.2 Formation of community forestry

Community forestry is based on the operational co-operation of Forest Department officers and forest user groups. Moreover, the devolution of the power and authority to manage forest areas between these actors is linked to the idea of sharing the responsibility of forest protection. Therefore, in order to ensure the feasibility of resource management, it is necessary to emphasise co-operation between the forester and those who use the forest, especially for domestic purposes and as an integral part of their farming systems (Pokharal 2002).

(a) District Forest Offices (DFO)

In 1990 the government prepared operational guidelines in the Forest Department for the process of handing over responsibility and authority to protect, manage, and use the forests from the regional directors to the district forest offices (DFOs). The responsibility for administering the new institutional arrangements was given to the DFO at the district level and its satellite offices at the sub-district level. The role of the DFOs is shifting from being a manager and a controller of forests to acting as an adviser to forest users and a supplier of technical assistance, in order to formulate and implement operational plans while helping organise FUGs (see below). The partnership between the Forest Department and FUGs is characterised by an element of flexibility that allows user groups to amend the operational plans structured by the Forest Department to meet their needs and then to inform the DFO (Shretha 1998).

(b) Forest user groups (FUGs)

The amendment of the Forest Law in 1993 and 1995 put the control of forests into the hands of the resource users organised into FUGs.[3] The responsibility of management, development, and exploitation of forest areas has been handed over to FUGs, with property rights given to them in order to gain access to forest resources (Bhattarai and Ojha 2000–01). FUGs are legitimised as an autonomous institution of the local community, and consist of various castes and ethnic groups with different social, economic, and cultural backgrounds within a community.

3. Effective function of community-based management as a local institution

As mentioned above, both community forestry and indigenous forest management systems are implemented in line with the concept of community-based forest management in dealing with common property and adopting an institutional system. Groups of individuals can jointly use the same common pool resources, sharing property rights with others by organising themselves in such a way that the group effectively co-operates in practising sustainable use and equally distributes the benefits and costs from the resources on which they depend (Verughese and Ostrom 2001).

As demonstrated in the study by Berkes et al. (1989), in the communities that have effectively managed their resources, perceptions of the long-term benefits have been incurred. Moreover, group-based institutional arrangements have effectively provided adequate individual incentives and secured long-term tenure arrangements and group-imposed restrictions, including rules and regulations (Hobley and Shah 1996). Therefore, the key factors in operating the management system depend on how to deal with institutional arrangements and property rights, how to develop relations with the state, and how to realise quality-of-life improvements for the people in a community.

3.1 Features as an institution

The definition of an institution is a set of working rules that determines who is able to make decisions and be involved in an action, what relations are taken between the actors, and what actions are allowed or constrained (Ostrom 1990). Institutions can also be described as being composed of "sets of formal and informal rules and norms that shape interactions of human with others and nature" (Agrawal and Gibson 2001, 14).

Through the development of locally-based institutions, individual actions at the community level are shaped, and interactions with other actors are structured. Thus, the fundamental idea and perception of common property and natural resources varies according to the culture that people belong to. Regarding conservation of natural resources, communal norms can "facilitate resource management by preventing certain behaviours or encouraging others" (ibid., 11). According to Alcorn (1993), in resource management regimes, shared community-level norms can promote conservation so as to specifically prohibit particular actions and encourage co-operative decision-making within the community, creating communal informal rules.

3.2 The function of the institutional system

The concept of an effective institutional system is

[3] According to the CPFD database 2000, more than 9,000 FUGs with about one million beneficiary families are managing about 660,000 hectares of community forest in Nepal. The number of FUGs is still increasing, with new communities being formed and community forestry being applied to a wide range of forests.

likely to be based around the premise that local communities share the characteristics of being a small unit that has territorial concerns and is homogeneous in social structure (Ellis and Allison 2001). It can be argued, however, that the effectiveness of an institution varies with the degree of co-operation found in collective actions (Varughese 2000; Agrawal and Gibson 2001; Varughese and Ostrom 2001); the mechanisms of the institution are interrelated with the formation of collective action, making use of mutual functions, as shown in Figure 1.

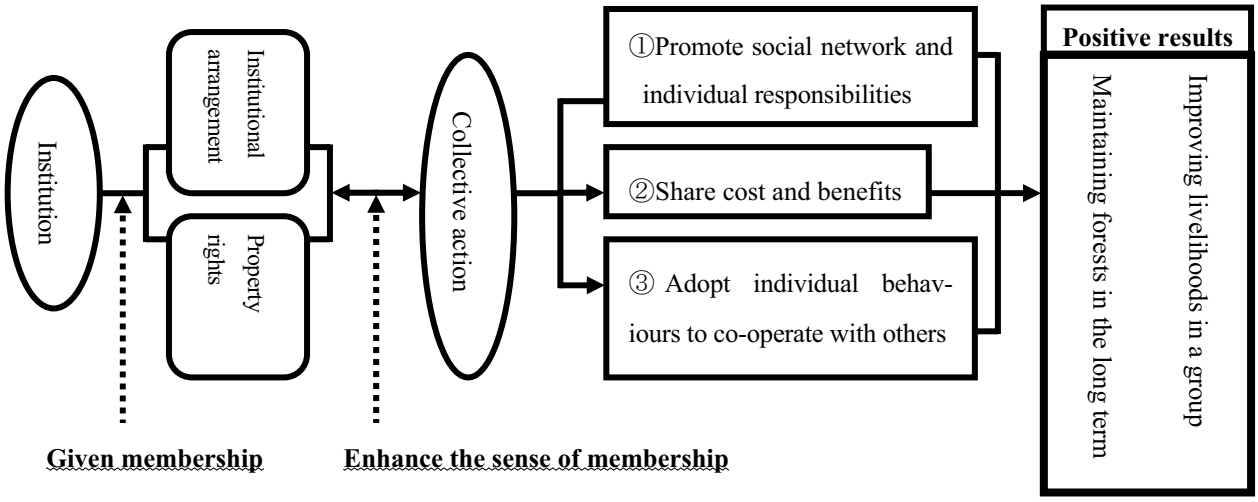


Figure 1. Institutional mechanism

First, the beneficial function of an institution in a common property regime is to facilitate collaborative management practices by sharing rights and responsibilities in a group. The mechanisms of an institution also have the capability to formulate "a social network that contributes to enhance coordination skills in that individuals learn or develop commitment, responsibility, and the importance of task fulfilment" (Futemma at al. 2002, 504). It also helps a group to acquire and exchange information through a learning process.

Second, if people formulate collective action through a local institution, they can effectively organise and govern themselves voluntarily as a group (Ostrom 1990), and can allow the development of their own internal governance mechanisms and formulas so that they are able to allocate costs and benefits to members. Ostrom (ibid.) argues that in terms of the total net benefits that appropriators obtain, individual acts in acquiring scarce common property resources are not as effective as collective actions with co-ordinated strategies. Thus, in resource management, establishing organisations will aid communities to improve both forest conditions and their livelihoods through co-operative conservation practices, and allow the sharing of costs and benefits generated from resource use activities.

Finally, communities need to set up their own institu tion in order to enhance collective action. Through the formation of a self-organised resource governance system, members are also made well aware of their rights, responsibilities, duties, and benefits from shared information. As a result, they maintain an individual consciousness of being a stakeholder of the institution. Such advantages stemming from participation in organisations and realising beneficial collective outputs provide the community members with enough incentives to co-operate amongst themselves in long-term resource management (Futemma at al. 2002). Thus, institutional mechanisms are able to "regulate irrational or unpredictable behaviour on the part of the individual" (Cleaver 2000, 364).

This can be explained by the study of Ostrom (1990), who examined the problems associated with a common property regime dealing with the provision and the withdrawal of scarce communal resources (Ostrom 1990). People usually tend to seek benefits from immediate outcomes, not those in the distant future, and by using different individual strategies for their livelihoods. Yet if a group of forest users establishes their own organisation, it is possible for them to devise their own rules, which involves, over time, the making and adopting of rules, and as a result, can prevent forest users from seeking individual benefits from a communal forest (Ostrom 1999).

3.3 Demonstration of the function

The importance of collective action in managing communal resources is proved by the study carried out by Varughese (2000), who found a linkage between changes in forest conditions and local forms of collective action. The study shows that local people organise and manage forest resources depending on the degree of collective action performed within the community (see Table 1).

Table 1. Preliminary comparison of forest conditions with collective activities.

Site location	Forest condition trend	Forest stock condition	Collective action*
Churiyamai (Makwanpur)	Improved	Average	High
Bijulikot (Ramechhap)	Improved	Average	High
Doramba (Ramechhap)	Improved	Average	High
Raniswara (Gorkha)	Improved	Average	High
Bandipur (Tanahum)	Improved	Above average	High
Manichaur (Kathmandu)	Improved	Average	Moderate
Riyale (Kavre Palanchowk)	Stable	Below average	Moderate
Thulo Sirubari (Sindhupalchowk)	Stable	Average	Moderate
Barbote (Ilam)	Stable	Average	Moderate
Baramchi (Sindhupalchowk)	Stable	Below average	Low
Bhedetar (Dhankuta)	Worsening	Above average	Moderate
Agra (Makwanpur)	Worsening	Average	Low
Chhimkeshwari (Tanahum)	Worsening	Average	Low
Chunmang (Dhankuta)	Worsening	Average	Low
Bhagwatisthan (Kavre Palanchowk)	Worsening	Below average	Low
Sunkhani (Nuwakot)	Worsening	Below average	Low
Chhoprak (Gorkha)	Worsening	Below average	None
Shantipur (Ilam)	Worsening	Average	None

** Organised collective action level at the user level:*
Low: individual may observe harvesting constraint on their own, no group activities
Moderate: as a group, individuals have harvesting constraints, minimal group activities, little or no monitoring
High: enforced harvesting constraints, organised group activities, monitoring by members

Source: Varughese (2000, 207).

For example, in Rainswara, where the forest has been managed with a high degree of collective action by villagers, forest conditions have improved in terms of the increase in abundance of tree species and shrubs. Despite the characteristics of this community—which has a large membership, increasing population growth, and fluctuating migrant patterns—it overcomes potential problems of co-operation by establishing smaller subcommittees and subgroup activities. Within the subgroups, forest activities and products are allocated. In comparison, in the Agra forest, where the community did not organise a protection and management system, forest conditions have deteriorated. Although they are a fairly homogeneous community with the same ethnic background and religion, and individuals are aware of forest degradation and practise harvesting constraints on their own, there are no organised activities at the group level and no rules on harvesting.

In the institutional mechanism described above, it can be found that an institution can properly function with collective action. It is now necessary to discuss the suitability of community forestry in setting the institutional arrangements and property rights in the institutional system (discussed below in Section 5). It will be compared with those of indigenous systems in order to consider the advantages and disadvantages of both systems.

4. Institutional arrangements

4.1 Indigenous forestry

Self-organised institutions, as a traditional and informal system, are often considered as having weak mechanisms, since the rules of use policy are not firmly constructed through legal frameworks. Yet, in practise, in indigenous institutional arrangements, shared communal norms associated with forest management activities have established complete sets of binding rules and regulations under communal consensus, and they can promote

co-operative actions in both collective decision-making and at the operational level. Their control and management practices of forest resources are determined by the people's acquired knowledge, with which they interpret experience and generate social behaviour (Messerschmidt 1985). Communal control, reflecting broader styles of local governance, is based on these norms. It is believed that the forest belongs to the community and, therefore, that actions against that norm should be dealt with through "negative social sanction" (ibid., 470). In indigenous societies, the concept of community is constructed from the perceptions of its members, who believe that they share norms and identity and have common interests and experiences with others within the community (Agrawal and Gibson 2001). Therefore, local voices are reflected in the decision-making consensus regarding the regulation of access to forest resources, as well as in the management system.

4.1.1 Rules and regulation

Indigenous forest management systems are based on the local villagers' definitions of the resources. The customary rights of the users were recognised and identified in indigenous systems, and later they were legalised with indigenous codes.[4] Indeed, through the study of indigenous forest systems, it has been revealed that some traditional local communities have long practised sustainable management without external influences by regulating access to and use of their forest, and by planting trees in their own ways to regenerate forests. There are many places in Nepal where forest cover has improved and farm land has been gradually returned to forest through practising well-organised management systems with communal regulations and rules (Carter and Gilmour 1989). This can be possible in communities where the function of the traditional voluntary organisations is well supported by the co-operation of individual villagers although there are no written laws, rules, or regulations.

4.1.2 The role of local leaders

Local leaders play a significant role in enhancing regulations determined through community consensus by announcing them through the authority. According to Ojha (2002, 19), "Where local leadership is strong, committed and participatory, the enterprise benefits to disadvantaged section of the communities are enhanced."

Local leadership is therefore considered to be a critical factor in the effective functioning of an indigenous forestry system. For instance, in the Ramche forest in the Dhankuta district (Pokharel 1997), the Limbu family was the traditional forest owner, and one senior family member took care of the forest under traditional obligations that allowed others to use the forest, and ensured that all householders in the community were able to meet their basic needs.

Provided that the livelihoods of individual householders are ensured by the self-organised institution and strong leadership, the regulations and rules on using forest can be operated by the local community for sustainable management of the land.

4.1.3 Critical views of self-organisation

Although the advantages of the indigenous forest management system have been described above, three factors should be taken into account as critical when the analysis and study of traditional forest management systems are carried out:

- Appropriators in common property regimes do not "always, even usually, self-organise to establish their own rules" (Varughese and Ostrom 2001, 748). Local resource users as appropriators will only organise themselves as long as costs and benefits are perceived in the processes of the institutional changes of local organisation (ibid.).
- Collective action is also carried out to varying degrees and leads to different consequences, depending on the community's social structure and social relationships in relation to class, ethnicity, and gender (Malla 2001). Communities are not always composed of one single ethnic group but usually of various groups who have different backgrounds and culture, including customs and religion. Indeed, in Nepal some traditional groups consist of migrants who do not, or hardly, possess community cohesion and unity, those that move to marginal areas, or who are disorganised underclass workers in agricultural lands (Varughese and Ostrom 2000). Therefore, the claim that traditional communities have shared community norms is not true in all communities; rather such an idea is a myth of traditional communities.
- Even if self-organised institutions are established in line with social norms and social structure, the norms do not necessarily lead the community members to carry out conservation practices (Alcon 1993).

Therefore, in indigenous forestry, in reality, even though there are cases where forest users collectively manage lands by sharing responsibilities and duties, there is not enough evidence and information to prove it. Furthermore, many constraints to implementing a self-organised institution can be seen in many traditional communities.

4.2 Community forestry

In the history of Nepal's forest policy, the introduction of nationalisation included formulating a centrally designed and scientifically informed forest policy. The new policy took away the powers and interests of local people, who had enacted rules to limit forest use and conducted monitoring, and also removed any incentives for sustainable use and co-operative management. However, after the failure of the governmental forest man-

[4] Indigenous code refers to the rules and exhortations concerning forest practices that guide the treatment and use of the forest resources, at least in nominated areas (Gautam 1991).

agement system, through the revival of common-based management systems—the community forestry projects—local communities have taken back these rights to use and manage their forests, and formed institutions called forest user groups (FUGs).

4.2.1 The rules and regulations of forest use

With the establishment of a FUG, the members control and manage the local forests, including independent harvesting and pricing of all forest products, and forest management is governed by an executive committee elected in the FUG assembly. With the formation of a legitimised FUG, local forest users can gain membership that encourages them to practise sustainable management and observe institutional regulations. The way the FUGs are organised, the members receive a cash subsidy as an incentive for plantation, development, and protection. Moreover, any surplus income from the user group's forests can be used for development purposes other than forestry development.

4.2.2 Local leaders

In order to secure rights and enforce the restricting regulations for sustainable forest management, an authoritative figure(s) should be formed, someone who has the responsibility of protecting the whole forest and securing the livelihoods of the members involved in the community. Therefore, as community forestry is constructed along with the revival of the indigenous forest management system, instituting alternative figures of local leaders such as headmen is necessary. In this case, the FUG committee is given the role of the local authority. It is responsible for the management system and enforcing the regulations and rules, as well as ensuring the livelihoods of members by providing them equal access to the forest.

4.2.3 Critical views of self-organised institutions

(a) Formation of user groups

As mentioned above, in community forestry the formation of a FUG is a critical factor needed to achieve effective forestry with communal rules and regulations. However, the current community forest programme in Nepal tends to emphasise the formation of user groups as new community institutions rather than using existing user groups and locally accepted institutional arrangements (Khatri-Chhetri 1993; Gilmour and Fisher 1998). In this sense, political intervention under community forestry is likely to impose new social institutions over diverse and effective social formations already operating (Fisher 1991; Gilmour and Fisher 1998).

Moreover, development planning by international or state agencies often predetermines the structure of a community and the behaviour of its members before the project is undertaken (ibid.; Agrawal and Gibson 2001). The result of incorporating an individual into a predefined category or social structure can lead to the imposition of ideas and views which do not necessarily reflect the interests of local communities in managing their lands (Housler 1993; Ferguson 1994). In such circumstances, operational plans are more likely to represent the interests and ideas of the state.

(b) Distribution of benefits

There exists a substantial discourse on common property management, in which a community tends to be viewed as a harmonious and co-operative group of people. Originally, community forestry projects were launched along with the revival of the indigenous forest management system, which was pointed to as an effectively functioning community-based management system. In the ethos of the time, traditional communities were treated as something special, and thus they were romanticised as being better managers of local resources. This romanticised idea of traditional indigenous communities resulted from using concepts of static and over-simplified social relations (Cleaver 2000). The narrative of traditional systems claimed to find conservation values in all traditional resource use systems without detailed analysis of their management systems.

From this point of view, people in communities are easily seen as part of a "use community" or as "appropriators," and considered as a mass unit that shares consensus and culture to collectively practise effective resource management (McCay 2001). Therefore, the problems are located in the use of co-operative actions and participatory arrangements (Dove 1995). Participation is undertaken in the form of representatives in a community or group, assuming that they reflect the voices of individual householders in decision-making processes. In this respect, individuals in a society are likely to be regarded as "an undifferentiated mass, a collection of 'individual farmers' and 'decision makers'" (Ferguson 1994, 178). As long as they take the representational form of community participation, the decision-making processes in forming communal agreements are likely to be dominated by the most powerful actors in the community.

As can be seen from the case of the Kankai forest in Terai (Pokharel 1997), the village user group committee takes a representative form because local institutional arrangements are dominated by village elites. Since local elites in the villages are in influential positions in the forest user groups, decisions are likely to reflect the interests of the most powerful actors. Forest department staff are likely to visit only the powerful individuals, such as local educated men and political party leaders, to offer information and services. From the first stage of establishing a FUG, social inequity within user groups appears because, in practice, social interaction with individual households hardly takes place.

In other words, if the decision-making process in forest management takes place in the form of community representation, then the determined management practices are likely to ignore the critical interests of individ-

ual householders and other social actors (Agrawal and Gibson 2001). By perceiving local communities as a whole, many of the world's poorest rural people have been ignored because they do not belong to any defined community, but they are in fact marginalised (Li 1996). A community usually consists of different ethnic groups, and therefore it is difficult to identify it as one single group.

4.3 Analysis

The movement to restore traditional management systems was necessary in order to encourage local forest users to empower themselves in setting up new local and self-organised institutions. In the revival of common-based management systems, community forestry programmes, local knowledge, and voices should be incorporated into local forest management systems with institutional arrangements. The advantages of organising institutional arrangements for effective management practices are as follows:

- increased awareness, through participation processes, of individual responsibility and each person's role as a forest user in the institution;
- the benefits of setting restricting forest use rules and regulations—a result of agreements determined in community meetings—that members of the community follow, while excluding from access and use of the forest those who are not included in the institution as a member of the community user group; and
- local leaders are identified in the community that take responsibility for equal distribution of the members' equal access to forest uses.

However, there are weaknesses to implementing such an institutional system, both in the indigenous forest management system and community forestry, as shown in Table 2, below. In particular, self-organisation of an indigenous forest management system does not guarantee that the people in the community voluntarily form the institutional system, except in communities that have already organised themselves to manage and maintain their common property.

In this sense, state intervention in the forest management system is necessary to some degree with planned community forestry when local people do not organise to provide equal distribution of forest access and use, and where effective forest management has not been conducted, in order to ensure long-term sustainability of forest conservation and people's livelihoods.

Table 2. Institutional arrangement

		Indigenous forest management	Community Forestry
Institution	**Formation**	Self-organisation	FUG
	Disadvantages	• Not always organised • Difficult to be organised and therefore share norms because communities are usually the gathering of many ethnics and migrants	• Difficult to identify and formulate user groups • Given priority to state's interests over communities' • Tend to be represented only by powerful elites
Rules and regulation	**Characteristics**	Norms and codes (unwritten rules) Customary law Obligation as a member living in a community	Official document Statute law Obligation as a member of a institution
	Problems	No constant standard (different depending on the communities' features	Advantages and power in common property tend to be given to people who decide the rules and regulation
Leadership	**Characteristic**	Headman	Committee of FUG
	Roles	Have responsibility for the members of his group Ensure all householders met their basic needs	Ensure equal access and livelihood for FUG members

5. Property rights

One of the most important elements involved in setting up an effective institutional system is common property arrangements, as briefly mentioned above in Section 3. According to Mckean (2000), the rights and duties concerned with resource use are defined in the form of shared ownership, and the users should have a great interest in promoting the long-term responsible stewardship of resources.

The function of property rights in an institution is to promote local sustainable forest management. By incorporating property rights into an institutional system, the following advantages can be expected:

- strict countermeasures taken against the inevitable "free riders" with firmly conformed regulations, and
- a desirably clarified distinction of the resource user groups in a restricted property rights system (Bartlett and Malla 1992).

Each individual is expected to provide support by actively participating in communal management practices, sharing the responsibility as an obligation of all property rights holders. This also offers greater promise for effective conservation, guaranteeing them benefits distribution over communal lands by excluding non-communal members. Therefore, common pool resources need to be regulated as common property with the provision of concessions or property rights to limit the number of users under the system.

There are four different types of property rights over resources: withdrawal, management, exclusion, and alienation (Agrawal and Ostrom 2001) (see Table 3). If property rights over forest resources are in the hands of the community, the potential economic benefits will give the community enough incentives to practise an efficient and effective management regime (Adhikari 2001). Cleaver (2000) also argues that incentives to be actively involved in the community management system can be gained from property rights, as well as from social norms shaped by the social structure, culture, and beliefs that exist in the community.

In Nepal, however, there are difficulties in carrying out such a common property arrangement. The following statement clearly describes the present contested and complex situation in exercising the property rights regime in Nepal in forest areas where large economic and social values have attracted various stakeholders: "At the heart of participatory forestry lies the battle for ownership of forest lands. Property rights structures have for the last century been skewed in favour of the state, at the expense of local people's needs" (Hobley 1996, 7).

Table 3. Property rights.

	Common property regime	Indigenous forestry	Nationalisation	Community forestry
Withdrawal	Participants as proprietors	Local residents in village communities and their representatives	Restricted by the government Private individuals	Forestry user groups (FUGs) Use all the products
Management	Participants as proprietors	Local residents in village communities and their representatives Decision-making	Forest Department	FUGs Buy and sell forest products in market Design regulations of internal use patterns
Exclusion	No right	Land distribution system by King	Forest Department	District Forest Officers
Alienation	No right	No right	N/A	No right

Source: Gilmour and Fisher (1998).

5.1 Indigenous forestry

5.1.1 Communal property rights

Indeed, the self-organised institution implemented in the indigenous forest management system gave the community members a sense of ownership and responsibility to patrol and manage their communal lands. Such traditional voluntary organisations played an important role in reflecting the voices of individual householders through the process of assembly and in supporting the self-reliance of community members (Bhattachan 2003). All householders, except those of different ethnic groups, participated in the village assembly and accepted the authority of the headman. Although the village headman had de facto ownership of the communal lands as a privilege and reward for his service rendered to the state, the land was assigned to community institutions with the full responsibility of the management and use of the local resources (Gautam 1993). If people are given land that they can control as their own possession, and if there is guarantee that the community meetings are worthwhile participating in and that they reflect local voices, then they will contribute more effort to managing the land from the perspectives of providing for long-term needs and the security of livelihoods.

Berkes and Farvar (1989) also describe the effectiveness of indigenous self-organised institutions as providing members with customary rights, by which livelihood was ensured in "providing guaranteed access rights to vital resources so that everyone in the community is assured of the opportunity of meeting their basic needs" (ibid., 11). Li (1996) emphasises the advantages of indigenous management systems in terms of balancing individual and community rights with mutual agreements by formulating institutions.

5.1.2 Land distribution

In Nepal, land distribution has been taking shape in various management systems according to versatile applications; forest lands were categorised into private lands, communal lands, state owned lands, and lands related to religion institutions, respectively called *birta*, *kipat*, *raikar,* and *guthi*, as different tenure systems.

As pointed out by McKean (2000), the common property regime was carried out in communal lands in the form of shared private property. On one hand, like pri-

vate property, the forest can be effectively monitored by the voluntary activities of members to manage and protect forest with an awareness and sense that a portion of the distributed land is their own land. On the other hand, as common property, forest uses are restrained by shared communal regulations among members without needing to establish physical boundaries such as fencing, which usually costs money to build and maintain.

According to Alcorn (1993), indigenous land use could deal with the complex and often-overlapping tenure system by sharing benefits over communal lands and excluding non-communal members. Overlapping rights are effectively operated in order to protect the forest from invasion by outsiders.

Traditional systems are conducted with effective "partnerships between individuals and their communities" (Alcorn 1993, 426). Although common property regimes have been operated by larger entities and groups, individuals "theoretically hold private property rights and do in actual fact" (Gibson et al. 2001, 7). The system gave individual resource owners the incentive to carry out long-term planning, to invest in resource quality for productivity, and to properly husband their resources (McKean 2000).

Furthermore, the land distribution system in a community also functioned effectively by dividing communal forest lands into small patches, so that it was easy to identify resource boundaries. In many cases, distribution could be negotiated on an informal basis. In this case, agreed membership was given to individual householders, and the code of practice that "guided the treatment and use of forest resources" (ibid., 11) was applied for a specific area, as was the right to collect forest products and "to till certain areas and to collect forest products from other areas" (Hobley 1996, 289).

Such effective forest management was successfully implemented with the existence of the following two common conditions:

- the acknowledgement of shared property rights with which, as a member of the community, the member can work with others in sharing costs and benefits, while, like private property, a sense of ownership is obtained over small patches of land given to individuals; and
- boundaries were clearly identified in communal lands .

5.1.3 Critical view of the property rights regime

It is true that in order to secure rights and enforce the restricting regulations, property rights should be distributed to all households in the community and include clearly identified boundaries to exclude others from using the resources.

But in Nepal, indigenous communities vary in terms of spatial and temporal location, and each community also differs in social structure and cultural diversity. Therefore, there is not always a guarantee that all members belonging to the institution gain equal benefits by exercising their property rights. Although in some communities equitable access to resources might have been be ensured for the members of the community under a communal forest management system, in many cases communities were controlled by local elites who had strong ties as officials and nobles with the state, and were able to exercise their authority in enforcing or withdrawing access rights (Gilmour et al. 1989).

In fact, an effective forest management system functioned only in communities with the following particular conditions:

- The lands were not contested amongst various interest groups. This occurred in the case where there was no economic and social value and benefits; for example, where forest cover was divided into patches, which makes it difficult to use machines to collect timber, and therefore it was not beneficial and efficient for the private or state entrepreneurs to cultivate the forest.
- The forests were situated in inconvenient locations by reasons of remoteness or unfamiliarity.

5.2 Nationalisation

When indigenous management systems were operating, local people were actively involved in forest management practices, possessing the autonomy to control the use of forest (Hobley 1996). However, as Tamang (1993) argues, "The displacement of indigenous communities which exercised customary law over their forests actually weakened control over the use of resources" (ibid., 308).

Upon institution of the nationalisation policy, local people lost not only autonomy but also their property rights to take responsibility for the management and use of their forest (Soussan et al. 1995; Agrawal and Gibson 2001). They were forced either to leave the land or to give up their familiar forest management system without being replaced by effective alternative management practices.

The dissolution and replacement of the traditional system by state-imposed management practices took place during nationalisation in Nepal; land surveys were conducted without detailed examination of the many localised people-resource relationships that already existed. The cadastral survey demarcated lands according to their geographical location (Hobley 1996). In line with collected data by the land survey and its resulting boundaries, new communities and user groups called *panchayat*[5] were set up by the government over the pre-existing locally accepted institutional arrangements.

Consequently, the results of nationalisation created new boundaries without considering the existing forest

[5] *Panchayat* boundaries divided the whole country into about 29 town and 4,000 village *panchayats* (Guatam 1991). In these circumstances, people who proximately lived within the *panchayats* were automatically included in the community and given user rights, whereas those outside the new boundary were excluded from access to and the use of the forest, even though they were traditional users.

boundaries identified by indigenous communities, and the newly articulated communities were given responsibilities to protect and manage the forests, but they were subsequently less effective than the groups they replaced (Gilmour and Fisher 1998). Under such circumstances, conflicts over boundaries occurred at the *panchayat* level, due to this system of seeing a community as a physical unit and ignoring individual roles in forest management. It is difficult now to identify who possesses the legitimate rights to management due to the overlapping boundaries. The emergence of conflicts between indigenous communities and newly established communities for control of community forestry programmes cannot be avoided, as both lay claim to the right of managing the same areas. Lacking clearly recognised boundaries leads to difficulties in establishing co-operation and collective actions with others.

5.3 Community forestry

From the historical experience of changes in Nepalese forest management, as described above, it is recognised that unless people are given user rights and ownership, or at least the authority to control and make decisions on the work plan of a forestry management system, people lose interest in active practices of management, or conflicts emerge. In other words, co-operation and collective actions will be obtained by transferring authority and responsibility for forest management, so that "the legitimate needs of these people for forest products were met" (Gilmour and Fisher 1998, 36) and incentives are made available to collectively control the forest through the practise of sustainable activities for income generation.

5.3.1 Property rights arrangement

The responsibility of management, development, and exploitation of forest areas has been handed over to FUGs, with property rights given in order to access forest resources (Bhattarai and Ojha 2000–01). FUGs have de facto use rights and rights to control the land (Hobley 1996; Gilmour and Fisher 1998), as well as to establish co-operation within communities to effectively manage communal forests and property granted by the government. In Nepal, current legislation allows local users to have power to control and access forest products. In community forestry programmes, a community member possesses a license to share access of communal forest resources and the benefits gained from them under the agenda of the provision of equal distribution of benefits and costs to a community,

5.3.2 Critical view of property rights arrangements

There are problems in present property rights arrangements in the structure of boundaries of communal lands and the distribution of property rights; the boundaries and distribution of forest lands are administrated by territorially-based forms of local government (Gilmour and Fisher 1998). Such boundaries are still under the influences of the nationalisation policy in order to facilitate the regulation of forest activities in government forests. International agencies and the Forest Department have defined communities in line with the boundaries created by using geographical mapping systems (Hobley and Malla 1996).

Such an institutional arrangement of property rights does not provide equal opportunities of access to the communal forest, and therefore does not guarantee the equal gain of benefits and security for each householder's livelihood. Bhattarai and Ojha (2000–01) revealed with a study of labour distribution of householders and their livelihood strategies that, even though distribution of access and uses of the forests was equally given to each householder, the wealthier gained more benefits from the communal forests, while the poor could not effectively exercise their rights to use the forest because of many constraints. The former possesses the capacity to carry out maximum use and benefits from given opportunities under community forestry, as well as the strong power to exercise their rights to harvest forest products. On the contrary, even though the poor gain equal opportunity to access and use forest products, they are not able to maximise their opportunities due to a lack of time and technical capability.

5.4 Analysis

As can be seen in Table 4, it is necessary to create the situation where forest users are responsibly ensured and respected in terms of awareness of their rights with which forest users harvest and manage with a sense of ownership of the lands. There are difficulties, however, in implementing a communal property regime, as follows:

- There is the difficulty of identifying and deciding who is included or excluded in a community as a forest user, in defining clear boundaries in communal lands, and in setting up a user group in order to conduct an effective management system.
- There are also questions in the communal property regime of whether it takes place in practice in terms of equal distribution of the rights for all members of the community. If it does, then it should function in a way that ensures the share of benefits of the members so all of them can meet their basic needs.

In practice, as Li (1996) states, the distribution of property is often contested, and therefore, in this sense, it is likely to be articulated by the representatives of the community. The existence of representatives who are powerful spokespersons, such as local leaders or local elites, that can gain power from the co-operative actions with the state, can easily simplify the needs of a community. These factors have created a weakness in institutional arrangements in both indigenous forestry and community forestry. As self-organised institutions vary from community to community, there is not always a guarantee for all members that belong to the institution that they will equally gain benefits by exercising their property rights.

Table 4. Periodical differences in communal property management systems.

	Indigenous forestry	Nationalisation	Community forestry
Institutional characteristics	Self-organised institution and local leaders	*Panchayats:* Establishing new village administrative institutions. New communities and user groups were set up by the government.	FUGs and DFO: Re-establishment of local users' rights and social organisations, including institution building for the use of natural resources.
Communal land system	*Kipat* system: A form of communal tenure that provided community members with the right to collect forest products. *Talukdari* system: Forest as common property was under the control of local state functionaries	*Panchayats system:* The government took over all land rights from people and made it state-owned land.	Community forestry system: Newly articulated communities were given the responsibility of management, development, and exploitation of forest areas.
Other land systems	Diversity of land systems: private land (*birta*); state-owned land (*raikar)*; lands related to religious institutions (*guthi)*	Simple land system: state-owned land	Diversity of land systems: national park; state-owned land; private land
Institution	Self-regulation: Administered with traditional land tenure system by local headmen.	*Panchayats*: New village administrative institutions.	FUGs: Local institutions have de facto use rights and the right to control the land.
Boundaries	Easy to identify the boundaries of the resource. Could be negotiated on an informal basis.	Cadastral survey demarcated lands according to geographical location with unclear boundaries. Forest users also unclear.	Still under the influence of the nationalisation policy in order to facilitate the regulation of forest activities in government forests.

Sources: Takako Wakiyama.

Indeed, although in indigenous forestry of hill areas in Nepal, where small patches of forest land were distributed to individual households in a sustainable and effective way, certain segments of groups, including women and the marginalised in the community, were excluded from using the forests and faced problems in meeting their needs (Soussan et al. 1995).

Therefore, it should be borne in mind that it is a myth to assume that every householder in a community would have equal access to and benefits from distribution of common resources if a member of the community is given the ownership of resources (Adhikari 2002). Therefore, it is also based on the assumption that through the establishment of self-reliant and self-organised institutions, local people can regain their autonomy and security for their livelihoods with equal distribution of benefits.

6. Relations amongst the state and local actors

As described in the previous chapter, the state has intervened in the forest management practices of local communities in different ways. The state intervention has been exercised since the time when indigenous forestry management was practised (Hobley and Malla 1996). Although the power of the state has been weakened, still now the government has the authority to dictate how to use forests in the economically and socially beneficial areas. In the era of nationalisation, land ownership in Nepal was vested in the state. Interventions exercised by the government have been aimed towards the "planned transformation of a dynamic inter-relationship among community, state, and [the] physical environment" (Dove 1995, 316). Therefore, when community forestry is initiated in a community, one of the key elements necessary is to build up the partnership between those who own the land and those who use the land; relations with the state are an inevitable factor for local people who live close to forests. The historical relations amongst these actors were described in Table 5.

Table 5. Relationship between the state and community.

	Indigenous forestry	Nationalisation	Community forestry
Actors	• The state • Local functionaries; local headmen • Local forest users	• The state (scientifically-trained forester) • Panchayats	• The state (DFO) • The committees • FUGs
Type of relationship	• No direct interaction between local people and the state • Indirect relation with the state through local leaders in a community (relation between local authority and the state) • Close relationships between local leaders and the local government	• The state is wholly involved in forest management • Dynamic inter-relationship among community, state, and physical environment • Divide the roles between those who own the land and those who use the land	• The state is partly involved in forest management (the foresters and FUGs) • Dynamic inter-relationship among community, the state, and the physical environment • Co-operation between the forester and those who use the forest • Close relationships between local leaders and the local government
Intervention by the state in a community	• No direct intervention • Land use and livelihood strategies have been affected	State intervention in forest management system of local communities	Less intervention in forest management, however, in defined areas territorially-based forms of local government administrate the formation of FUG meetings and the boundaries of forest land and communities.

Sources: Takako Wakiyama.

6.1 Indigenous forest management system

Although forest users had not previously had direct interactions with the Forest Department, their land use and livelihood strategies were affected by influential forces formally and informally imposed on local management systems with local governments "through social (kinship, alignment with political parties, ethnic and regional identity) and economic (bribing, rent-seeking behaviour) relations" (Timsina and Paudal 2003, 8). In other words, the interference of the state in local communities appeared indirectly through the interaction with local functionaries who had influential power in the local forest management system as well as the social lives of the community.

6.1.1 Local leaders and local community

As already mentioned earlier in Section 4, local leaders played a significant role in supporting the effective management of communal forests and promoting the functions of institutional arrangements and property rights. The local authority figures, such as local headmen, held the title and responsibility of forest areas under their land ownership, and they also fulfilled their functions as collectors of land taxes for the local government. As a local leader of a community, they achieved a close relationship with government officials. The relations between the headmen and the state had been effectively enhanced as leading the policy tendency to focus on the devolution of central government since the 1900s. As a result, an official document confirmed the role of local headmen by providing guidelines for the utilisation and management of forests.

Ultimately, the government handed over all responsibility over forest areas to the local functionaries, recognising the difficulties of implementing forest management with the responsibility of looking after all the forest areas (Hobley and Malla 1996). Therefore, local authority figure*s* were appointed as a local functionary, regulating forest management practices on behalf of the state. Furthermore, he was given the rights to administer the traditional land tenure system and self-regulation established by the local people. The management strategies taken by the government were carried out through the effective relationships with local leaders, and the state provided *birta*[6] (private lands) to the local authorities in exchange for their services of looking after the lands and communal obligations towards the state.

6.1.2 Critical views of relations

In traditional societies that did not have legal frame-

[6] Private lands: since the Rana era began in 1846, when Jung Bahadur Rana became prime minister, a large portion of the land in Nepal was in the hands of local elites or local functionaries, who obtained ownership through the *birta* system. By 1950, when the system was abolished, "one-third of the county's agricultural and forestlands had been granted to private individuals" (Malla 2001: 291). Under the *birta* system, landlords were given rights to use forest products, and therefore regulated use through their responsibility to look after the lands. While a large portion of lands was converted into private property, many rural farmers had to rent land from *birta* holders (Gautum 1991). As the penalty for failing to pay their obligation, a large number of tenant farmers ended up as "bondage labour" (slaves) working for large *birta* owners or had to supply forest products to landlords.

works in communal lands "manipulative control" by the state tended to create co-operative interests and management strategies with powerful local actors in the representative form of land distribution and ownership (Mosse 1998). Even though local functionaries should have dedicated themselves to being an intermediary between the state and local communities, their choices and related behaviour were likely to respond to the government expectations through their interaction processes. This is because they tended to represent and express the community's needs and interests in line with their expectation of what the state offered, resulting in a beneficial relationship between the state and local functionaries.

Therefore, even though the local people did not have a direct relationship with the state, their management system and livelihoods strategies were affected. Ultimately, the state had the power to ratify the forestry system and to "attribute it with agency in the re-shaping of social and productive relations" (Mosse 1998, 1).

6.2 Nationalisation changed the intervention of local government

In the post-Rana[7] period in Nepal, just before the nationalisation policy was implemented, while state control and the power of forest departments had been increasing, especially through the birta system, a "technical elitism based on forest science" (Soussan et al. 1995, 17) began to be developed as a result of the influence of Western countries. For example, foresters began to be trained in the developed countries (ibid.), and such scientifically trained foresters began the nationalisation policy in order to enact forest conservation and economic development through the conversion of private and communal lands to state ownership (Houster 1993). The nationalisation of forest lands and state ownership were justified with the assertion that they would contribute to the welfare of the country and the people by the equal distribution of natural resources (Soussan et al. 1995).

6.3 Community forestry

Today, dialogues between communities and the state for establishing forestry projects have progressed regarding the issue of handing over a defined area of government forest to community control, so that all sections of communities participate in the formation of a legally-recognised forestry user group which follows the government's community forestry regulations (Soussan et al. 1995).

6.3.1 The relations between DFOs and FUGs

The government's role is to give property rights to local user institutions to provide political legitimacy to the concept of local use (Gilmour and Fisher 1998). The state should also reveal and take it into account the existence of migrants and the marginalised within and outside of a community to implement equal distribution of benefits. In addition, the DFOs maintain authority over forests so as to prevent local users from mismanagement, and the roles of the DFOs as a local authority are to support and facilitate the forest users' activities by giving them legal rights (Gilmour and Fisher 1998).

The community forestry mechanism is reinforced with the partnership between FUGs and DFOs in order to enforce communal rules and regulations. While FUGs are given responsibility for the lands, and therefore the obligation to follow the rules set up themselves, the DFOs play a key role in monitoring the practice of regulation and supporting FUGs with advice to establish their own rules, following the legal procedures and rules determined in forest policies.

However, because national governments do not possess enough staff and money to enforce their laws over forest resources, some user groups in local communities tend to ignore the rules determined by the central government and add their own rules and familiar pattern of activity (Gibson et al. 2000). Such rules and activities are likely to be different from the expectations of the government.

6.3.2 Critical view of the relations between local government and local community

There are constraints to FUGs having full autonomy in their forest management practices, because the DFOs have legal power over the FUGs in regulating mechanisms for their constitution and operational plans as well as formation. For instance, if a DFO does not return a response to the application for amendments from an FUG, it cannot function and the amendments are not completed. Although FUGs possess the power to amend the constitution and operational plans, according to the study carried out by Springate-Baginski et al. (1999), most FUGs have not done so.

Furthermore, as already mentioned in the previous section, it becomes more difficult for FUGs to obtain the power to manage forest in areas that have economic and political value. Therefore, although the FUGs were established as a local institution, it became clear that user groups were "either dominated by local elites or existed on paper only and were in practice moribund" (Soussan et al. 1995, 83).

The prescribed existence of a community FUG does not necessarily give the users incentives to actively engage in such activities, because there is no guarantee for the members of the group that they will gain benefits and value through effective participation. In Sitalpati, in the district of Sankuwasabha (Soussan et al. 1995), the FUGs formed by the Forest Department were handed over lands that were already degraded, and so the FUG existed in name only and was irrelevant to the lives of most villagers.

Even in hill forests that have not been subject to state

[7] The Rana period ended with the introduction of the *panchayat* system in 1959. During this period, the unification of the country was enhanced in sense of social and economical unification (Gautam 1991).

intervention due to their geographic characteristics, as soon as the value of forest products suddenly increases, the focus of the Forest Department might extend its power to these areas, which means that "the access of the marginalized groups to the forests is questioned by more powerful groups" (Hobley and Shah 1996, 10). In the Terai forest, arguments against community forestry have been common within the Forest Department due to the value of the forest products and the great interest shown by commercial loggers, leading to unwillingness to relinquish management. It is clearly described in the study by Pokharel (1997) that since the process of the formation of FUGs, meetings with local communities have not taken place in Terai, where the state has a great interest due to the area's rich natural resources, such as valuable timber and forest products, and its suitable location for commercial purposes.

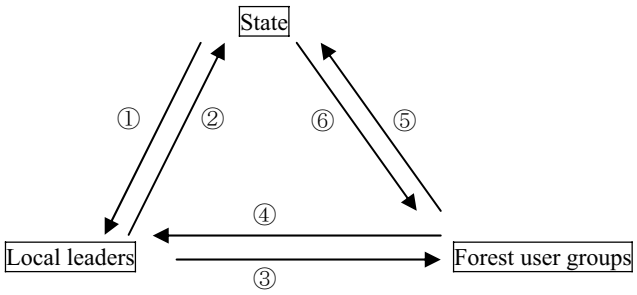
6.4 Analysis

In order to practise effective local forest management, another key element is to build up a triangular relationship between local communities, local leaders, and the state (see Figure 2).

In practice, however, such a relationship has constraints, because each actor is dedicated to conducting their own tasks and roles for community management due to the economic and social values of the forest and its resources. Therefore, it should be kept in mind that even though in some communities, in both indigenous forestry and community forestry, local participation seems to have been successfully obtained—and function effectively as a user-group-oriented management system in decision-making and consensus—the co-operative interests and strategic engagements tend to be promoted by the state and the elite groups, rather than by individual interests in terms of costs and benefits (Pokharel 1997).

As Springate-Baginski et al. (1999) state, the decisions made at the implementation stage by elite groups within FUGs are likely to deal their desired actions concerning roles, responsibilities, and plans, and therefore they might reach the conclusion that "it is easier just to close the forest than to reach complex agreements on [a] regular basis" (ibid., 13). Such agreements occur possibly because villagers do not regard the constitutions and operational plans as working documents that guide their own forest management practices, and they continue to practise their familiar methods.

Therefore, in order to avoid such unequal distribution within a community when new institutional arrangements are set up, the government should stick to the role of facilitator in order to support local forest users and monitor the functions of user groups—working flexibly with them, while giving them the autonomy to make decisions and to manage their communal forests.



State and local leaders	①	Hand over the responsibility for management.
	②	Look after forest and communities in terms of conservation and livelihoods, respectively.
Local leaders and local communities	③	Ensure the livelihood security of local forest users as members of the community.
	④	Practice forest management following communal rules and regulations determined in community meetings.
Local communities and the state	⑤	Practice sustainable management.
	⑥	Subsidies for community development activities. Administrate legal rights to local people so they can access forest lands provided by the government.

Source: Takako Wakiyama.

Figure 2. The triangular relationship and the roles of the state, local leaders, and forest user groups.

7. Analysis: an effective forest management system

There is the fact that "traditional" systems are easily romanticised by advocates of restoring past practices. They describe and categorise effective community-based management systems as traditional/local in comparison to modern/scientific management (McCay 2001; Gilmore and Fisher 1998). This happens because, while the latter is easily criticised when examining recent comparative

information and references to past experiences, the traditional systems are difficult to evaluate due to lack of data and informants. Therefore, if the discussion on traditional and modern systems takes place without considering the factors and functions of self-organisation in indigenous forestry, then there is the danger that a simple dichotomy of the traditional system from the modern system will emerge. In other words, as a counterpart of the occasion that when traditional systems do not properly work out in a particular situation or are not adopted by a community, it may lead all attention to shift to using Western scientific knowledge[8] established by outside specialised expertise as the only alternative (ibid.; Housler 1993).

The use of Western knowledge over local knowledge arises from assumptions such that, even though people had effectively managed resources harmoniously in the past, community-based forest management has been lost, and traditional knowledge cannot be adopted into a modern society influenced by external forces, such as the market for economic development, which exert increasing pressure to exploit natural resources (Agrawal and Gibson 2001). Forsyth (1996) states that the "indigenous knowledge of hill farmers may be no more accurate because it was developed in a time when shifting cultivation had sufficient time and space to be sustainable, which is no longer the case" (ibid., 381).

In this sense, the state can justify the appropriateness of its interventions concerning forest conservation and sustainable use. The government and donors tend to view local actors as being weak and lacking the capacity to deal with the problems they face as a result of external changes, such as the loss of forest cover, population growth, and the influence of market forces on their livelihoods (ibid.).

For example, the formation of FUGs is likely to be established with the assumption by the government that "individuals cannot organise themselves and always need to be organised by external authorities" (Ostrom 1990, 25). In other words, although the government recognises that self-organised and self-governed institutions are necessary for communal resource management, if the institutions are not fully developed and accepted by a community, then this presumption tends to be used to justify state intervention in the organisation of local institutions.

Therefore, even though it is necessary to initiate community forestry management, when setting up forest user groups as a local institution in communities where people do not practise a sustainable management system, in terms of forest use and regeneration as well as distribution of benefits from communal forest lands, the following factors should be carefully examined:

- The reasons why traditional practices functioned properly should be considered, including examining what the roles were of local individual householders in resources management.
- A survey should be conducted of the characteristics of the communities, including social structure and geographic constraints, and of other stakeholders in the forest, as well as influences from outside the communities and the interaction with other local communities, etc.

That is, before an intervention is introduced to a group of people by establishing a new community organisation, the study and analysis of the area and group have to be carefully carried out in order to avoid creating conflicts amongst different groups and individuals, as well as avoiding mistakenly dissolving existing effective forest management systems.

8. Closing remarks

The past experience of nationalisation in forest policy in Nepal reveals the danger of using scientific knowledge alone as a problem-solving method, because doing so most often resulted in the imposition of externally defined problems and technical solutions. It is associated with the development discourse which claims that "the 'Third World' has been created as a 'problem'" (Housler 1993, 84) in order to justify the necessity of external intervention through the input of First World science and professional expertise (Bryant and Bailey 1997).

With the emergence of nationalisation, new forestry systems were established, creating gaps with pre-existing indigenous forestry. Indigenous management systems, composed of a combined system of community-based management and private management, were converted into "an externally-imposed system of state regulation" (Soussan et al. 1995). Eventually, the pre-existing forest management was dissolved with the abolition of the traditional *talukdari* system (indigenous authorities as local functionaries). The areas ruled by local authorities were supplanted by "a territorially-based form of local government" (Gilmour and Fisher 1998, 34). The other effect of nationalisation emerged with the introduction of a cadastral mapping system based on scientific knowledge and measuring tools. The idea of such scientifically mapped boundaries enhanced the support of the advocates of community-based conservation, who conceptualise communities as territorially fixed, small, and homogeneous.

Consequently, the impact of the policy change appeared negatively, resulting in deteriorating forest conditions and the livelihoods of the poor, due to the lack of support from local people and hindered ability to exercise forest regulation. Community forestry was introduced along with the reconsideration and study of the effectiveness of the indigenous forest management system. This new forest system has had a positive impact on indigenous people and their knowledge by focusing on their existence and capacity to manage forests.

[8] Knowledge concerning scientific and economic principles that can be seen when comparing differences with indigenous knowledge and interpreting it as the "ability to break down data presented to the senses and to reassemble in different ways" (Agrawal 1995: 417). Thus, it will be possible to gather, document, and spread useful information in the society easily and rapidly in a systematic fashion.

However, there are some problems associated with community boundaries and the constraints on local people's autonomy to control their communal lands, due to the power relations between the poor and local elite in terms of equity of benefits distribution, and also because the Forest Department still retains power over working plans at the legitimate level. In addition, some foresters are not willing to give up their authority over forest products and economic values, having the ???sceptical view that the local communities do not have the capacity to manage the forests effectively and that their professional role is being threatened.

As a next concern, it should be considered whether community forestry has achieved the goals set out above in Section 2.2. From the analysis, it is clear that with community forestry programmes, local institutions are established in an area either where the indigenous forest management system was dissolved by the impact of nationalisation, or where the local people had not formulated any institutional arrangements. However, there are two problems involved in defining a community: first, a community may be newly established in a location where co-operative actions already take place with organised group arrangements; second, if it is considered whether or not the institutional arrangements are to effectively function by collective action amongst community members, then the results will differ in each community, depending on the formations of FUGs and forest conditions. Furthermore, the formation of FUGs is largely influenced by the economic values of the forest as perceived by the state. The valuable Terai forests have attracted the attention of the Forest Department officials, who seek either economic development of the country, or those who care about the loss of forests and consider the conservation of forests in line with the conventional attention to the natural functioning of biodiversity. As a result, the Forest Department neglected to hand over the lands to local users when formulating FUGs.

The newly created boundaries of forest lands have made it difficult to identify who exactly possesses the use rights. Subsequently, the formation of FUGs is also difficult to implement due to unclear identification of community members. Unclear boundaries also create constraints when regulating forest uses. Shared interests, however, can be easily created between the Forest Department and elite user groups, as the interests of these powerful actors are not affected by the enclosure of forests for conservation purposes because they are able to meet their own needs from private sources without difficulty.

However, community forestry is undergoing an evolutionary learning process. It is obvious, as illustrated by the progressive changes to operational plans and the involvement of autonomous local users—as well as the continuing improvement of forest conditions in some sites where community forestry has been carried out—that the method will achieve its goals, provided that the necessary conditions for success are in place.

Therefore, as a next step, it is important to clarify the boundaries of communal lands and identify the users by conducting new mapping. In East Kalimantan, Indonesia (Eghenter 2002), for instance, community mapping is taking place, with the aim of finding naturally-established communal tenure boundaries over forests by focusing on "indigenous ways to organise and use space and how these might conflict with or support forest protection" (Sirait 1994, 411). Community mapping systems might be useful for recognising the perceptions of local management of territory and resources, while local people obtain information about other stakeholders and their communal lands—enhancing their ability to control, manage, and monitor their forest lands. Furthermore, the results of mapping can be used in negotiations over land use.

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Trends of Forestry Policy Concerning Local Participation in Bhutan

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Abstract

Bhutan is very rich in natural resources and biodiversity. Its 40,076-square-kilometre land area is home to 7,000 plant species, 165 mammal species, and 700 bird species. The country has 72.5 percent forest cover, and 26.23 percent of total land area is designated as protected areas. The international community has declared Bhutan as one of ten global biodiversity "hotspots" in the world. The Bhutanese people have been able to conserve the country's forests even to this day, first, because of visionary leadership, and second, because of the people's way of life and culture, which is strongly influenced by Buddhism. Bhutan's commitment to conserve its forests is reflected in its forestry policy to maintain a minimum of 60 percent forest cover for all time.

Before modern development started in 1961, there was a strong traditional institution in place to utilise and manage forests, and the people enjoyed free access to the forest resources from which most of their daily basic necessities came. Slowly, modern legislation replaced the traditional customary laws and institutions, and it restricted the people's rights to the use of forests, because the government was concerned with the rapid depletion of forests in some parts of the country and their long-term sustainability.

In response the government adopted a participatory forestry policy to involve planning, management, and forest utilisation by the communities themselves. Under this policy, a social forestry programme was launched whereby the people developed community and private forestry through the government's technical assistance. The forestry activities have been devolved to the grass-roots level in line with the government's decentralisation policy. Through this programme, people have been able to participate in forest management and harvest forest products on a sustainable basis.

Keywords: Biodiversity, Protected areas, Social forestry, Community and private forestry, Decentralisation.

1. A brief country profile

The Kingdom of Bhutan is located on the southern slopes of the eastern Himalayas, and is land-locked between China (Tibet) in the north and India to the south, east, and west, with an area of 40,076 square kilometres (LUPP 1995). Bhutan is one of the least populated countries in the world, and about 79 percent of the population lives in rural areas (CSO 2001). Its physical features consist mostly of rugged mountains, valleys, and ravines traversed by a network of swift rivers and waterfalls, all flowing to India. Human settlements are confined mostly to interior river valleys and southern plains. Herders graze sheep and yaks on alpine grasslands beyond and between these settlements. The country has diverse ecological zones ranging from sub-tropical to temperate to alpine forests. About 72.5 percent of the total land area is under forest cover and is home to about 7,000 species of plants, 165 species of mammals, and 700 species of birds. About 26.23 percent of the country is designated as protected areas, not including the nine percent of biological corridors created to connect different protected parks. Around 35 percent of the country's total area is under some form of conservation. All these characteristics have made Bhutan one of the top ten countries with the highest species density in the world, and it has the highest percentage of land under protected areas and forest cover in Asia, so the small kingdom is very rich in ecological diversity.

2. Biodiversity conservation in Bhutan

Unlike in other Himalayan regions where natural resources have been exploited for short-term economic returns, Bhutan has been able to successfully conserve and preserve its rich biodiversity. The Bhutanese people have preserved their natural environment for centuries because they have always lived in harmony with nature, and this relationship has been enforced within moral, cultural, and ecological borders. The Kingdom's commitment to preserving its biodiversity is firmly rooted in the understanding of the importance of the forest ecosystem for the survival of remote, isolated, and scattered communities, and their religion and belief systems. Its commitment is also evident from its "decision to maintain at least 60 percent of our land area under forest cover and to designate more than one-quarter of our territory as national parks, reserves and other protected areas" (RGOB 1999). It also placed environment conservation at the core of its development strategy. The people have a strong conservation ethic and a cautious attitude towards the environment. Beliefs have it that different spirits inhabit the sky and the earth. The mountains, rivers, lakes, cliffs, rocks, and soils are considered as the domains of

different spirits, and any pollution or disturbance of these habitats can bring death, disease, and destruction.

Buddhism plays a central role in people's life and culture. The basic principle is to give back to nature what has been taken away and accord respect to all forms of life. Buddhism teaches the interdependence among all life forms. The Bhutanese worship *lha* (deities of heaven), *lu* (beings of the under world), *tsan* (deities of mountains), and *sadag* (deities of the land). People's lifestyles and culture, rooted in Buddhist philosophy and values, have intrinsically guided their actions, which is in conformity with basic Buddhist tenets. This has established a close and harmonious relationship with the surrounding environment. Throughout Bhutan's history its people have always co-existed with nature in harmony and maintained interdependency, even before modern forestry legislation. Sustainability has been their way of life long before the creation of Agenda 21 at the 1992 Earth Summit.

Bhutan's rich biodiversity can be attributed, first, to the efforts of the government and its policy, and, second, to the harmonious relationship between human beings and nature, which is mostly influenced by Buddhist val ues. Such a symbiotic relationship between human beings and nature is built into the people's culture and belief system, and it was recognised long before the global movement for environment conservation began. Bhutan's guiding development philosophy of maximising "gross national happiness" (GNH) tries to strike the right balance between economic development on one hand and cultural and environmental preservation on the other. The concept of GNH, propounded by His Majesty the King Jigmi Singye Wangchuck "defines Bhutan's development objectives as improvement in the happiness and satisfaction of our people rather than the growth of Gross National Product" (RGOB 2000b). This unique approach sacrifices short-term gain in the pursuit of long-term sustainability. Ever since the start of planned socio-economic development in 1961, the country's leadership has ensured sustainable use of natural resources by integrating conservation and development. This became evident quite early when the first protected area was declared in 1964. As of today, there are nine protected areas,[1] excluding biological corridors set up as a "gift from the people of Bhutan to the Earth" to connect all protected areas in the country. Environment conservation forms one of four broad pillars propounded for attaining happiness for the Bhutanese people.[2]

Table 1. Bhutan's land cover area by percentage.

SN	Land cover	Areas (km^2)	Percent
1.	Forest	25,787	64.35
2.	Scrub forest	3,258	8.13
3.	Pasture	1,564	3.90
4.	*Tseri*/fallow-rotation	883	2.20
5.	Agriculture	3,146	7.85
6.	Snow and glacier	2,989	7.46
7.	Water-spread/marshy	339	0.85
8.	Rock outcrop	2,008	5.01
9.	Other	102	0.25
	Total	40,076	100.00

Source: Biodiversity Action Plan for Bhutan 2002, Ministry of Agriculture, Thimphu.

[1] Royal Manas National Park (1022.84 square kilometres [km^2]); Jigme Singye Wangchuck National Park (1400 km^2); Jigme Dorji National Park (4349 km^2); Bomdeling Wildlife Sanctuary (1486.75 km^2); Thrumshingla National Park (768 km^2); Phibsoo Wildlife Sanctuary (278 km^2); Sakteng Wildlife Sanctuary (650 km^2); Khaling/Neoli Wildlife Sanctuary (273 km^2); and Toorsa Strict Nature Reserve (650.74 km^2).

[2] The other three being socio-economic development, cultural preservation, and good governance.

As one can see in the table above, more than 72 percent of Bhutan's land area is covered by forests and scrub forests; only 7.85 percent is suitable for agriculture. This reality negates the advantages of the country's small population because the pressure on land is very high, and it will become inevitable that the people will intrude into the forests for cultivation—a great concern for the country.

The traditional land use in Bhutan has been sustainable. There are five kinds of traditional land uses: irrigated rice land (*chuzhing*); rain-fed dry land (*kamzhing*); land use similar to shifting cultivation, with very scant tree cover and short-fallow rotation (*pangzhing)*; long-fallow rotation/shifting cultivation (*tseri*); public woodlot, on which either individuals or a community have user rights for leaf-litter, fodder, and dry firewood (*sokshing*); and natural pasture/grass land, on which an individual or a community has grazing rights (*tsamdro*). Leaf-litter collected from the sokshing serves as bedding for cattle in their sheds, and the combination of decomposed litter and manure is applied to the fields so as to improve soil fertility. Before modern development began in 1961, the whole country was a large tract of undisturbed, pristine forests. The areas of use were confined mainly to the south—close to the border with India—around centers of population and near roads. It was because of the relative abundance of forests that the traditional architecture uses large quantities of timber and the per capita fuelwood consumption is one of the highest in the world.

The community managed its natural resources like forests and water through its indigenous institutions and unwritten customary laws, and ensured their sustainability by instituting positions of authority such as forest protector (*risungpa*), protector of forests against forest fires (*mesungpa*), protector of crops against wild animals (*shingsungpa*), and protector of drinking water and irrigation canals (*chusungpa*). For instance, the risungpa ensured proper distribution of fuelwood and timber for construction, and enforced *ridam,* the traditional practice of managing natural resources. Similarly, the mesungpa protected the forest from fires and mobilised firefighters from amongst the community. Individuals or communities used forests in the form of sokshing—a forest where individuals or the community exercised their customary right to collect or gather leaves for composting with animal manure as well as collecting fodder and dry firewood.

Under ridam*,* access to the utilisation of mountain resources is strictly prohibited for a certain period in a year. Restriction is imposed so as to prevent people from felling trees in the mountains that could provoke the displeasure of local gods and deities, who would then unleash a torrent of rain and hailstorms and destroy all crops. In the village of Galing in eastern Bhutan, a certain Meme Dendu infringed upon the rules by fetching bamboo from the forest. Within days, a large area of maize in the village was destroyed by an unprecedented hailstorm. The village imposed a fine on Meme Dendu, who had to slaughter his pigs and surrender a few newly-woven *gho* along with an amount of money (Sonam Kinga, unpublished).

Pressure on ecosystems (forests) did not lead to their degradation, because of the country's relatively small population and the sustainable land-use practices of the local people. The civil authorities (district officials) slowly took more control of traditional forest use and grazing rights, but the institutions of mesungpa, chusungpa, etc., continue even to this day. The role of civil authorities was slowly replaced by the Forestry Department, which was established in 1952 with a mandate to manage natural resources. There was no central regulation or administration prior to 1959, when the communities still managed the forests. After the launch of Bhutan's first five-year plan, created with the financial and technical assistance of India, a sudden change occurred in the country's forestry policy. This was greatly influenced by India's own national forest policy, which stressed both productive uses and the conservation of forests. Bhutan's policy gave forestry officials the role of policing.

3. Bhutan's forestry policy and people's participation

We shall now examine some important pieces of legislation that are directly or indirectly related to forestry, conservation, and the people's participation in various forestry activities or programmes.

Thrimzhung Chenmo, 1959 (Supreme Law of Bhutan, 1959) was the country's first forestry-related legislation. This law shifted the power from the community to the centre and changed traditional unwritten customary laws to formal written law. The National Assembly became an important lawmaker in many domains, including forestry. The 24th National Assembly made a royalty exemption for timber and firewood for domestic purposes, while it imposed a royalty on commercial forestry activities.

In 1966, the first protected area—Manas Game Sanctuary—was established to protect fauna. The forest conservation, management, and utilisation functions were largely managed from the centre through a network of functional administrative units. In the initial years, the primary focus of the Forest Department was to establish the forestry administration, the sustainable use of forests for income generation, afforestation activities, and sawmills and other wood-based industries. Scientific management of forests with forest management plans began in 1964 to decrease forest exploitation, despite the fact that the primary focus of the Forestry Department was revenue generation and that its management plans focused on logging. All activities related to forests and nature conservation were assigned to the Forestry Department.

The *Bhutan Forest Act, 1969,* is the first piece of modern forestry legislation enacted to protect the forests. The large-scale deterioration of forests in neighboring countries made Bhutan's government more cautious in pursuing systematic forest management programmes.

The National Assembly made civil authorities, mainly *thrimpon* (judges), responsible for enforcing forestry rules, and the forestry administration was made responsible for the protection of wild fauna, the maintenance of protected areas, and managing and controlling access to the forests through forest patrolling. Concerned with the over-exploitation of forests through logging, as well as continuous forest fires, new activities were started such as patrolling against illegal activities, controlling forest fires, checking unauthorised felling of trees and clearing of land, supervising authorised felling, assisting in natural regeneration of forests, and educating villagers on forest protection.

The *National Forestry Policy, 1974,* prescribes long-term national goals and objectives on forests and their utilisation. It was made mandatory to keep 60 percent of the land under forest cover, as was the need to demarcate forests and create management plans.

The *Land Act, 1979,* established all legal categories and types and uses of land, including agriculture and forestry. It specified local rights in sokshing, *tsamdo* (pasture land), and private forestry, besides outlining legal provisions for conversion of land types.

His Majesty issued the *Royal Decree on Social Forestry* in 1979, commanding the Department of Forest to revise forest policy and prepare a scheme for the promotion of social forestry in and around rural villages by involving the local people in the planting of trees on their own land or villages. The importance of community involvement in the protection and management of forest resources was increasingly recognised, since it is the people who live closest to the forests that are best suited to this role.

The *Social Forestry Rules, 1990,* were framed by the Ministry of Agriculture in response to His Majesty's command to mainly encourage the plantation of trees in the absence of policies or incentives. These are also called private forests rules, since they allow individuals to plant on dry land (*kamzhing*), wetland (*chushing*), permanent cultivated land under fallow cultivation (*lhotshe*), and shifting cultivation (*tseri*). No royalty is levied for forest produce harvested for any purpose from private forests in accordance with the rules. This rule is significant in reducing the threats to biodiversity caused by forest fires and the practice of shifting cultivation.

In line with the national policy of decentralisation, all kinds of field-level forestry programmes were made readily accessible to the local people. The Ministry of Agriculture adopted the "RNR Approach" in 1991 by creating a renewable natural resources (RNR) structure and functions to decentralise local planning, project implementation, and monitoring to districts. RNR includes the agriculture, animal husbandry, forestry, and irrigation sectors.

The *Forest Policy of Bhutan, 1991,* was framed to ensure that forest resources are used according to sustainable principles. The main goals of the policy are to first ensure conservation of the environment and, thereafter, to derive economic benefits from the forests through rational management.

The *Bhutan Forest and Nature Conservation Act, 1995,* is the most important piece of legislation ratified by the National Assembly in that year. It has nine chapters on 47 topics ranging from forest conservation and the use of forest timber, to the protection of wildlife in the kingdom. It provides a strong legal basis for all activities related to social forestry. The Act was framed after concerns were raised over the exploitation of forest resources and losses of wildlife. Its explicit goal is the protection and conservation of forest resources, while its implicit goal is conservation of biodiversity through land-use controls in national parks and game sanctuaries. It put a limit on the utilisation of forest produce for rural consumption and the requirement for forest management plans, and extract forest produce for commercial or industrial purposes. This is to ensure the sustainable management and utilisation of forests. Social forestry, introduced in 1979, was also incorporated in the new act. Among others, there are provisions for soil and water conservation and protecting forests from fire.

The most important provision for people's participation in forestry is social and community forestry, where any person is encouraged to grow and nurture forest crops on his own private land (see appendices). This policy reduced shifting cultivation by allowing individual, household, or community ownership of land, and it provided comprehensive guidelines for the balanced use and management of the nation's forest resources.

Geog Yargay Tshogchhung (GYT)*, 2002*, and *Dzongkhag Yargay Tshogdu* (DYT)*,* 2002, were enacted to further decentralise a wide range of powers, authority, functions, and responsibilities to the people, with provisions on community participation in conservation and forestry activities (see appendices).

In Bhutan, social forestry consisted of Community Forest (CF), which is management of local forest activities on government land, including community lands, by groups of traditional users; Private Forestry (PF), which is promotion of tree planting and forest or woodlot activities by individuals on private land, as well as creation of private nurseries and seedling distribution; and School Social Forestry, which involves institutional forestry focusing on education and developing awareness among students (RGBO 2000a).

The main objectives of the private, community, and institutional forestry programmes are (1) to promote community-based forestry development, (2) assist rural people to become self-sufficient in their forest resource needs and forest product development, and (3) integrate tree planting into farming systems and transfer responsibility of local forests resource management to traditional users organised into forest management groups. Before this programme was started in 1979 through a royal decree, all forests had been nationalised with the intention of ensuring environmental protection and equitable access for all Bhutanese citizens. Prior to that, local people

had unrestricted and unlimited privileges and access, using local trees and forests resources to meet their needs according to traditional practices.

Community and private forestry enabled sustainable local forest management on government reserve lands at various levels, especially at the village level, through the involvement of individuals in tree planting and other forestry-related activities on their private lands, and with groups of traditional users implementing activities specified in the community management plan. The ultimate objective of this programme is decentralisation of forestry-related activities to rural communities for effective forest management and protection. His Majesty exempted taxes and royalties on trees planted by the people on their own land under the social forestry programme, which was initiated by distributing free seedlings to households, schools, monasteries, and other institutions.

Under the decentralisation programme, the social forestry scheme (SFS) was designated as a district-level programme, and staff were accordingly transferred. District forestry extension officers were made responsible for the management of private forestry, community forests, school social forestry, protection of government forests from fire, prevention of encroachment into sokshing (leaf-litter), tsamdo (pasture land), and for the allocation of dry firewood. At the director's level, the forestry extension section was mandated to coordinate a nation-wide decentralisation programme on social forestry activities.

At the district level, social forestry activities have been broadened over time to include a wider variety of activities such as (1) the creation of community awareness of social forestry, (2) conducting needs assessments and participatory planning exercises, (3) community mobilisation of participatory forest and plantation management, (4) involving villagers in the production of tree saplings, (5) private nursery development and operations training, and (6) monitoring and evaluating planning programmes.

Several different forestry development programmes with social forestry component have been started across the country over the years, and social forestry activities have gained a high priority. They are increasingly oriented towards better and more productive partnerships with local communities. District staff and project specialists facilitate the villagers in planning, implementing, and reaping the benefits of forestry initiatives as part of the wider Renewable Natural Resources sector programme.

The Forestry Department declared Coronation Day (June 2) as Social Forestry Day in 1985 to promote widespread tree planting.

In order to maintain the considerable size of protected areas at the present level of ecological stability, the stakeholders have been involved in their management. These are subsistence farmers that depend either directly or indirectly on the surrounding natural resources. The protected area management staff collaborate closely with these stakeholders, who are the actual guardians of the natural resources, in order to improve their socio-economic conditions.

The Integrated Conservation and Development Programme (ICDP) was launched in the early 1980s to address and resolve the conflicting interests of bio-diversity conservation on one hand and the development needs of the local communities who depend on local resources on the other. Residing in almost all the protected areas in Bhutan are local communities that depend on the local resources for their subsistence. Since conservation cannot be achieved without fulfilling the socio-economic needs of these people, this integrated development programme identifies activities that lead to conservation as well as fulfillment of communities' socio-economic needs. Income generation though community-based enterprise development is one potential area, and eco-tourism is one viable programme in this area that will bring positive changes in conservation as well as development. Many historical and religious sites are also located in protected areas. The integration of such sites with park management activities may also result in strengthening community support towards the conservation of the environment.

In order to make such activities more effective, the implementation of integrated conservation and development programmes are left to the local authorities, which have first-hand knowledge of the community's development and constant dealings with the local people. In 2002 the Participatory Forest Management Project (PFMP) was started to "achieve sustainable forest management and improve rural livelihood in Bhutan by strengthening the capacity of local communities to utilize and conserve forest resources, with an emphasis on poverty alleviation and the equitable distribution of benefits."

4. Analysis of trends in terms of local participation

In Bhutan, people have always found the right balance between the conservation and use of natural resources. Traditional customary (unwritten) laws—which are based on people's faith, beliefs, traditions, and customs—exist in every mountain community and accord high respect for the natural environment. There is a popular saying that in every community there are no rocks, hills, mountains, forests, rivers, or lakes which are not abodes or citadels of deities, gods, goddesses, or *neydag zhidag* (owners of pace and land). When someone intends to construct a house, a ritual (*salhang,* literally land begging ceremony) must first be performed to beg the *sadag* (spirit, owner of the land) for some land or to get the spirit's permission to construct a house on its land. The people believe that disturbance of these abodes or failure to perform this ritual will lead to pestilence, natural disaster, or famine. Buddhism teaches respect for all forms of life and the principle of giving back to the Earth what one has taken away. Buddha taught that the compassion of a tree is such that it tries to shade the woodcutter even as it is being cut. But this conservation idyll is quickly changing.

Before the introduction of modern forestry legislation in the early 1960s, the Bhutanese people had unlimited access to their forests. Communities were able to conserve and use forests on a sustainable basis, first, because of the subsistence nature of forest use for family or household needs, and second, because the concept of commercial exploitation did not exist in the culture itself. But with the advent of modern development, more and more people, especially in urban settlements, started to exploit the forests. In the initial stages, even the government (Forestry Department) started to harvest forest products and, in some cases, the use and management of forests was very unsustainable. After promulgation of *Thrimshung Chenmo* in 1959, a series of legislations, bylaws, and rules that are directly or indirectly related to forestry have been passed by the National Assembly and government ministries. The government's forest policy showed progressive movement, going from a situation where the forest was there for everyone to exploit to a period when such rights and privileges over the forest were restricted. The government deliberately adopted this policy, not to deprive the people of some of their basic survival needs that come directly from forests, but rather to manage this important natural resource for both the present and future. Sustainability was its main concern. It also felt that a limited forestry service staff cannot adequately manage and control the local use of forests, and that participation of local people is the key to the conservation and utilisation of forest resources.

The government, being fully aware of the restrictions that the *Forest and Nature Conservation Act of 1995* put on the community's traditional rights over the local forests, adopted a forestry policy that allowed the people to participate directly and reap benefits from the programmes. Many major steps have been taken since then to promote people-oriented forestry and participatory forestry across the country as a means of utilising forest resources for the benefit of rural people who traditionally depend on forests for their livelihood. This policy, which is also seen as a way of conserving and also improving already degraded forests, combines elements of decentralised resource management to benefit village farmers. Participatory forestry management, such as community or private forestry, was designed on the principle that the plan should (1) be simple and easy, (2) meet the real needs of the people and solve their problems, (3) be practical for implementation, and (4) involve the community from start to finish.

An important piece of legislation is the *Royal Decree on Social Forestry*. The government increasingly recognised the importance of effective public participation in forestry, and it placed the sustainable supply of forest products for local requirements above commercial production. Many community and private forestry efforts in different parts of the country revealed mixed results, but there is no doubt that the stakeholders benefited.

The government of Bhutan is aware that some modern legislation only weakens existing informal arrangements that have evolved over centuries and helped local communities sustainably manage resources. These informal arrangements often embody a holistic understanding of local ecosystems and represent very tangible expression of Bhutan's cultural heritage. The challenge is to balance modern legislation that can advance environment conservation and, at the same time, respect and maintain informal arrangements that have proven to be able to achieve sustainable development—even in a harsh and unforgiving geography (RGOB 1999b).

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Appendices: Important laws and decrees related to local participation in forestry activities

a) Geog Yargay Tshogchhung Chathrim, 2002

ARTICLE 8. Regulatory Powers of Geog Yargay Tshogchung

The following are the areas of powers and functions of Geog Yargay Tshogchhung on which it can adopt and enforce regulations applicable within a geog:

8. protecting and harvesting of edible forest products in the local area in accordance with the Forest and Nature Conservation Act, 1995;
13. creation and designation of local recreational areas around villages.

ARTICLE 9. Administrative Powers and Functions of GYT

2. administration, monitoring and review of all ac-

tivities that are part of the geog plans, including the maintenance of…and extension centers of the renewable natural resources sectors;

7. conservation and protection of water sources, lakes, springs, streams, and rivers;
8. custody and care of communal lands, community forests, including *sokshing* and *nyenkhor tsamdo*, medicinal herbs and accordingly prevention of illegal house construction and all other types of encroachments in such community lands as well as on Government land and forests;

b) Dzongkhag Yargay Tshogdu Chathrim, 2002

ARTICLE 8. General Functions and Powers of Dzongkhag Yargay Tshogdu

As the highest forum for local policy and decision-making on matters of public interest in a Dzongkhag, the Dzongkhag Yargay Tshogdu shall:

1. make recommendations on activities with major environmental impacts such as construction of roads, extraction and conservation of forests, mining and quarrying.

ARTICLE 9. Regulatory Powers and Functions of Dzongkhag Yargay Tshogdu

The following are the areas of powers and functions of Dzongkhag Yargay Tshogdu on which it can adopt and enforce regulations, applicable within the dzongkhag:

1. designation and protection of areas of special scenic beauty or biodiversity as dzongkhag parks and sanctuaries

ARTICLE 10. Administrative Powers and Functions of Dzongkhag Yargay Tshogdu

The Dzongkhag Yargay Tshogdu shall have broad administrative powers and functions to give direction and approval on the following:

1. forest management plan including extraction, conservation and forest road construction in accordance with the Forest and Nature Conservation Act, 1995.

C) Forest and Nature Conservation Act of Bhutan, 1996

CHAPTER 1

Preliminary

3. Definitions

In this Act, and in all rules made hereunder:

b. "Community Forestry" means any area of Government Reserved Forest designated for management by a local community in accordance with the Rules issued under this Act.

e. “Forest” means any land and water body, whether or not under vegetative cover, in which no person has acquired a permanent and transferable right of use and occupancy, whether such land is located inside or outside the forest boundary pillars, and includes land registered in a person’s name as *Tsamdog* (grazing land) or *Sokshing* (woodlot for collection of leaf litter).

g. “Forest Produce” includes the following, whether or not found in the Forests:

trees and parts or product of trees including timber, firewood, charcoal, bark, wood-oil, resin, latex or natural varnish, katha/kutch, etc;

wild plants and parts or products of wild plants including flowers, seeds, bulbs, roots, fruits, leaves, grasses, creepers, reeds, orchids, bamboo, cane, fungi, moss, medicinal plants, herbs, leaf mould, or other vegetative growth, whether alive or dead, wild animals, including fish, and parts or products of wild animals including skin, hides, feathers, fur, horn/antlers, tusks, bones, bile, musk, honey, wax, *lac*; and boulders, stone, sand, gravel, rocks, peat, surface soil.

q. “Social Forestry” means planting of trees and/or other forest crops on private registered lands, within the 25-acre land ceiling, such as *kamzhing*, *tseree* and *pangzhing* lands and registered under the social forestry rules.

A Review of Forest Policy Trends for Community Participation in Pakistan

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Abstract

Pakistan is the second largest economy in South Asia and it is largely dependent on agriculture. Much of the country's economic activities are carried out on the plains or in irrigated areas. Although forests do not figure prominently in national statistics under current systems of national accounting, the economic activities on the plains can be affected by any major disruptions in the forest-dominated ecosystems of the mountains, riverain, irrigated plains, or the mangrove swamps in the south. Since the country's independence in 1947, the government of Pakistan has time and again formulated policies without much substance or room for local participation, possibly as a continuation of its colonial legacy. The first forest policy in Pakistan was introduced in 1955 with an emphasis on forestry serving national economic development. The 1962 policy emphasized that productive forests are commercial entities and it introduced policy objectives for the management of coastal forests. A 1975 policy continued with the old rhetoric, while introducing new initiatives on sectors such as silkworm rearing. Subsequent policies were introduced in 1980, 1988, 1993, and 2001.

Although the 1993 executive order banning the commercial felling of trees turned out to have far-reaching implications for forest conservation and management, Pakistan's forest policies have relied mostly on wishful thinking and lacked achievable objectives, with almost no role allocated for communities to play. These policies failed to properly valuate forests products and services, most notably the critical role that forests play in water yields and water quality, as well as ecosystem management in all mountain, plains, and coastal areas. Policy formulation to date has been dominated by public servants with little input from public representatives, and policies have ranged from being negative to neutral for community participation.

Keywords: Forest policy, Policy evolution, Ban on commercial felling, Public servant-guided process, Community participation.

1. Introduction

Pakistan is among the ten most populated countries in the world, with a geographic area of 307,000 square miles, or 493,963 kilometers (km)—an area more than double the size of Japan—and a population of over 135 million, with a population density of 389 persons per square mile (World Almanac 1998). Forest products and services once thought to be abundant are now known to be scarce in the country; Pakistan suffers far more severe forest scarcities than most countries in South Asia. Its natural forest assets are small, with forest area and national land utilization figures ranging from 3.1 percent (State of World Forestry 2003) to 3.6 percent of total land area (Akhtar Hameed Khan Centre for Rural Development 2002). Forest or woodland area per person is one of the world's lowest—one-thirtieth of a hectare (ha)—and most forests are slow-growing. Yet Pakistan's demands on its forests and other natural resources are high. The population is growing at 2.3 percent annually (Human Development in South Asia 2002), adding a population the size of San Francisco each year. With a relatively high industrial growth rate of about 6 percent and huge construction needs, Pakistan continues to put increasing demands on its forests for timber, fuelwood, and water.

About 4.2 million ha of Pakistan is under forests and planted trees, which is equivalent to 4.8 percent of the total land area. Eighty-five percent of this is public forest under the legal categories of state reserve and state protected forests, which has implications for community rights and user participation. Over 40 percent of these forests are coniferous and scrub forests on the northern hills and mountains. The balance is made up of riverine forests and irrigated plantations along the Indus River and its tributaries on the plains, mangrove forests on the Indus Delta, and trees planted on farmland. The total area under the control of provincial forest departments in Pakistan is 10.06 million ha, of which 6.1 million ha is rangeland (State of Forestry in Pakistan 1999/2000).

Table 1. Estimates of forest/trees area (thousands of ha)

Forest/tree cover class	Azad Jammu Kashmir	Baluchistan	Northern areas	North West Frontier Province	Punjab	Sindh	Total
Coniferous forests	241	42	660	940	30	—	1913
Scrub forests	16	504	—	539	132	—	1191
Riverine forests	1	20	—	13	27	112	173
Mangrove forests	—	2	—		—	205	207
Irrigated plantations	—	1	—	—	79	23	103
Farmland trees	7	23	6	70	306	54	466
Linear planting	—	—	—	2	14	—	16
Misc. planting	10	—	—	120	20	5	155
Total area	275	592	666	1,684	608	399	4,224
Geographic area	1,330	34,719	7,040	10,174	20,626	1,4091	87,980
% tree cover	20.7	1.7	9.5	16.6	2.9	2.8	4.8

Source: Forestry Sector Master Plan Government of Pakistan, 1992.

The systems of national accounting do not properly valuate forestry services, with sector contributions shown as only 0.2 percent of gross national product (GNP). This does not include the environmental services provided by watersheds in Pakistan's northern mountains for water yields, as well as the immensely important role of trees in maintaining the precious soils on the irrigated plains, where over 90 percent of national crop value is produced (Irrigation planning with environmental considerations, World Technical Study 166, 1992). Forest products include 3.5 million cubic meters (m^3) of timber and industrial wood produced annually, as well as fuelwood that meets 32 percent of national energy needs. Forests and related industries employ 500,000 workers involved in activities ranging from logging to village carpentry and making timber components for the construction industry (Forestry Sector Master Plan 1992).

2. FOREST TYPES IN PAKISTAN

2.1 Natural forests

The natural forests in Pakistan, to a large extent, depend on the hydrological cycle of the Indus River, starting 2,000 km upstream in the north of Pakistan, bordering China and Tibetan Himalaya, and flowing through parts of Kashmir to the southern most delta of mangrove forests along the Arabian Sea near the port city of Karachi. Between these two distant forest ecosystems lies yet another natural marvel—the riverine forests. Following is a brief description of the types of natural forests in Pakistan (both Indus River systems as well as non-Indus systems).

2.1.1 Mountain and foothill natural forests

a) **Coniferous forests.** These make up the bulk (55 percent) of natural forests in Pakistan (State of Forestry in Pakistan 2001). The natural range of these forests begins below the glaciers and grasslands between elevations of 900 to 3,800 meters, located along the lower ranges of the Himalayas and Hindukush in the north.

b) **Sub-alpine and Himalayan temperate forests.** The tree species growing here are *Abies pindrow* (fir), *Pinus wallichina* (blue pine or kail), *Picea simithiana* (spruce), and *Cedrus dodara* (deodar). Broad-leaved species include *Betula utilis* (birch), *Aesculus* indica (chestnut), *Junglans* regia (walnut) *Populus* spp. (poplar), *Quercus* spp. (oak), *Acer pictum* (maple), and *Prunus padus*.

The forests of North West Frontier Province and Azad Jammu Kashmir are managed under the selection system, based on long rotations of 100 to 120 years and regeneration periods of 20 to 30 years. Mature trees over 60 centimeters in diameter and dead and dying trees are removed to make way for established regeneration underneath. These forests are largely state reserve forest with no rights assigned unless specifically allowed. The private forests in these areas are managed under working plans prepared by forest departments with strict rules on cutting and regeneration.

c) **Sub-tropical chir pine forest.** These forests are found at lower elevations than the moist sub-alpine and Himalayan temperate forests. This forest type is less diverse in species, with *Pinus roxburghii* (chir pine) and *Quercus* (oak) species predominating. Chir

pine forest is managed under the uniform shelterwood system, in which its canopy is opened up uniformly and gradually over the area of a whole section. At final felling, 20 seed trees per ha are left to provide seed for natural regeneration. Once this is established, the seed trees are removed. Private forests in this ecosystem are also maintained under the uniform shelterwood system with forest management plans made by the respective provincial forest departments. The community has no legal rights in the chir pine reserve forest areas.

d) **Dry subtropical broad-leaved forest.** These forests are found on the foothills and lower slopes of the Himalayas, Salt Range, Kala Chitta, and the Sulaiman Range. They represent a transition between the hill forests and the thorn forests on the plains. There are many species here, but the three main ones are *Acacia modesta*, *Olea ferruginea,* and *Acacia nilotica*.

e) **Dry temperate coniferous forest.** These forests occur in the winter rainfall mountains of the northern areas, bordering India and China in the north, and on the cold, dry Baluchistan plateau in the west, bordering Afghanistan. Their main species *Juniperus exelsa* (juniper), *Pinus gerardiana* (chilghoza), and *Quercus ilex* (oak) grow slowly and do not regenerate easily in this dry climate. Remnants of juniper forest around Ziarat in Baluchistan form a unique ecosystem growing in calcareous soils at an elevation of 3,000 meters with rainfall as little as 300 millimeters.

2.1.2 Riverine forests

Riverine forests mostly grow along the Indus River in the Punjab and Sindh and along its main tributaries in the Punjab: the Jhelum, Chenab, Ravi, and Sutlej. Their existence depends on natural annual inundation between June and September, not only for water but also for the alluvial silt that provides rich nutrients for tree growth. The main species are *Dalbergia sissoo* (shisham) in Punjab, while *Acacia nilotica* (babul/kikar) and its associate species *Populus euphratica* (bahan), *Tamarix dioica* and *Prosopis cineraria* (Kandi), are predominant in Sindh. *Prosopis specigera* and other xerophytic species colonize higher-elevation areas now less frequently flooded. The entire area is designated as reserve forest with no legal rights provided for local communities and their participation.

2.1.3 Mangrove forests

The mangrove forests in the Indus Delta are the sixth largest in the world, occupying nearly the entire southeastern coast in Sindh province from north of Karachi to the Indian border in the southeast. To a much lesser extent they occur along the Baluchistan coast. Due to being subjected to human pressure and ecological changes, however, Sindh's mangrove forests have been irreversibly degraded. By comparison, those in Baluchistan are in almost pristine condition.

The mangrove ecosystem supports a complex marine food chain and a large seafood industry, comprising shrimp and fish products, which annually earns over US$70 million from overseas exports. Regional ecological changes and selective heavy exploitation, however, have already depleted tree cover, caused stunted growth, and eliminated three of the original eight tree species. According to the latest international publications, the mangrove forests in Pakistan have shrunk from 345,000 ha in 1980 to 176,000 ha in 2000 (State of World Forests Report 2003). Unlike reserve forests, mangroves are protected forests, with full community rights of grazing and fodder collection unless prohibited.

Diminished freshwater flow from the Indus River into the estuary has caused salinity along the coast to rise above what some mangrove species could tolerate, and loss of silt from the Indus has deprived the mangroves of their main source of nutrients. Of the five species still remaining, one species, *Avicennia marina* (timer), is 90 percent dominant.

2.1.4 Man-made forests

Man-made forests in Pakistan include plantations established on regular irrigation supplies of canal water. The irrigated plantations of the Punjab were originally established in the 1800s to provide fuel for colonial railways. Fuelwood is still the main output, but plantations are now managed for the production of wood for quality furniture and a variety of other industrial uses, including sporting goods. The irrigated plantations are the mainstays of the Punjab province's forest economy, while in southern Sindh province they take second place in importance to riverine forests.

3. Forest policy evolution in Pakistan

Pakistan, like any developing country, is at the bureaucratic stage of policy formulation. National development policies are conceived and planned by public servants rather than public representatives. Apart from vested interests and corruption, the policies are aimed at protecting the institutional interests of the department or the organisation as an end in itself, with the welfare of the people and sustainability of the resource taking a lower or zero priority.

Pakistan's forest policy has suffered from lack of proper reforms, and maintaining the status quo has been the main theme of the country's forest policies. Public sector institutions consider policy changes a lengthy, painstaking, and expensive job, and they lack the funds and the incentive to change them. In addition, any change could mean challenging the existing status quo, which is guarded by interest groups from within the same institutions.

Community participation can improve the management of forest resources if participation is broadly based, beginning at the planning stage, and involves real devolution of authority. Participation processes will be needed in resolving the two principal problems facing forests and people in Pakistan. First are the legal and institu-

tional problems that give local populations little incentive to improve forest conditions and instead lead to the overuse of forests. The principal change required here is in attitude on the part of government towards public participation in the policy formulation process. Second are the economic and political interests that stand in the way of ensuring that those locals with forest-use rights can exercise them and gain their full benefits. Here, entrenched interests both in forest departments and on the part of concessionaires still block progress.

Public participation should proceed in a supportive policy environment that properly values the environmental services provided by forests; in Pakistan's context, the most important are watershed services that yield water for irrigating over 40 million acres (16 million ha) of land downstream that contribute one-quarter to the country's $274-billion national gross domestic product (GDP). The environmental and economic values of other forest-based ecosystems, such as the mangroves in the Indus Delta, need to be studied and ascertained with the support of international research institutes for proper resource allocation and sustainable management.

3.1 The forest policies of Pakistan

The preparation of forest policies in Pakistan began right after the nation's creation. The first Forest Policy Resolution was declared in 1955 and then revised and updated in 1962, 1975, 1980, and as late as 1988 as part of the National Agricultural Policy.

A detailed literature review of Pakistan's forest policies, however, does not reveal any details on the process and methodology followed to frame them. We can only assume that all policies have been created with minimum consultation and whatever consultation that has taken place is at the government's intra-institutional level. It is therefore viewed as non-participatory and out of context.

It is critically important for sustainable forest management to identify local user groups and involve them in policy planning. This could be a major tool for the development of local communities and a prerequisite for effective, sustainable forest policy in Pakistan. Following is a brief analysis of the forest polices tried so far in Pakistan.

3.1.1 Forestry Policy Resolution of 1955

Adopted by the Constituent Assembly after eight years of Pakistan gaining independence, the first-ever forest policy made forestry programmes subservient to national development plans. Among other things, it emphasized the need to provide technical and financial assistance to private owners of forestlands and stipulated that 10 percent of the canal irrigated lands on the plains be designated as forest plantations. Most significant was the exclusion of any mention of coastal or mangrove forests. The following are the policy's elements or most salient features:

- Give high priority to forestry programmes in national development plans.
- Ensure sound management of privately-owned forests by legislation or other means, and provide technical and financial assistance for this purpose.
- Obtain power to control land use under a coordinated programme of soil conservation in areas where soil erosion is rampant or likely to occur as a result of defective cultivation practices.
- Enlist public support through education and extension for the conservation of forests.
- Classify forests on the basis of their utility and management objectives.
- Subordinate commercial aspects of forestry to its role in the economic development of the country.
- Undertake a bold programme of increasing forest area by methods most appropriate to local conditions. For West Pakistan, the following points were outlined:
    - Reserve at least 10 percent of canal irrigated land for plantations in new colonies.
    - Plant trees along canals, roads, railway tracks, and on arable wastelands.
    - Encourage farm forestry by village communities on compact blocks of cropland on a co-operative basis.
    - Develop existing forests by encouraging the most economic utilization of timber and other forest products.
    - Manage all forests under working plans to ensure sustained yields.
    - Create a properly constituted forest service staffed by trained personnel responsible for the execution of the forest policy.
    - Organise forestry research and education.
    - Afford adequate protection to wildlife and maintain their forest/habitat.

Source: Unpublished government papers, 1955.

3.1.2 1962 Policy Directive on Forestry, Watershed Management, Range Management and Soil Conservation

The 1962 forest policy had different objectives of specialization, such as forestry, farm forestry, and watershed management. Compared to the 1955 policy, this one looked for ways and means to manage each forest as a commercial enterprise and to increase utilization efficiency and reduce rotation age, including the stipulation that each landowner should grow a specific number of trees. The policy aimed to reduce the rights of local communities and called for the creation of a central forestry board, as well as the physical fencing-off of forests. Coastal forests and range management were mentioned in the policy objectives for the first time. The following sections contain the translated text of the policy.

a) Forestry

- Examine ways of managing each forest as a commercial tree farm under working plans for maximizing the yield of timber and fuelwood, and protect them effectively from threats such as fire.

- Undertake studies to reduce the length of rotations, ensure prompt regeneration, and improve techniques of wood utilization.
- Transfer to the forest departments the government-owned wastelands for afforestation and government-owned lands along canals, roads, and railway tracks for planting trees unless already planted.
- Start pilot projects in low rainfall zones to develop techniques for their afforestation.
- Include irrigated plantations in new colonization plans to the extent determined by the Government of West Pakistan, primarily for producing industrial wood.
- Enact legislation to secure a national effort for tree growing and require each landowner to grow a specified number of trees per unit area of landholding.
- Constitute a working party to prepare programmes for accelerating the pace of timber harvesting, transportation, and regeneration in the Chittagong Hill Tracts and Sundarbans forests (now Bangladesh).
- In West Pakistan, study the feasibility of afforesting riverain lands in consultation with the Flood Commission.
- Start pilot projects to determine grazing capacities of forestlands in various ecological zones.

b) Farm forestry

- Make farm forestry the concern of existing agricultural departments in non-project areas and of the Agriculture Development Corporation in project areas. Conduct research to select fast-growing tree species from various ecological zones for planting on shelterbelts and windbreaks, and on planting trees on saline and marsh lands.

c) Watershed management

- Make forest departments responsible for ensuring soil conservation in forests under their control. For soil conservation on private land, entrust the responsibility either to the Agriculture Development Corporation or to a specifically-constituted soil conservation organisation comprising personnel from all the concerned disciplines (forestry, agriculture, animal husbandry, cooperatives) and require the preparation of watershed management programmes along the following lines:
    - o Survey entire watersheds.
    - o Gradually shift people from mountain areas to new canal colonies.
    - o Supply electricity to hill populations, where possible, and subsidize kerosene oil stoves.
    - o For monitoring the programme of forestry development, revive the Central Board of Forestry.
    - o In the provinces, review forest organisations and formulate proposals for making necessary changes.
    - o If needed, amend forest laws to make them more effective by enhancing penalties and removing procedural hurdles.
    - o Extend the Pakistan Forest Act to the Malakand Civil Division of North West Frontier Province and examine possibilities for its application to the northern areas.
    - o Appoint special forest magistrates for expeditious addressing of over 150,000 pending forest offence cases.
    - o Start timber harvesting by forest departments instead of selling standing trees to forest contractors until public sector corporations are established for this purpose.
    - o Review forest management (working) plans to make them more efficient and comprehensive.
    - o To prevent the destruction of natural vegetation in the mountains, concentrate scattered populations in centrally-located villages, construct houses in such villages and provide them on a rent or purchase basis to the local inhabitants. Locate wood-based industries in forest areas to redirect the attention of mountain populations from the theft of forest trees to legal and productive activities.
    - o Launch massive programmes of planting fruit trees in the mountains, supported by the free supply of planting stock and suitable subsidies to cover costs of land development and planting. Start an ambitious programme of soil conservation to prevent soil erosion and to generate employment.
    - o Fence-off forests to prevent human and livestock damage. Subsidize cooking stoves and kerosene oil for the mountain people in order to reduce pressure on forests for firewood. Plant trees in all areas under the control of forest departments and in the compounds of all government buildings. Consider acquiring unculturable land along riverbanks for planting. Complete tree planting on all plantable stretches along roadsides, canal banks, and railway tracks.
    - o Promote farm forestry through extension. Stipulate that village bodies require residents to plant trees around their homesteads.
    - o Implement the range management programme formulated by the National Committee.
    - o Prepare a plan for planting coastal areas as extensively as possible.

Source: Policy directive on forestry, watershed management, range management and soil conservation, 1962, Government of Pakistan.

3.1.3 1975 Decision of the Council of Common Interest

This policy continued in almost the same mode of progressive reduction of local participation as the previous one. It mentions as one of its objectives to "extin-

guish the rights of local people" and to establish new, specialized forestry aspects like silkworm rearing. It also called for environmental planting on slopes over 50 percent. The following outlines the details of the 1975 policy:

- Expedite implementation of the government decision to entrust timber harvesting either to forest departments or autonomous bodies.
- Improve timber-harvesting methods for better regeneration and to reduce timber wastage and damage to soil.
- Increase forest productivity through introduction of fast-growing tree species and wider use of artificial regeneration using high-quality nursery stock. Extinguish the rights of local people in forests. Make alternative feasible arrangements for meeting the bonafide requirements of the use-right holders. Provincial governments may consider providing adequate quantities of water for irrigated plantations.
- Investigate the feasibility of providing increased water supply to riverain forests by lift or tubewell irrigation.
- Arrange adequate water supply for linear plantations. Locate forest industries as close to forests as possible to reduce the pressure of people on adjoining forests and to provide them employment and increased income.
- Provide funds to forest departments for developing plantations for meeting the needs of wood-based industries.
- Encourage silkworm rearing on a cooperative basis and the creation of special mulberry plantations, provide training facilities and disease-free silk seed, and arrange for product marketing.
- Launch a massive drive for fruit tree planting in suitable mountain areas. Supply seedlings at nominal cost and provide assistance for the construction and improvement of terraces.
- Entrust management of privately-owned forests to cooperative societies, with technical assistance and guidance provided by forest departments and timber harvesting by public sector corporations.
- Encourage farmers to plant trees on their land at suitable locations, such as around village habitations and tubewells, without obstructing the flight paths of plant protection aircraft. Forest departments should continue to provide plants and technical assistance to farmers.
- Since existing forest legislation provides adequate powers to governments to take measures to arrest soil erosion in the hills and to restrict cultivation on slopes exceeding 50 percent, emphasize positive measures such as watershed management, afforestation, and education of farmers, and use negative legal sanctions as a last resort.
- Since both the forest and agriculture departments have a role to play in soil conservation, delimit areas for each in accordance with the nature of the problem.
- Do not permit deforestation of wooded areas.
- The governments of North West Frontier Province and Baluchistan may consider creating separate forest departments at the secretariat level, in order to focus specialized attention on specific problems of forestry. Also strengthen the forestry set-up of the federal government.
- Transfer linear plantations to forest departments.
- Strictly enforce forest laws and appoint special forest magistrates to reduce the occurrence of forest offences.
- Transfer control of the Pakistan Forest Institute, Peshawar, from its board of governors to the Ministry of Food and Agriculture of the federal government.
- Orient forest education towards producing specialists in different fields.
- Further liberalize provisions for advanced education abroad for forest officers.
- Step up research by the Pakistan Forest Institute on introduction of fast-growing species, problems of watershed management, and demand and supply of forest products.

Source: Unpublished government policy papers, 1975.

3.1.4 1980 Relevant Provision of National Agricultural Policy

The 1980 policy mentioned a focus on fast-growing tree species as a new objective or element and the production of industrial wood as part of the government's plan. The following are the elements of the policy:

- Launch a bigger thrust on planting fast-growing tree species in areas outside forests.
- Grow fuelwood plantations in areas of wood scarcity on wastelands through motivation of people including the use of incentives.
- Make effective arrangements for motivating people to participate in massive tree planting and nature conservation.
- Manage wild lands in accordance with their potential for optimum utilization in various forms, including recreation and wildlife management.
- Harvest timber through public sector corporations or by forest departments, using modern methods.
- Increase production of industrial wood to progressively meet the full requirement of wood-based industries.
- Coordinate and integrate development of forestry and wood-based industries.

Source: Unpublished papers of the Government of Pakistan, 1980.

3.1.5 1988 Recommendations of the National Commission on Agriculture

This policy came into being as a result of a commission constituted by the government to improve agriculture; an earlier agriculture commission was formed in 1959. The 1988 commission called for higher-level posi-

tions for forestry and watershed management personnel and in its policy called for the creation of a long-range policy for the management of forestlands in Pakistan and the establishment of a watersheds and arid lands development authority under the Ministry of Food and Agriculture (National Commission on Agriculture 1988).

3.1.6 1993 Policy Banning the Commercial Felling of Trees

This policy came in the form of an executive order by the caretaker government in 1993. Although it can be said that all Pakistan's forest policies came into being without following proper processes (and the 1993 policy is not an exception), this policy, which consisted of a single piece of paper, may have been the most far reaching. Initially it ordered a complete ban on commercial forest exploitation for two years. The ban was successively extended by following governments and was still in force until 2001. Although the policy had a neutral impact on communities, owners of private forests in North West Frontier Province were said to have been unhappy with it.

Source: Unpublished record of Government of Pakistan, 2002.

3.1.7 2001 National Forest Policy of Pakistan

The most recent forest policy under consideration of Pakistan's federal government is the 2001 National Forest Policy. The process has been initiated but has not yet been completed. Its goal is to foster the sustainable development of Pakistan's renewable natural resources, the maintenance and rehabilitation of its environment, and the enhancement of sustainable livelihoods of its rural population, especially women, children, and other minority groups.

The following is a list of the 2001 forest policy objectives under consideration:

- Reduce negative socio-economic impacts.
- Reduce political interference in forestry and wildlife departments.
- Renovate and re-invigorate the institutions involved in the management of renewable natural resources.
- Support local governments in the sustainable development of their renewable natural resources.
- Institute policies to protect fragile ecosystems.
- Improve and sustainably manage riverine forests and irrigated plantations.
- Achieve the preservation of old-growth and other unique forests.

Source: Unpublished record of Government of Pakistan, 2002.

4. Conclusion

The existing situation in Pakistan on the forest policy front calls for a complete turn-around in the approach to policy formulation. In general, the objectives of a policy are a direct outcome of the processes followed to frame it, and in Pakistan there are multiple users of the forest and its products, and forest uses vary in scope and nature. Large communities residing close to forest areas often depend on them for their survival, while others use forests for commercial purposes only, and yet another large portion of the population does not use forestlands directly but is influenced by them in one way or another. The last category includes people living below watersheds, institutions such as government wildlife departments, and the international community concerned about global environmental issues. Pakistan is a signatory to many international treaties that hold it responsible for managing its natural resources, particularly its forests, in a certain manner. Thus forest policy should incorporate the binding agreements made with the international community. All these various parties are considered stakeholders in national forest reserves, and their concerns and opinions should be reflected in policy objectives. Only then will Pakistan be able to safeguard the integrity of its environment and conserve its forests in all ecologically valuable areas of the country.

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Resource Degradation, Property Rights, Social Capital and Community Forestry in Cambodia

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Abstract

Following the dynamics prevailing in other Asia-Pacific countries, Cambodia has experienced high rates of deforestation over the past decade at the hands of logging concessionaires. Despite international efforts to reform the concession system, the Kingdom's forests have been severely degraded, and although there has been increasing interest in community forestry in recent years, the devolution of forest management to local communities is still in its early stages in Cambodia. This paper identifies significant obstacles to the successful development of community forestry. These include the absence of secured property rights for resources under common management and the depletion of social capital, the result of thirty years of violent conflicts. While there remain opportunities to grant local people control of forests, only degraded areas with little timber value have been allocated to community forestry. Community forestry in Cambodia requires more policy-making attention and more financial and technical resources if it is to make any significant contribution to biodiversity conservation and poverty alleviation in Cambodia.

Keywords: Community forestry, Deforestation, Property rights, Social capital, Cambodia.

1. Introduction

Following thirty years of genocide and violent conflicts, the Kingdom of Cambodia is slowly emerging at the dawn of the twenty-first century as an essentially agrarian society with limited infrastructures and human resources. The country lags far behind its neighbours on all basic social indicators, including infant mortality, educational enrolment, and access to safe drinking water. With a gross national income of U.S.$280 per capita, Cambodia belongs to the group of the twenty poorest countries in the world (World Bank 2003). At least 36 percent of the population, or more than four million people, are unable to buy food to meet the daily requirements of 2,100 calories and 58 grams of protein (MoP 1999). This poverty line corresponds to the ability to spend 45 cents a day on basic food, clothing, and shelter. Cambodia is ranked among the leading twenty countries for its dependence on international aid when measured as a percentage of gross national product (GNP), as a percentage of export receipts, and as a percentage of government revenue (Godfrey et al. 2000). The Kingdom is endowed with bountiful natural resources, in particular tropical forests, which may provide an opportunity for its social and economic development. Unfortunately, as in many other Asia-Pacific countries, deforestation has proceeded unabated over the past decade, leading to the gradual depletion of the resource base and wide-ranging negative social and environmental impacts. While the bulk of government and international efforts and resources in Cambodia have focused on reforming the forest concession system, community forestry has often been marginalised (McKenney and Prom 2002).

The property rights regime literature examines the management of natural resources by local users and the conditions under which self-governance may be successful (Baland and Platteau 1996; Gibson, McKean, and Ostrom 2000; Ostrom 1990, 1999; Stevenson 1991). The attributes of the forest resources to be managed and the attributes of the communities responsible for their management determine the likelihood of local people willingly forming self-governing institutions. Against these attributes, the purpose of this paper is to assess the social, economic, and biological conditions underlying community forestry initiatives in Cambodia. The paper focuses on the following more salient resource and user attributes of community forestry activities in Cambodia: the characteristics of forest resources under community management, the existing social capital in traditional Cambodian communities, the prevailing property regimes for resource management, and the contribution of community forestry to social and economic development.

2. Trends in deforestation and stakeholder exclusion

2.1 Towards the exhaustion of forest resources

The first post-war assessment of Cambodia's forests was produced in 1993 using Landsat satellite imagery interpretation. The forest cover was then estimated at 9.1 million hectares (ha), or 62 percent of the total land area. Between 1973 and 1993, the country had lost 1.4 million ha of forests (Thung 1994). The most recently available assessment dates back to 1997 and reports a 58 percent

forest cover rate (World Bank 1999). In the political vacuum following the fall of the Khmer Rouge regime in 1979, deforestation rates increased substantially, as the main contending factions engaged in widespread logging to bolster their military capabilities for controlling the country (Talbott 1998; Le Billon 2000). The 1993 Paris Accords, signed under the aegis of the United Nations, ushered in a new era of unstable parliamentary democracy in the Kingdom of Cambodia. In 1994, the newly elected Royal Government of Cambodia (RGC) established a system of timber concessions granting logging rights to private companies. While the annual allowable cut for sustained production has been estimated to be 500,000 cubic meters (m^3) per year, actual levels of harvesting have been up to eight times higher. The Secretariat of the National Environmental Action Plan (NEAP) has suggested removals close to 2.3 million m^3 in 1995 (MoE 1998). A log-monitoring project funded by the International Development Association (IDA) reported that the actual harvest was four million m^3 of timber in 1997 (IDA 1998). In the year 2000, the Asian Development Bank (ADB) performed a wide-ranging assessment of the Cambodian forestry sector. The study discovered that half of the concession area had no timber of commercial value left, and concluded that without major reorganisation of the concession system, Cambodia's forest resources would be exhausted within six years (ADB 2000).

2.2 Stakeholder confrontation in the forests of Cambodia

In separate works, the author has discussed the stakeholder dynamics that drive deforestation in Cambodia (De Lopez 2001a, 2002). Over the past ten years, the international community has attempted, without success, to control deforestation and to ensure the preservation of a forest resource base for development. The objective of sustainable and equitable use of forest resources remains at odds with the interests of powerful stakeholder groups, including the economic, political, and military elites.

Rural people have essentially been excluded from decision-making and benefit sharing. Timber companies prevent local people not only from logging but also from collecting firewood, medicine, or food from the forests. Armed employees and military personnel strictly enforce concession rights. The cost of deforestation is economically significant for local communities, while the benefits of the concession system, in terms of sustainable employment and community infrastructures, have yet to materialise. Since 1995, confrontation over the implementation of sustainable forestry has placed Global Witness, a non-governmental environmental advocacy organisation, in opposition against the government and logging concessionaires. Global Witness has been a harsh critique of Cambodia's "deforestation without limits," using "investigative techniques" to publicise illegal logging activities (Global Witness 1996a, 1996b, 1998, 1999a, 1999b, 2000, 2001, 2002). The organisation's country director was molested near her office in 2002 and left with a warning to "quit" (Barron 2003a, 2003b; Farrell and Vann 2003). In 2003, the government severed all working relationships with Global Witness, accusing the organisation of exaggerating reports of illegal logging activities. The Cambodian forestry sector is characterised by an atmosphere of distrust of local people for government agencies and logging companies. In a climate of bullying and intimidation, conflicts commonly occur as a result of denied access of local communities to forest resources (McKenney and Prom 2002; Koroma 2002).

3. Community forestry experiments

The Cambodian Development Resource Institute (CDRI) has developed an inventory of community forestry activities in Cambodia based on existing documents and interviews, but without field verification (McKenney and Tola 2002). A total of 237 "community forests" were identified, covering 71,724 ha and affecting 411,440 people. More than half of these were initiated before the year 2000, the earliest in 1991. The data suggests that most community forests were started in the late 1990s, and that the rate of establishment has increased since the year 2000. A team lead by Jürgen Fichtenau has similarly conducted stocktaking of "community forestry initiatives" in Cambodia (Fichtenau et al. 2002) and identified a total of 57 community forestry initiatives that cover a combined area of 83,000 ha, distributed among eighteen different administrative provinces of Cambodia. Some 404 villages, representing an estimated population of 415,000 people, are involved in community forestry initiatives. These figures appear to be comparable to those of CDRI. Two-thirds of all community forestry initiatives are located in areas with heavily degraded forest or no forest at all, while half are located in agricultural areas with a population density of over 235 people per square kilometre (km^2). As there is no centralised registry, the number of ongoing community forestry projects may be much larger, but it is unlikely to be substantially more significant in area covered.

4. Forests without trees for local people

The reported figure of 415,000 beneficiaries from community forestry initiatives requires further discussion (Fichtenau et al. 2002). This number may have been inflated by both national and international organisations involved in community forestry in Cambodia, as it represents an indicator by which funding agencies may measure the success of their projects. The question arises as to whether or not local people derive economic benefits from community forestry activities to help improve their livelihoods.

If 415,000 people are to share the benefits of 83,000 ha of forests, this is equivalent to a ratio of 0.2 ha of forest per person. Assuming a maximum allowable cut of ten m^3 per ha, as stipulated in the Cambodian forestry law, the annual timber harvest would represent some two m^3 per community forestry member. The problem is ex-

acerbated by the fact that the majority of these community forestry initiatives only grant local people stewardship over degraded ecosystems in densely populated areas. Without commitment to intensive forest rehabilitation over longer periods, the timber benefits are likely to be low or insignificant. The main objective of existing community forestry activities has been to plant trees by providing seedlings to local people and by promoting smallholder tree growing. Thus, the management of forests, using the definition of the Food and Agriculture Organisation of the United Nations (FAO) of areas with a minimum of ten percent crown cover, has not been, to date, granted to local people. In Cambodia, there exists no example of undisturbed forest under local self-governance. Thus, in the Cambodian context, the expression "community forestry" is misleading, as it is limited to community replanting and rehabilitation programmes, and does not include the management of forests with mature trees.

The Santi Sena community forestry project, as observed by Bey Phal and Cheam Mony (2000), provides an illustration of the prevailing attributes of forests under self-governance in Cambodia. The project is located in the province of Svay Rieng, some 135 km to the east of the capital city, Phnom Penh. The Santi Sena community forest covers an area of 500 ha that had been totally logged by 1994, when the local pagoda formed a non-government organisation to undertake activities in environmental protection and awareness raising, agricultural development, and the promotion of peace in the aftermath of three decades of war. At the establishment of the community forestry project, only three Dipterocarp trees remained standing. Villagers believed that these were under the protection of forests spirits, also known as "Venerable Old Men" or *Neak Ta*; ox carts used to try to transport trees had their axles broken, and loggers went accursed. The objective of the community forestry project has been to undertake reforestation work. Villagers have received food for germinating and planting tree seedlings, and demarcating and patrolling the area. As trees are not expected to reach maturity for 25 to 30 years, the benefits to the local communities solely consists of non-timber forest products such as firewood, medicinal plants, mushrooms, and fish from flooded areas. Sante Sena is considered to be one of the more successful community forestry projects in Cambodia. Unlike the overwhelming majority of community initiatives in Cambodia, this one has actually come from local users and not international agencies. Sante Sena has attracted funding from a variety of donors, including Cooperation Internationale pour le Developpement et la Solidarité (CIDSE), Oxfam Great Britain, the Konrad Adenauer Foundation, and the Canada Fund. Given the highly degraded nature of the area, however, and the fact that benefits from timber may only materialise in the longer term, the project remains dependent on outside financial assistance for investments in small-scale infrastructure and reforestation.

From an economic perspective, local people are more likely to form a self-governing institution if the benefits of doing so outweigh the costs (Baland and Platteau 1996; Ostrom 1990, 1999). Community forestry requires financial and technical resources for agreeing upon and enforcing new institutional arrangements. Restrictive harvesting rules for forest products may impose costs on communities that have few alternative economic opportunities. If the forest is at such a point of deterioration that improvement is not feasible without intensive rehabilitation, there may be little advantage resulting from the community self-organising. If the resource is perceived as abundant, there is no reason for communities to organise either. Thus, community self-management of forests is more likely to occur when local people have already observed a substantial decrease in existing forest resources. If over-logged tropical forests are set aside, they may regenerate to recover ecosystem functions. However, the cost and complexity of these operations cannot be underestimated (Whitmore 1975; Banerjee 1994). A major impediment facing existing community forestry projects in Cambodia stems from the relatively high costs incurred by users for managing degraded or non-existent forest resources, when compared to the limited benefits generated from non-timber forest resources. Heavily degraded land and scrubland not only have reduced growing stocks of trees but also reduced ecological productivity for non-timber forest products.

5. Community forestry without community property rights

Economists traditionally distinguish between four broad types of resource management regimes: state property regimes, private property regimes, common property regimes, and open-access regimes (Bromley 1991). A resource management regime may be defined as a structure of rights and duties characterising the relationship between individuals with regards to their use of a particular environmental resource, such as forests. In a state property regime, ownership and control of forests rest with the state, which may directly manage and control the use of forests, or grant organisations or individuals usufruct rights over forests. Private property regimes are characterised by the sole control and use of the forest resource by an owner. Under the common property regime, a group of individuals, such as a group of people from the same village, tribe, or family, hold ownership rights of the forest resource. The behaviour of all members of the group is governed by accepted rules over the use of the forest and the distribution of its benefits. Common property is fundamentally similar to private property in regards of the fact that non-owners are excluded from decision-making and from using the forest. Thus, common property is essentially private property for a specific group. Open-access regimes are characterised by the absence of any kind of property rights; the resource is available to any individual who captures it first.

In 1975, the Khmer Rouge abolished land ownership to transform Cambodia into an "indentured agrarian state" and organised into massive gangs of labourers (Kiernan 1996). Private landownership was only re-established in 1992. The years of conflict had destroyed pre-existing cadastral records. Even in cases where property rights could be demonstrated by documents pre-dating the war, the state decided to allocate land on the basis of present occupation and cultivation. From the fall of the Khmer Rouge in 1979 to the re-establishment of land ownership in 1992, Cambodia's natural resources were under a management regime approaching open access, which resulted from a breakdown of the state authority and management system, combined with the dissolution of social capital and traditional common property regimes. The theory of the property rights regime predicts that in cases of open access, where anyone can enter a resource pool and appropriate resource units, over-exploitation of the resource will result (Dasgupta and Heal 1979). Under open-access regimes, forest access is completely non-exclusive—no one can be prevented from exploiting the resource. The prescribed policy has traditionally been for government to impose a different set of institutions on open-access resources, notably the creation of private property or common property as more efficient forms of ownership.

Most of Cambodia's forests are currently under state ownership. The Ministry of Agriculture, Forestry and Fisheries (MAFF) manages forest reserves for timber production, while the Ministry of Environment (MoE) manages protected areas for biodiversity conservation. In 1994, the Royal Government of Cambodia introduced a system of forest concessions giving usufruct rights to private companies. Weak institutional resources and budgetary constraints greatly limited the state's ability to effectively manage the national forest estate. Concessions were touted as a panacea to curtail illegal logging activities and to increase timber royalties for the government (World Bank 1996). Within three years, the control of seven million ha of forests was transferred to thirty-three different concessions managed by Cambodian, Chinese, Japanese, Malaysian, Russian, Taiwanese, and Thai companies. The process through which concessions were granted consisted of direct and non-transparent negotiations between the state and the private companies, thus leaving ample room for nepotism and corruption (White and Case 1998; World Bank 1996). Concessionaires must abide by the Cambodian Forestry Law and the Sub-Decree on Environmental Impact Assessment (EIA), which clearly articulate sustainable forest management practices, including allowable annual cut and environmental impact mitigation requirements (RGC 2002; MoE 1999). Following an assessment of forest concessions in the year 2000, the ADB concluded that the operational practices of the majority of forest concessionaires were "alarmingly at odds with the goal of sustainability" (ADB 2000). Deforestation in Cambodia is part of a broader trend of large-scale degradation perpetrated by multinational logging firms across the Asia-Pacific region, as they move from country to country, exhausting national forest resources (Dauvergne 1997, 2001; Ross 2001). Many of the firms operating in Cambodia have more than thirty years of experience in rapidly extracting timber resources, building political and military support, and resisting meaningful attempts at environmental reforms. Patterns in Cambodia of the corruption of government officials, client-patron relationships, military involvement, exclusion of local communities, and disregard for environmental standards are reminiscent of the forestry sectors of Indonesia, the Philippines, and the Solomon Islands.

Resource degradation in state property regimes occurs when government agencies cannot properly control the behaviour of those authorised to use forest resources, such as logging concessionaires, and when government is weak and unable to confront powerful interests (Bromley 1999). These conditions have been broadly prevalent in Cambodia. Part of the state apparatus may have also been unwilling, rather than unable, to enforce environmental legislation. Forest concessionaires have benefited from client-patron relationships with the Cambodian political and military elites, thus confounding national and international attempts to reform the concession system (De Lopez 2001a).

An authority system willing and able to uphold the rights and duties of owners is an essential component of any property rights regime (Bromley 1991). To have a property right is to have secure control over the benefits stream of the forest resource, and to be able to call upon the authority system to enforce this control when it is threatened by non-owners. While forest concessionaires have been able to enjoy exclusive and enforceable usufruct rights over Cambodia's forest resources, the rural population remains vulnerable to land dispossession. Forest concessions have prevented local people from using both timber and non-timber forest resources (Global Witness 2000, 2001, 2002). In contrast, due to the inefficient pace of land titling, fewer than ten percent of rural families who own land have been able to obtain full legal titles (Oxfam Great Britain 1999; United Nations World Food Programme 1999; World Bank 2000). Common property ownership and the traditional rights structure of forest resources have largely been ignored by policy-makers in Cambodia. For instance, the five-year plan for the forestry sector (2001–2005) discusses "community forestry management" in fewer than 150 words (Department of Forestry and Wildlife 2001). Without any exception, none of the communities participating in community forestry initiatives has secured usufruct or property rights over forest resources. Common property resource regimes have no legal basis in Cambodia. Community forestry initiatives and their participants largely depend on the leniency and discretion of local and national agencies in granting them limited rights over forest resources on an ad hoc basis.

The national community forestry programme imple-

mented by the non-governmental organisation Concern Worldwide exemplifies common property rights issues in Cambodia (Concern Worldwide 2003). The programme was initiated in 1991 to provide rural people with supplies of forest products on a sustainable basis, as well as to preserve their cultural and spiritual uses of forests. In the provinces of Kompong Chnang and Pursat, community forestry activities essentially consist of the assisted regeneration of degraded forests. Villagers have formed local management committees responsible for setting up and enforcing rules for sustainable practices, including a ban on logging and grazing. The transfer of management to local villages is governed by a special agreement with the Provincial Department of Forestry, and remains an "experiment in local management." Villagers worry that once the trees have reached maturity, "the Forestry Department would simply come in and cut them down for sale," denying local people the benefits from having protected the forest.

The recognition of common regimes and traditional property rights remains in its infancy in Cambodia. Under the instigation, support, and leadership of international organisations involved in community forestry initiatives in Cambodia, the government has developed a draft Sub-Decree on Community Forestry (RGC 2002). It governs the establishment, use, and management of forest resources by communities. A community is defined as "a group of residents in one or more villages in the Kingdom of Cambodia who share a common social, cultural, traditional and economic interest in the sustainable use of an area of natural resources, which they live in or near, for subsistence and livelihood improvement purposes." A "community forestry agreement" is a written agreement between communities and the state authority responsible for monitoring and evaluating community forestry activities and ensuring the sustainable use of forest resources. The Ministry of Agriculture, Forestry and Fisheries has jurisdiction over community forestry management outside of protected areas and the Angkor Management Area, which respectively fall under the purview of the Ministry of Environment and the APSARA Authority (Authority for the Protection and Management of Angkor and the Region of Siem Reap). Communities are responsible for establishing a forestry management plan and rules governing sustainable use, rights of access, user fees, benefit sharing, and fines for violations. Communities have the right to harvest and sell mature timber as well as non-timber forest products. There is a moratorium on timber harvesting in the first five years of approval of a community forestry agreement. The law includes the following as non-timber forest products: deadwood, wild fruits, products from beehives, and resin. Community forestry agreements remain in effect for a period of fifteen years from the date of their approval. One year before the expiration, communities may apply for an additional fifteen-year term.

Although not explicitly listed as a non-timber forest product, the spirit of the law could be interpreted so as to include carbon sequestration benefits from carbon-offset schemes, such as the Clean Development Mechanism (CDM) of the Kyoto Protocol. Thus, the sub-decree grants local communities wide-ranging control over the use of both timber and non-timber forest products. However, the limitation of the community forestry agreement to fifteen years may push local people to harvest trees before maturity lest a request for extension should be rejected. In addition, at any point in time, with a six-month notice, community forestry agreements are subject to unilateral termination by the state if "there is another purpose which provides a higher social and public benefit to the Kingdom of Cambodia." This clause of the sub-decree may perpetuate the present situation of unsecured common property rights, as it endows state agencies with the option of dispossessing local people under the fallacious rational of higher social benefits. It was originally argued that the transfer of state forests to logging concessionaires would provide higher social and public benefits for the country. The Sub-Decree on Community Forestry was adopted by the Council of Ministers in October 2003.

6. Social capital destroyed

There are many existing definitions of social capital, which broadly encompasses interactions that lead to and result from social organisation. Robert Putnam (1993) describes social capital as features of social organisation, such as networks, norms, and trust, which facilitate coordination and cooperation for mutual benefits. Francis Fukuyama (1995) considers trust to be a measure of social capital, which is accumulated through reciprocity and cooperation, and which provides a basis for prosperous societies. Norman Uphoff (2000) distinguishes between structural and cognitive social capital. Structural capital consists of relationships, networks, associations, and institutions, while cognitive social capital includes values, norms, civic responsibility, reciprocity, altruism, and trust. A general consensus exists among researchers that social capital facilitates collective action for development. As discussed earlier, trust and prior organisational experience constitute elements of social capital that are conducive to the self-governance of forests resources.

Jack Ruitenbeek and Cynthia Cartier (2001) have suggested that "adaptive co-management" of forest resources may frequently emerge naturally. The defining attributes of adaptive co-management are: (1) shared rights and responsibilities for the stakeholders and (2) learning of the stakeholders through actions and modifications of these actions over time. Adaptive co-management is a long-term management structure where stakeholders share management responsibility within a specific system of natural resources and learn from their actions to adapt and modify the rules of their participation. The term "adaptive co-management" is referred to by other authors as adaptive management, joint-management, or community management. The lit-

erature reports cases where adaptive co-management of forest resources evolves without apparent external intervention (Ruitenbeek and Cartier 2001). Specific attributes of the forest resource and attributes of the users may be more conducive to the emergence of self-governance regimes, including perceived scarcity of the resource and prior organisational experience (Balland and Plateau 1996; Ostrom 1990, 1999). Thus, if adaptive co-management emerges naturally, rather than try to introduce a self-governance regime of forest resources forcefully, policy should take an education and enabling role to remove the barriers to emergence, including the preservation of social capital (Ruitenbeek and Cartier 2001).

There is little doubt that, in the aftermath of three decades of internecine and international conflicts, Cambodia's social capital has been dramatically depleted and undergone long-lasting transformation. Conflict started in 1970 with a military coup d'état backed by the United States, dragging Cambodia into the Vietnam War. April 1975 saw the victory of the Khmer Rouge and the establishment of Democratic Kampuchea, a regime which oversaw the genocide of a third of the Cambodian population—over two million people—in "cynical deception and stupefying violence" (Kiernan 1996). The Khmer Rouge turned Cambodia into a nationwide labour camp following the Maoist ideology of the "Great Leap Forward" (*Moha Laut Phloh*). Cities were emptied of their populations, and villages were broken up, their inhabitants uprooted and relocated across the country (Becker 1986; Bizot 2000; Chandler 1991, 1999, 2002; Kiernan 1993, 1996; Vickery 1986). The population was divided up between "old" people or rural peasants, and "new" people, those associated with the former political and economic elites, the intellectuals, or more often those who could read. Democratic Kampuchea wiped out traditional Cambodian culture, norms, religion, organisations, and networks. The Khmer Rouge were eventually overthrown by Vietnamese troops in 1979, but they waged a guerrilla war against the invaders in a coalition with the Royalist faction. In 1991, the international community brokered a peace agreement that lead to the re-establishment of a parliamentary monarchy in the Kingdom of Cambodia. Civil war erupted again in 1997, when the members of the coalition government, the royalist and people's parties clashed militarily. With the 1998 parliamentary elections, the people's party strengthened its hold on power, but was able to form a government only with a new coalition with the royalist party. Following parliamentary elections in July 2003, an eleven-month political standoff opposed the "alliance of democrats" to the people's party, neither side being able to rule without forming a coalition.

Nat Colletta and Michelle Cullen (2000) have argued that the direct impact on social capital of the Khmer Rouge's rule consisted of the fragmentation of communities and families, and the dissolution of primary bonds of kinship and secondary bridges of association. Neighbours and relatives were encouraged to spy on each other, thus "destroying trust and planting the seeds of deeply rooted fear." In addition, social capital between civil society and the state was shattered by state-sponsored persecution, victimisation, and killings. Thus, reconstruction efforts may be more fruitful if focused on re-building familial and associational relations, rather than on relations between government and communities.

Trust between community members and prior organisational experience contribute to a favourable environment for the self-governance of forest resources (Balland and Plateau 1996; Ostrom 1990, 1992). Communities with high levels of trust and reciprocity face lower costs of monitoring and sanctioning. These costs include fencing and patrolling forest areas, building monitoring structures, and sanctioning violators. Transaction costs may form a barrier to collaboration and to the establishment of appropriate tenure arrangements (Bromley 1991). If local people had already voluntarily and successfully worked together through local associations, they would have acquired organisational skills and experience of social interactions that facilitate the establishment of community forestry initiatives. Communities with little organisational and associative experience are more dependent on external support and intervention to agree upon institutional changes and to adopt new rules governing common pool resources. In turn, the imposition of unfamiliar sustainable forestry practices by external stakeholders, such as international organisations and governmental agencies, may not gather sufficient long-lasting local support.

The family and the pagoda have been at the centre of traditional Cambodian society, where networks are essentially based on kinship and religion (Ebihara 1971; Ebihara, Morland, and Ledgerwood 1994). Beyond family and neighbours, the pagoda, or *wat,* remains the central social institution at the village level, and may provide a supporting role for community forestry initiatives (Ngim and Nhanh 1998; Tin et al. 1999). Pagodas have participated in raising environmental awareness, distributed seedlings, and organised meetings between local people and state agencies. Beyond the village and the pagoda, there remain few bridges of trust between communities and the state. A study lead by Toshyasu Kato finds limited productive partnerships between the government and non-government sectors, in particular civil society (Toshiyasu et al. 2000). At the national level, the government lacks defined procedures for involving civil society in the decision-making process. Decision-making authority has generally not been devolved to local public officials who are closest to villages. In addition, there is still little accountability and transparency of governmental institutions to the general public. The Cambodian judiciary "does not yet meet acceptable standards in terms of independence, capability and integrity" (Toshiyasu et al. 2000). Some twenty-five years after the fall of Democratic Kampuchea, the Khmer Rouge remain unchallenged, undaunted, and remorseless. These factors have

resulted in a general mistrust of state agencies in the general public and little confidence in the rule of law. Efforts to bring Khmer Rouge leaders to international justice have faced opposition on fears of the political fallout for the present Cambodian regime and the former ideological and financial patron of the Khmer Rouge, namely, the People's Republic of China (Hunt 2003). It may well be that the surviving victims of the Khmer Rouge will never see justice, as several of their figurehead torturers have already died in old age (Becker 2003). Thus, the dissolution of social capital both within communities and between communities and government institutions constitutes a significant hurdle to the establishment of community forestry in Cambodia by external organisations, let alone its natural emergence in rural communities.

7. Community forestry for the poor

Community forestry initiatives in Cambodia all attempt to combine poverty reduction, alleviation, eradication, elimination, or termination with the rehabilitation of degraded forestland. The two largest community forestry programmes, in terms of area under management, exemplify these objectives. Concern Worldwide (2003) regards its national community forestry programme as an integral part of a partnership for development with poor communities. Local people are expected to benefit from forest resources "to meet essential livelihood needs, including food, transportation, tools, and fuel." The Food and Agriculture Organisation of the United Nations (FAO) similarly sees a double-dividend both in environmental conservation and development from its participatory natural resource management project's "*pioneering work* to assist communities to gain responsibility for protection and sustainable management of those resources upon which they depend" in the Tonle Sap region (FAO 2000). The FAO concludes that its project empowers communities to manage local forests to meet their needs for fuelwood and "other products." Thus, community forestry is expected to provide social and economic benefits for local people and to improve the state of degraded forest land.

There is a general agreement that community forestry generates benefits for local people in terms of non-timber forest products and environmental services, including protection from storms, fish habitat conservation, and watershed protection. However, the extent of these benefits is undetermined, as few studies have attempted monetary valuation of the benefit streams of common property regimes (Bann 1997a, 1997b; De Lopez 2001b, 2003). There is evidence that community fisheries have provided substantial economic benefits to the Cambodian poor, but the case for community forestry initiatives, particularly in regard to timber, is inconclusive. Community forestry has been introduced relatively recently in Cambodia, with the earliest programmes only a decade old. Most may not yield timber benefits from reforestation for at least another decade. The inventory of community forestry activities carried out by the Cambodian Development Research Institute roughly estimates the stock of timber, non-timber forest products, and fuelwood available for household consumption and for selling (Mckinney and Prom 2002). Out of a grand total of 237, some 32 community forests have enough timber for household consumption and for selling, while an additional 37 have timber for just household consumption. The remainder of community forests do not have any timber for harvesting. In contrast, most community forests have enough fuelwood and non-timber forest products for both household consumption and for selling.

Given the absence of secured common property rights for local people, timber revenues remain hypothetical. Then the question arises as to whether current community forestry programmes in Cambodia may alleviate poverty by providing people with benefits from non-timber forest products. Michael Arnold (2001) as well as Arild Angelsen and Sven Munder (2003) contend that non-timber forest products have generally been the lot of the poor, while it is the rich who have captured the benefits of tropical timber. Non-timber forest products constitute an essential safety net for rural people; that is, they are used for household subsistence rather than commercialisation, and they provide a buffer in times of shortfall and crises. Non-timber forest products "can make the difference between food security and starvation" (Angelsen and Munder 2003). Gathering most non-timber forest products is labour intensive and requires little capital and skill, which makes them more accessible to the rural poor. Yet, non-timber forest products are economically inferior goods that cannot generally compete with domesticated or factory-made substitutes. Non-timber forest products may only provide low returns and have limited potential for improving rural livelihoods (Campbell et al. 2002). In cases where a non-timber forest resource sustains increased market demand, making it increasingly attractive, external stakeholders may dispossess local people to appropriate the resource.

The literature further suggests that rural households adopt one of four possible strategies for taking advantage of commercial non-timber forest products (Belcher, Ruiz-Perez, and Achdiawan 2003): coping, integrated, supplementary, or specialised strategies. Specialised, supplementary, and integrated strategies require high market integration of local communities. In the coping strategy, forest products play a greater subsistence role and are less likely to be commercialised. As discussed earlier, the Cambodian village remains socially isolated, which leaves little prospect for successful market integration without external intervention. Access to urban consumers requires capital and marketing skills that local communities do not possess. Thus, the contribution of community forestry to poverty alleviation in Cambodia needs to be carefully qualified, as this may create unachievable expectations for local people. As a safety net, the role of non-timber forest products is undeniable. Local people are able to derive immediate benefits from

gathering firewood, fruits, fodder, and medicinal plants. This has been shown to be the case in Cambodia in the context of undisturbed forests and protected areas (Bann 1997a, 1997b; De Lopez 2001b, 2003). However, for the majority of existing community forestry initiatives, non-timber forest product collection will be limited by the extent of forest resources available and by population pressure. Timber remains the most promising alternative. Without transfer of timber-rich areas to common property regimes, community forestry will not contribute to poverty alleviation in Cambodia.

8. Conclusion

Community forestry is in its early stages in Cambodia and limited in scale and scope, when compared to the extent of forest resources available and to the dependence of the Cambodian population on these resources. Over the past decade, the state management of forests and the timber concession system have lead to widespread deforestation with few benefits for rural people. Donor and government efforts have focussed on reforming the forest concession system, leaving inadequate resources for the development of community forestry. Local people have been allocated marginal land areas with severely degraded forests to manage. Ecosystems with low productivity cannot cope with local needs and added population pressure. As common resource management regimes have attracted little policy-making attention, the property rights of local communities over forest resources remain unsecured. In addition, the depletion of social capital in Cambodian society, as a result of some thirty years of conflicts, is likely to be less conducive to the emergence of community forestry.

Despite these unfavourable conditions for self-governance of forests, in many parts of Cambodia, local communities have voluntarily contributed resources and time to forest rehabilitation. People have planted trees together, on all but barren land, thus creating new partnership ties and rebuilding social capital. Because of these unfavourable conditions, there is also a strong argument for allocating more financial and technical resources to ensure the successful growth of community forestry in Cambodia. There are many opportunities for granting local communities ownership or usufruct rights over Cambodia's remaining forests. Less experimentation and more commitment is required if self-governance of the Kingdom's forests is to make a meaningful contribution to biodiversity conservation and poverty alleviation.

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How Participatory Is Thailand's Forestry Policy?

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Abstract

The British influence on the teak trade since the early 1830s forced the Thai government (Bangkok) to increase its direct interference in the affairs of the northern tributary states (Lan Na) because of a threat to annex the states that stemmed from problems in the timber business. As a result, the influence of the northern princes in political economic power was almost entirely destroyed; thus the princes intensified their efforts to gain income from agricultural taxes and fees, thus creating pressure on the availability of arable land for Thai farmers, who were forced to find other places with cheaper taxes. The establishment of the Royal Forestry Department in 1896, led by Englishmen up to 1932, planted a long-lasting influence on the future of Thailand's forestry policy, which was since then set as "cutting and processing timber for export to Europe."

The 1932 revolution that phased out foreign control over forest resources was only a metamorphosis to a kind of similar mode of resource expropriation by Thai citizens. This did not mean the influence of foreigner foresters was waning. In 1948 a group of experts from the FAO provided a solution to the perceived problems of "forest encroachment and poaching by shifting cultivators." (This added weight to the vulnerability of the tribe communities that had been created since the beginning of "nation-building," which posed the "us against them" polarity among the Thai.)

The Cold War during the mid-twentieth century brought the U.S. government to influence Thailand's forestry policy with an imposition of an idealized model of development with "dams and national parks." This thinking about wilderness, mixed with the phobia against "communists," found its implementation through proclamation of national parks, expansion of reforestation areas, farmer relocation projects, road building, forest clearing (in communist strongholds), forest business establishment, etc. The term *hill tribes* that appeared in the late 1950s created a "victim" for the newly-found model of development. Very soon the hill tribes were identified with the negative stereotype of forest destroyers, opium cultivators, and dangerous alien troublemakers.

The term *community forestry* was used as a façade of General Prem Tinsulanonda for industrial tree plantation (mainly eucalyptus) in the northeast. The farmers, who were very much disturbed by this interpretation of community forestry, resisted in an organised way in the form of farmer organisations from February to September 1985 by demonstrating in front of the district or provincial administration offices. In 1988, triggered by an accident when the wife of an MP encroached on communally-used forest to start "reforestation" and an ensuing national NGO meeting to react to the incident, the RFD was forced to concede the community's rights to manage the forest for the first time—thus the pro-farmer "community forestry" appeared. Severe floods and landslides that wiped out houses and killed 300 people led to the national logging ban in 1989.

The first phase of the struggle for community forestry started when the RFD conceded the community rights over forests and when it proposed a draft of the Community Forestry Bill for the first time in 1990. The second phase began when the Internal Security Operations Command (ISOC) launched an ambitious plan to relocate 250,000 households of northeast farmers from a 45,680-square-kilometer national forest reserve to a "community forestry" area. The farmers resisted this plan when they found out the "community forestry" area was barely arable land. In May 1992, half a million people took to the streets against the Suchinda regime to cancel the plan. (In connection with the general elections in September 1992, the main political parties put forward their versions of a community forest bill for political reasons.) The third phase buried the bill under the ground after the newly-elected government of Chuan Leekpai passed the Thai Forestry Sector Master Plan, which was based on the private plantation system and thus diverted the community forest bill into another direction, away from being a pro-farmer bill.

The Chuan government's attempts to increase the national parks and wildlife sanctuaries shifted the resettlement plans to the north, where ethnic groups were politically vulnerable to eviction. Nevertheless, the attempts led to the formation of the Northern Farmers Network in 1995, which was composed of both Thai farmers and ethnic groups.

The pressure from farmers through The Forum of the Poor (established in 1995 as an umbrella group

of 180 people's organisations and NGOs) in March 1996 onward forced the newly-formed Banharn government to produce a draft called the "Suanbua Draft Version." When the winning government of Chavalit replaced the Banharn government, the draft was scrapped again, provoking another demonstration by the Forum of the Poor in 1997. The Chavalit government proposed the "Wang Nam Khiaw" cabinet resolution to allow co-existence of people and forests, and organised a series of public hearing in May 1997 to discuss different positions on the bill. The victorious, second Chuan Leekpai government revoked the "Wang Nam Khiaw" cabinet resolution from the Chavalit government and re-launched the program of evicting villagers living in "sensitive areas," which was warmly welcomed by the RFD, the "dark-green" conservationist groups, and the NGOs established to support the Thai farmers against "hill tribe" groups.

1. Introduction

Most researchers with a neo-Malthusian perspective would likely perceive the destruction of Thailand's forests and all attempts to curb it as related with population pressure, when in fact these are related to the long history of colonial expansion in the region (Shalardchai Ramitanondh 1989, cited in Belo et al. 1998, 177). This paper thus retraces how colonial expansion has taken place and how it has shaped contemporary forest policy in Thailand.

This paper should be read with a precaution that participatory development, a dilemmatic and arbitrary concept, will not necessarily lead automatically to sustainable development, an inherently contradictory term in itself. Why? If it is invoked merely as a means of affording participants access to the wider resources of society, then participatory development means a loss of local control over resources for production (Hirsch 1990, 224). Sustainable development itself is contradictory, as the unclear distinction between the objectives of development (a process of directed changes) and the means to achieve these objectives would easily lead to "sustainable development" frequently being interpreted as simply a process of change that can be continued forever (Lele 1991, 609). This is contradictory to the World Commission on Environment and Development's own recognition that "ultimate limits [usable resources] exist" (WCED, 45).

As the main aim of this paper is to show the level of adoption of participatory development in Thailand's national forestry policy, the tempting first task to tackle is to find the means of measurement. There are at least two sources to determine this: (1) the discourse of the debate around the meaning of participation among academics and (2) the empirical research on participatory development. The early post-war discourse on development had seen the participatory roles of the masses in development as producers by provision of cheap labor and, through the "trickle down" effect, as consumers of the enlarged national products (Stiefel and Wolfe 1984, cited by Hirsch 1990, 184). The search for a more active way of involving the rural poor in development led to their increasing role not only as passive recipients but also as formulators, planners, implementers, and beneficiaries of various programs. This led to an approach by the United Nation Research Institute for Sustainable Development (UNRISD) (1978, 2) to see participation as "active and meaningful involvement of the masses of people at different level[s]: (a) in the decision-making process and (b) in the execution of resulting programs and projects." Eventually, the director of the Community Development Department (Phairat 1984, 6, cited in Hirsch 1990, 190) defines participation as something sponsored by outsiders, and its aim is to encourage local involvement (through formal government institutions or non-formal ones) in achieving objectives that are stipulated elsewhere. This approach was criticized by Saneh Jamrik (1984), who insisted that participation is developing and using local people's full potential, starting with what is already there. In this discourse of the meaning of participation, we can see a continuum starting from the masses as "passive recipients" to "actors in their full potential." Similarly, Bass et al. (1995) and Grant (1996) (cited by Martin 1997, 104) filled this continuum with seven categories of participation, starting from "manipulative participation" (a pretence, with so-called unelected and powerless people's representatives on official boards) to "self-mobilization" (independent initiatives from the people).

A newly proposed branch of science called ethnoecology adds weight to the discourse on the meaning of popular participation. This new science, sometimes also called "indigenous knowledge," increasingly acknowledges that other people (communities) have their own effective "science" and resource use practices, and that we need to understand their knowledge and management systems to assist them (to develop) (Sillitoe 1998, 223).

Facing a danger of oversimplification in doing otherwise, this paper does not propose any yardstick to measure the level of participation in the form of a continuum of any kind. The attempt to create a yardstick is highly theoretically problematic given the complexities of development theory and practice. The best measure of participation this paper can show is the comparison of the discourse on participation suggested by some related actors among development agencies, local bureaucracy, academics, non-governmental organisations (NGOs), and the local farmers themselves. In other words, the unfolded history of forest management practice is sufficient enough to show the "level" of participation of farmers, or those who stand at the bottom of the societal hierarchy, in a process inaugurated so far as development.

This paper is divided into six parts: introduction, history of Thailand's forestry policy, history of "hill tribes"

(marginalization) in the development discourse, history of the Community Forest Bill, summary and conclusion, and recommendations.

2. History of Thailand's forestry policy

Thailand's forests were dragged into the global market by the power relations that took shape following the introduction of monetary transaction (Madras rupee, in silver) into Lan Na (northern Thailand) by the British colonial administrators in the early 1830s in Burma, by which the latter forced the princes (local lords) to free cattle trade (Blundell 1836, cited by Anan 1984, 49). Eventually, as trade expanded, the teak trade brought in most of the currency during the second half of the nineteenth century. Labor for teak export was recruited mostly from outside of the system, favoring in particular the Khamu from Laos. During the year 1858/59 the export of teak from the port of Moulmein was worth 400,000 pounds sterling; almost 95 percent of the timber sold came from the Chiang Mai area (Ramsay 1971, 60, cited in Anan 1984, 50).

After the British timber interests, represented by the Bombay-Burma Corporation and the Borneo Company, had expanded operations into Lan Na in the 1880s (Ramsay 1971, 125, cited in Anan 1984, 51), they were followed by one French and one Danish company. The control of the princes (local lords) in Lan Na eroded when in 1873 they were charged for "double-leasing" by the Burmese timber contractors and forced to pay damages of as much as 466,015 rupees to the latter (Ramsay 1971, 63). King Chulalongkorn interfered to pay the damages, and this was the beginning of the integration of Lan Na into the state. The Thai government abandoned its long-time policy of limited interference in the affairs of the northern tributary states, mainly in response to the British threat to annex Lan Na because of the disturbing problems in the timber business. In 1874 the Thai government signed a treaty with the British by which it agreed to supervise the police and judicial administration for the protection of British colonial interests in Lan Na. A commissioner and seventy other Siamese officials were sent for the first time to be permanently stationed in the north (Anan, 1984, 53).

Under renewed British pressure a second treaty was signed in 1883, which provided for the setting up of the British Vice Consulate in Chiang Mai and for greater Thai government control over the northern states (Anan 1984, 54). The influence of the northern princes in political and economic power was almost entirely dissolved when, in 1896, the Thai government established the Royal Forestry Department (RFD) to assume more control over forest leasing. Therefore it was not surprising that the center of the early forest management philosophy of the RFD was the cutting and processing of wood for export to Europe (Belo et al. 1998, 177). The administrative head of the agency was always an Englishman, from its founding in 1896 until 1932. Most of the logging concessions went to foreigners as well. In 1927, for instance, out of 32 forests under concession, 17 were operated by British citizens, six by French, and one by Danes (Belo et al. 1998, 177).

The local princes, deprived of most of their sources of income and taxes, responded in many ways, including launching open resistance and looking for other sources of income. Primarily they turned to the appropriation of the ricelands of the peasants and of unclaimed land, turning them into *na chao*, their private property. This hidden complexity of struggles among the local actors, forest concessionaires, local princes, and land-deprived peasants, among others, had led many researchers to conclude, superficially, that the movement of lowlanders to the forest was caused to some extent by population pressure.

The control by foreigners over the forest resources was phased out in 1932 following the 1932 revolution, which disempowered the monarchy. The new concessionaires, the Thai citizens, continued to serve as the spearhead of deforestation. Colonial forestry practice has continued its influence, however, despite the withdrawal of western timber companies in the mid-twentieth century; in Thailand, colonial power remained in the form of advisory functions (Pinkaew Laungaramsri 2000, 74). In 1948 the first group of forest experts from the Food and Agriculture Organization of the United Nations (FAO), led by G. N. Danhof, a Dutch forester, came to Thailand to provide advice and assistance on natural resource management. The forest experts pointed to the lack of knowledge, technology, manpower, and financial support as the major problems in Thailand. The problem of forest encroachment and poaching was caused by shifting cultivators (Royal Forestry Department 1971, 86, cited in Pinkaew Laungaramsri 2001, 75). The FAO recommended the preservation of 40 percent of the total land area of the country as forest cover and to use aerial maps for forest management in a national park system.

During the reign of Field Marshall Sarit Thanarat (1959–1963), national parks, as well as the monarchy and the Thai language began to be seen as ideal national symbols. Sarit's slogan about the forest stated this clearly: "Forests are significant natural resources for the lives of Thai people and the existence of Thailand. Those who destroy the forests are the enemy who destroy the nation's security" (Ministry of Agriculture and Cooperatives 1980, cited in Atthachak Sattayarat 1999, cited in Pinkaew Laungaramsri, 2001, 75). The idealized model for the management of forest and its development came from developed countries, especially the United States. During the mid-twentieth century, as an attempt to halt the so-called influence of communist Indochina, the U.S. government provided assistance on national park establishment and funded a Thai government officials' trip to Yellowstone, America's first national park. In 1955, the U.S. government, under the U.S.-Thai Cooperation Program, sponsored two groups of Thai bureaucrats, forestry academics and engineers, and policy-makers, to visit the Tennessee Valley Authority to learn about American

technology for developing water resources using hydroelectric dams. Since then, the U.S. model of dams and national parks has become an ambitious ideal of modern development for the Thai states (Pinkaew Laungaramsri 2001, 76). This is consistent with Guha's observation (1997, 19, cited by Pinkaew Laungaramsri 2001, 80) about the practice of national park management in Third World countries following U.S. thinking on wilderness, which is "the monumentalist belief that wilderness has to be 'big', continuous wilderness, and the claim that all human intervention is bad for the retention of diversity."

This unbalanced struggle for power and control over resources was realized at the cost of the farmers, lowlanders, and highlanders (tribes). One of the results of this struggle, in terms of size of landholdings, is shown for the year 1978 in table 1.

Table 1. Distribution of land by size of holding, Thailand, 1978

Gini coefficient	**Whole Kingdom 0.45**		**Center 0.47**		**Northeast 0.40**		**North 0.49**		**South 0.44**	
Size of holding (rai) (1 ha=6.25 rai)	% of holders	% of land	% of holders	% of land	% of holders	% of land	% of holders	% of land	% of holders	% of land
<2	1.6	.02	3.0	.03	1.0	.01	2.8	.03	0.8	.01
2-6	14.3	2.3	12.8	1.7	9.2	1.4	22.5	4.1	16.8	3.2
6-15	27.4	11.4	21.6	7.5	26.3	10.6	30.5	14.3	33.4	16.4
15-30	29.0	25.7	27.2	20.3	33.4	28.4	22.6	23.3	29.7	31.0
30-50	17.3	27.1	19.8	25.9	19.8	29.6	13.5	24.6	13.3	24.6
50-100	9.0	24.3	12.8	29.0	9.1	23.4	7.8	24.9	5.3	16.9
>100	1.4	9.3	2.7	15.5	1.2	6.5	1.3	8.7	0.8	7.8

Source: NSO Statistical Report of Thailand, 1981–1984.

Note: Figures omit households without any land at all.[1]

Subsequently, the landless lowland farmers were forced to migrate to the forests to get involved in a structure of illegal logging dominated by influential locals and to produce the highly demanded cash crops during the 1970s and 1980s (maize, tobacco, ginger, and sesame). Maize, during its golden age in the 1970s, thus emerged as one of the forces behind the destruction of 4.5 million rai (1 rai = 40 m x 40 m = 1,600 m²) of forest cover in the mid-1970s (Lohmann 1993, cited in Belo et al. 1998, 179). In the 1980s, non-paddy cash crop cultivation in the north went up by over 8,200 square kilometers (km^2), compared to a mere rise of 1,644 km^2 for paddy cultivation. The estimated three million lowlanders affected the half-million or so minority peoples to whom the highlands were traditional, ancestral, communal, or open-access land (Lohmann 1993, 209, cited in Belo et al. 1998, 179).

The government policy focus on deriving economic gains from the forest brought forth a new episode in the highly complex conflicts over forest resources. Having designated some forest areas as "conservation areas," the government started to relocate the hill tribes away from their communal lands. Together with ending logging concessions, expanding reforestation areas and national parks, and encouraging business interests in forest resources, building roads, and eradicating opium farms, this policy has brought great benefits for the business interests of the lowlanders at the expense of the poor (Anan 1996, in Hirsch 1996, 202). While the highlanders, including women, are forced to look for work in towns with low health standards, lowlanders are increasingly looking for upland areas to develop as orchards and resort areas (Kunstadter and Kunstadter 1983, cited in Anan 1996 and Hirsch 1996, 205). In 1990, for example, 158 out of 220 tribal prostitutes tested were found to be HIV positive (*The Nation*, September 21, 1990, and *Bangkok Post*, October 1, 1990). Adding to the highlander's propitious position, the government issued land-use rights (STK, or *sor tor kor*) certificates to individual occupants of national forest reserve lands in certain areas, but it did not stop them from selling their rights and clearing more forestland (Anan and Mingsan 1992, cited by Anan in Hirsch 1996, 206).

Also arising is the conflict among the different hill tribes over forest resources and their struggle to gain access to more and more limited forest resources. Violent cases of land dispute between the Karen, Hmong, and Lisu in the Mae Khan basin (Anan 2000, 173) have become a continuous source of hostility between the

[1] Inequality of land ownership in Thailand is still lower than in many other Asian countries if measured by the Gini coefficient of 0.45 (the Gini coefficient is a measure of income inequality developed by the Italian statistician Corrado Gini). While South Korea and Taiwan show the lowest degree of concentration (coefficient of 0.32 in 1973 for South Korea), India, Pakistan, Malaysia, and the Philippines all show a higher land concentration, with figures of 0.63, 0.60, 0.54, and 0.51, respectively (Douglass 1983, 196, cited by Hirsch 1990, 26).

three groups. The Hmong and the Lisu, facing stiffer competition from the Thai lowlanders, find no other choices but to clear the Karen reserve and fallow land.

Table 2. Thailand forest statistics, 1961–1999

Year	Remaining forest (rai)	Remaining forest (percent)
1961	171,017,812	53.33
1973	138,578,125	43.21
1975	128,278,755	40.00
1976	124,010,625	38.67
1978	109,515,000	34.15
1982	97,875,000	30.52
1985	94,291,349	29.40
1988	89,877,182	28.03
1989	89,635,625	27.95
1991	85,436,284	26.64
1993	83,470,967	26.03
1995	82,178,161	25.62
1998	81,076,428	25.28
1999	80,242,572.5	25.02
	(=12,838,811.6 ha)	

Source: Sureeratna Lakanavichian 2001, 7, cited from Charuppat 1998.

Note: One ha is equal to 6.25 rai (Thai measurement).

England (2000, 53–71, in Hirsch 1996) clearly picks out three areas of Thai forest policy that need special attention in relation to the frustration of forest conservation attempts: the logging ban, the "new partnership" between government and NGOs, and the reforestation program. Despite the impressive official figures about the 83.59 percent drop of the rate of forest encroachment after the logging ban, or the 1.9 million cubic meters (m) of Thai timber saved by the ban, there is proof that illegal logging in Thailand still persists in more surreptitious forms (Pinkaew Laungaramsri and Rajesh 1992, 39–41). The increased volume of logging traffic from the border areas (Cambodia, Laos) allows timber, illegally cut, on the Thai side to be mixed with foreign timber. Furthermore, state development projects open up chances for logging licenses over vast areas (Pinkaew Laungaramsri and Rajesh 1992, 43). These factors impair the efficacy of the logging ban.

The new partnership with NGOs, as promoted in Thailand's Seventh National Economic and Social Development Plan (1991–1996), allows NGO representatives (from grassroots to wider definitions of NGOs) into discussions on forest policy. World Wildlife Fund (Thailand), as an NGO example, sponsored projects in communities bordering the Khao Yai National Park to curb encroachment into the park by giving credits, education, and business ventures to villagers who conform to the park regulations. No matter how successful the projects are perceived, however, their replication in other areas demands heavy resources, which are difficult to obtain.

Various attempts to reserve and protect the remaining forest in Thailand since the 1960s, ranging from an active reservation program to reclaiming forestland, have produced nothing but the reduction of actual forest cover to between 22 and 29 percent (England 2000, 65, in Hirsch 1990) and outbreaks of violence, as many farmers have nowhere else to go. During the time leading up to the United Nations Conference on Environment and Development (UNCED) (1989–1992), the army was actively engaged in implementing plans to move 1.25 million people to free up their farmland for reforestation (Handley 1991, 15, cited in England 2000, 66), in spite of protests from environmentalists, farmers, and even the King, who opposed the eucalyptus plantations on environmental grounds (Apichai Puntasen et al. 1993, 201, cited in England 2000, 66). The underlying reason for the lack of progress on forest policy at the national level is the failure to resolve the conflicting interests that lie at the very heart of forest issues (England 2000, 68). In Thailand the conflict lies between two rival forms of ex-

ploitation: plantation forestry and smallholder cash-crop agriculture. The failure of sustainable exploitation policies throughout the world makes even clearer the need to address the basic conflict between conservation and exploitation that lies at the heart of forest policy.

The RFD, after it has largely failed to protect the forests and has inevitably compromised the 12 million ethnic Thai living in the forest areas, is trying to secure its interests by pushing ahead with its strategy of exclusion towards the ethnic minority groups of the uplands (Buergin 2000, 11). To support this strategy, high government officials as well as "dark green" conservation NGOs (anti-people) increasingly refer to nationalistic and even racist sentiments (see also Buergin et al. 1999; Pinkaew Laungaramsri 1999; Pinkaew Laungaramsri and Rajesh 1996). The following is the historical background of the relationship between the minority ethnic groups and Thai society.

3. History of the "hill tribes" (marginalization) in the development discourse

Anan (2000, 35–52) divides the history of settlements and land clearings of a sample village (141 households) located in Mae Ping National Park of Li District in Lamphun Province (south of Chiang Mai Province) into four periods: early forest communities (1887–1942), influential latent power (1942–1964), illegal logging (1965–1974), and competition for resources (1974–present). During the early forest communities period, indigenous people occupied the small plain areas in valleys of the upper north, and people from the plains who moved to the nearby areas sought agricultural lands or logging concessions. The indigenous villagers collected forest products and exchanged them for commodities brought into the village by cattle traders or by boat. During this period, highland ethnic groups such as Hmong, Mien, Lahu, Lisu, and Akha began to migrate from southern China, Burma, and Laos and settled down in the north of Chiang Rai, Chiang Mai, and Nan (Anan 2000, 36–37, citing Geddes 1976 and Dessiant 1971).

The second period (1942–1964) was signified by migration and resettlement from the lowland areas to the marginal upland areas. The reasons for this were the ease with which villagers could fell the remaining trees left by logging companies, the expansion of cash crops (tobacco, groundnut, sugarcane) that needed small amounts of water, malaria eradication because of DDT, and an official (and misleadingly confusing) establishment of a land tax system for forest areas. The new groups of ethnic people started to settle down for lack of available agricultural lands.

The third period (1965–1974) was started when the National Forest Reserve Act of 1964 declared permissions for logging concessions in the national forest reserves and demarcated other areas to be "reserved." The confused villagers, noticing the abuse of timber licenses among the logging companies and that reserving forest meant reserving trees only, joined the rampage in illegal logging, which was more profitable than cash crops and rice farming. More migrants came in to join in the clearing of the forests.

The fourth period, competition for resources (1974–present), was marked by the expansion of cash crop cultivation, especially maize for cattle. The area for maize cultivation went up from 127,790 rai in 1970 to 2,928,461 rai in 1975, and to 3,926,242 rai in 1980. Government policies, such as job creation programs in forest areas, credit for agriculture policy, and a temporary land-use certificate policy (STK, or sor tor kor) supported the golden age of maize. The Isan people from the northeast joined in the competition for resources, moving in and out of the forests for new agricultural lands.

Looking at this example timeline of a "lowland" village related with migrating ethnic groups, business interests, and government policies, it is surprising to find out that the ethnic groups came under the classification of "forest destroyers" and "hill tribes." Pinkaew Laungaramsri (2001, 32) argues that the discourse about hill tribes was just recently invented and reflects the changing relations between the Thai state and the peripheral population.

The history of the Karen, one of the most "popular" hill tribes, started when the Karen entered into a tributary relationship with the Tai (Thai) lords in return for protection (Pinkaew Laungaramsri 2001, 50). In the 1880s, Hallet (1890, 40–41, cited in Pinkaew Laungaramsri 2001, 50) noted that most of the elephants working in the teak forests were owned by the Karens, who hired them out to foresters at the rate of 50 to 70 rupees per month. Prior to state intervention in the periphery and the exacerbation of ethnic prejudice by nature conservationists, the notion of ethnic identification had never been politicized. Any differences between highlanders and lowlanders were taken simply as instances of cultural disjuncture by lowland communities (Pinkaew Laungaramsri 2001, 52).

Later, one of the prevalent characteristics of state as well as public discourses about "hill tribes" in the late twentieth century is the binary opposition between "malign-aggressive" and "benign-submissive" figures. Fortifying ideas of the different kind of "strangeness" among different groups of "hill tribe," the standard of labeling worked to relate "Hmong" (one of the tribes) with aggressiveness and "Karen" as submissive, peaceful, backward, and pathetic. Pinkaew Laungaramsri (2001, 54) argues that the representation and stereotyping of Karen/Hmong as benign/malign hill tribes by government agencies and the Thai media has racial functions. One of the typical urban-based, middle-class, conservationist group's opinions toward the hill tribe is: "But the Karen community is currently turning to the same farming techniques as the Hmong, so I don't believe that they can live in harmony with the forest" (*The Nation*, May 9, 1997, cited by Pinkaew Laungaramsri 2001, 55). The secretary of the Green World Foundation, another nature

conservation organisation, even goes further to comment that, "But the hard truth is that [Karen] agroforestry can never replace the true functions of natural forest, no matter how good it is done. Even the most diverse [of] Karen's community forest—the likes of which is extremely rare—can only represent just a tiny fraction of natural biodiversity…resettlement is necessary." (*The Nation*, May 22, 1995, cited by Pinkaew Laungaramsri 2001, 57).

The term *hill tribes* came into use in the late 1950s as a generic name for the various non-Thai groups living in the uplands of northern and western Thailand. In 1959, the "Central Hill Tribe Committee" (CHTC) was established in Thailand, and for the first time, a national policy towards the "hill tribes" was formulated. Objectives of the policy were "national security," reflecting fears that communist influences may spread among the ethnic groups of the uplands, control and substitution of opium cultivation, as well as the abolition of shifting cultivation, which in the international development community had been perceived as destructive, a threat to forest resources, and a hindrance to development. Very soon the term *hill tribes* was identified with the negative stereotype of forest destroying, opium cultivating, and dangerous alien troublemakers (Buergin 2000, 6–7). Tables 2 and 3 show the ethnic groups in Thailand.

Table 3. Ethnic groups in Thailand (not including refugees)

	1960 (Kunstadter 1967)	1980	1986	1996 (Kraas/Rivet 1997)
"Thai"	14,171,600	23,577,000*	27,696,000*	33,296,000*
Lao-Thai	9,000,000	12,058,000*	14,164,000*	17,028,000*
Thai-Malay	1,025,000	1,660,000*	1,950,000*	2,340,000*
Chinese	2,600,000	5,380,000*	6,320,000*	7,600,000*
Mon	60,000	—	~ 100,000**	—
Khmer	—	1,210,000*	1,420,000*	1,900,000
Hill tribes	~ 222,000	~ 385,000	~ 460,000	~ 793,000
Total population	26,258,000	44,824,000^	52,654,000^	63,300,000

Sources: Buergin 2000, 7, and other sources as follows: Kunstadter 1967; Husa and Wohlschlägl 1985; Santhat 1989; Kampe 1997. * Kraas and Rivet 1997; ^ from Donner 1989; ** from Keyes 1987.

Table 4. Ethnic "hill tribe" groups in Thailand (not including refugees)

	1960 (Young 1961; Kunstadter 1967)	1974/77 (TRC) (Husa/Wohlschlägl 1985)	1985 (Tribal Research Centre) (Donner 1989)	1996 (Kampe 1997)
H'tin	18,900	19,400	24,276	32,755
Lawa	11,000	11,300	13,282	15,711
Khamu	7,600	6,300	5,355	10,153
Mlabri	140		139*	173
Karen	71,400	184,648	235,622	402,095
Hmong	45,800	37,301	63,418	126,147
Yao	10,200	22,652	32,706	47,305
Akha	25,000	13,566	23,430	48,468
Lahu	15,050	22,584	38,558	78,842
Lisu	17,300	12,542	20,449	31,536
Total	222,390	331,305	457,096	793,185

Source: Buergin 2000, 5; *from *Thai Development News* 1993, #23, 18.

4. The history of the Community Forest Bill

The history of community forest as an indigenous institution can be first traced back to the reign of King Mangrai's *Mangraiyasart* (700-year-old document) or law that prescribed a system of punishment and fines for violators of sacred forests, called *pa seu ban seu muang* (Prasert 1971, cited in Yadfon Association, "Community Forestry in Thailand: Legislation and Policy"[2]). Apart from this written document, oral histories and field investigations reveal different types of communal forest management, including varieties of sacred forests, watershed forests, and village woodlots (Shalardchai, Anan, and Santita 1993; Anan and Mingsarn 1992).

The second root of Thai community forestry was introduced by the United Nations Food and Agriculture Organization (FAO) to Kasetsart University as a social forestry curriculum in 1984, and then was promoted by the state in the 1985 Thailand National Forestry Policy. This policy designates 15 percent of the country's area as protected forest and 25 percent as economic forest. It also encourages private reforestation on public land, plantation on marginal agricultural land, and woodlots for household consumption. For simplification purposes, the historical division by Brenner et al. (1999, 15) will be used to explain the discourse on the Community Forest Bill. Brenner et al. (1999, 15) divide the history of the Community Forest Bill into four phases: emergent phase (1985–1991), the hot phase (1991–1992), the submergent phase (1993–1996), and the Bill agenda (1996 until today).

Eventually, during the reign of General Prem Tinnasulanond, the term *community forestry* appeared in the cabinet resolution of 1985 (see the Royal Forest Department's Web page). In Article 12, the resolution stated "community forestry such as reforestation on public land by private sector, tree planting on marginal agricultural land and establishment of forest woodlot for household consumption shall also be promoted." This led to a sharp rise in the number and area of industrial tree plantations (mainly eucalyptus) in the northeast. The equation of community forestry with private plantation in "degraded forest" (actually agricultural lands) provoked a wave of resistance by farmers, who demanded a different kind of "community forestry." During February, May, June, and September 1985, the villagers staged demonstrations in front of the district or provincial administration offices. Uniting themselves into the "Farmer Committee for Forest Conservation" and the "Isan Community Forest Committee," and later "The Committee to Solve Land and Forest Problems in the Northeast," the farmers established in the same year a national network of NGOs, called NGO-Cord.

In 1988 the NGO movement won a major battle when the plan to build the Nam Choan Dam was shelved under the premiership of Chatchai Choonhavan. Severe criticism against the state logging policy, after severe floods and landslides that wiped out houses and killed 300 people, led to the national logging ban in 1989. Afterwards, a national meeting of NGOs called on the government to issue a community forestry bill after a Member of Parliament's (MP) wife encroached on communally-used forest to start "reforestation"; the RFD was forced to concede the community's right to manage the forest for the first time.

In this first phase, the state advanced a forestry policy that advocated private economic plantations and conservation areas at the expense of communities living in the national forest reserves. This attempt failed because of local and regional resistance, which built into massive public criticism of the state policy. In 1990, the pressure led to a draft of a community forest bill being proposed by the RFD for the first time.

The next phase, the hot phase, was marked by another proposed program, which became a decisive power struggle over forest resources. In June 1990, the Internal Security Operations Command (ISOC), approved by the prime minister, submitted a plan called the "Land Distribution Programme for the Poor Living in Degraded National Forest Reserves in the Northeast Thailand" (*Khor Jor Kor* plan) to cabinet. The Khor Jor Kor plan aimed to rearrange the land-use patterns in 45,680 km^2 (28 m rai) of national forest reserves in the northeast (Brenner et al. 1999, 17). Around 250,000 households (lowlanders) were to be resettled onto 7,800 km^2 (4,875 m rai), at around 2.4 ha per family, plus extra land for infrastructure and community forests. There would be an area as large as 14,400 km^2 (9 million rai) on which economic forests (fast-growing species) were to be established. The "successful" trial in Isan (northeast) led to implementation elsewhere. The private plantations were re-legalized by the then governing National Peace-Keeping Council (NPKC), without any sign of interest in a community forest bill.

Then the military moved villagers forcibly to the military-controlled settlements, which created another round of resistance by the soon-to-be relocated farmers. In May 1992, around 500,000 people took to the streets in Bangkok to demonstrate against the Suchinda regime, forcing the dictatorship to cancel the Khor Jor Kor plan. Later, the northeast-wide Isan farmer's march to Pak Chong (location of the forced relocation) cancelled the whole plan in June 23, 1992. In September 1992, in connection with the general elections, the community forestry issue was taken up by the main political parties (the Democrats, the National Aspiration Party, and Phalang Dharma), which put forward their own versions of a community forest bill for political reasons. Meanwhile, the interim government (Anand Panyarachun) again banned private plantations larger than 8 ha (50 rai).

The third phase, the submergent phase, buried the community forest bill under the ground. When the new government, under Chuan Leekpai, took office in late

[2] http://www.forestsandcommunities.org/Country_Profiles/Thailand.html.

1992, it passed the Thai Forestry Sector Master Plan, which was drawn up in connection with the World Bank's Tropical Forestry Action Plan, that planned to designate some 46,400 km^2 (29 million rai) of forest areas under community management. In January 1993, Chuan Leekpai announced the re-allowance of private plantations through the Deputy Minister for Agriculture and Cooperatives, Mr. Suthep Thueksuban. Representatives of the pulp and paper industries in Kanchanaburi demanded 320 km^2 for private plantations (and 1,280 km^2 by 2002), tax reductions, and soft loans and an import duties waiver for machines to produce pulp (*The Nation*, January 11, 1993; *Bangkok Post,* February 1, 1993). Meanwhile, after the RFD increased its campaign for private plantations, the cabinet legalized commercial reforestation on September 13 and 21.

The failed old strategy to commence commercial plantations or forced resettlement was replaced by a new, softer approach. First, the government acknowledged that large parts of the national forest reserves were already settled and used for agriculture and, therefore, it distributed Sor Por Kor documents to 220,000 families (title deeds for cultivation, available for loan but not for sale). Second, a large reforestation program in honor of the King (commemoration of the Royal Golden Jubilee of His Majesty's Accession to the Throne) was launched to reforest 5 million rai of lands. Half of the 4.3 billion baht budget was supplied by the private sectors, thus re-legitimizing private involvement in forestry. Despite this softer approach, Prasit et al. (1995, cited in Brenner 1999, 19) recorded around 932 conflicts over natural resources in the northeast between 1993 and 1995. This resistance was given by the main RFD officials as the reason for the failure of the reforestation program.

The conservation strategy of increasing the area under national park and wildlife sanctuary legislation still existed happily along with community forestry and industrial tree plantations. This time the focus of resettlement was now shifted from the northeast to the north. The Hmong, Mien, and other ethnic groups were evicted in 1994 (see table 5 for details on the classification of national forest areas). The resistance by farmers led to the formation of the Northern Farmers Network (Pratuang 1997; Anan 1998, cited in Brenner et al. 1999, 17).

Table 5. Classification of forest reserves and comparison to statistics

Region (# of provinces)	Total	Actual forest area (1995)	Classification of national forest reserve area (NFRA)									National forest reserve area			Actual forest in % of NFRA
			Conservation forest (Zone C)			Economic zone (Zone E)			Agricultural uses (Zone A)						
	1,000s of ha	1,000s of ha	1,000s of ha	% of NFRA	% of total area	1,000s of ha	% of NFRA	% of total area	1,000s of ha	% of NFRA	% of total area	Number	1,000s of ha	% of total area	
North (14)	16,965	7,389	8,170	77	48	2,197	21	13	183	2	1	233	10,550	62.2	70
Northeast (17)	16,886	2,127	1,938	35	11	3,276	59	19	298	5	2	352	5,512	32.6	39
Central (18)	10,390	2,388	2,473	52	24	1,856	39	18	404	9	4	167	4,734	45.6	50
South (14)	7,072	1,246	1,536	55	22	973	35	14	271	10	4	468	2,779	39.3	45
Thailand	51,313	13,150	14,117	60	28	8,302	35	16	1,156	5	2	1,220	23,575	45.9	56

Source: Rasmussen et al. 2000, 21, cited in Jira 1998 and RFD 1999.

By 1995 the government strategy had clearly failed. The reforestation program in honor of the King was officially declared a failure, as less than 40 percent of the target was realized. A 48-km march in the north involving 20,000 people ended with the government backing down on evictions and acknowledging community rights over forests. The land reform program ended in disaster and the Phuket Land Scandal, which involved members of the cabinet, led to the government's downfall. This submergent phase can be characterized by official government approval of community forestry without real action or legislative progress being made to establish it.

During the beginning of the fourth phase, with the Community Forest Bill on the agenda (1995–1998), popular protests were not strong enough to achieve a change in government policy in the direction of community forestry. The establishment of the Forum of the Poor in December 1995, a national umbrella organisation of 180 people's groups and NGOs, started to add pressure on the central government. A 28-day demonstration in Bangkok by 11,000 farmers started March 26, 1996, demanded a community forest bill, forcing the newly-formed Banharn government to produce a draft called the "Suanbua Draft Version." After a lengthy process involving the Cabinet, the Council of State, the House of Representatives, and Parliament, the bill was approved in principle by the Cabinet on June 2, 1996.

The election defeat of the Banharn government, however, postponed again the passing of the bill. The new, slow prime minister, Chavalit, had to face another 99-day demonstration by the Forum of the Poor in 1997 from January until April before his government made concessions in two areas. First, the government stated, in the so-called "Wang Nam Khiaw" cabinet resolution, that people and forests could co-exist, thus giving the right to settlers of national forest reserves to stay until the process of zoning conservation areas is completed. Second, the government organised three public hearing in May

1997 to discuss the different positions on the bill in preparation of its implementation.

But later, the government backtracked. The difference between the NGOs' demand for community forest rights and local empowerment and the state view of the Community Forest Bill as a state-initiated and state-controlled conservation program was too large. The second Chuan Leekpai government did not inspire hope that it would push for legislation more forcefully than in its first period of office. The newly-appointed head of the RFD, Plodprasop Suraswadi, declared that co-existence between people and forests was impossible. On July 1, 1998, the Chuan cabinet revoked the Wang Nam Khiaw resolution on the recommendation of the National Forestry Committee. The old strategies of classification and zoning, with the eviction of villagers living in "sensitive areas," were recommended.

The group of "dark-green" conservationists (anti-hill tribes) and the group of NGOs established in local conflicts to support the Thai farmers against the "hill tribe" groups pushed their interests at the national level and found a natural ally in the RFD with its protected area strategy (Buergin 2000, 12). Since 1997 they demonstrated, petitioned politicians, fenced the fields of "hill tribes" with barbed wire, blocked roads, and burned the effigies of professors in Chiang Mai University who supported the rights of ethnic groups. They demanded resettlement of all "hill tribe" groups out of the watershed forests and revocation of the Cabinet Resolutions of April 1997.

On April 13, 1999, the director of the RFD flew by helicopter to a wildlife sanctuary and landed where the Karen had just started to celebrate a three-day-long annual religious festival. Military troops burned down religious shrines of the Karen and threatened villagers as well as demolished huts, their rice barn, and personal belongings. From April 26 to May 20, 1999, about 3,000 representatives of the different "hill tribe" groups demonstrated in front of the provincial government in Chiang Mai, supported by various Thai NGOs and academics, to demand their rights to be granted Thai citizenship, the simple procedure for naturalization, and the recognition of their settlement and land-use rights. On May 2, 1999, Deputy Interior Minister Vatana Asvahame and Deputy Agricultural Minister Newin Chidchob clarified their position that rights in community forests shall be granted only to Thai nationals. But later, on May 11, the committee for the community forest bill was changed without provisions for representatives of ethnic groups and academics. The villagers' decision to continue their demonstration was responded to violently by around 1,200 forest rangers and 400 policemen on the night of May 18. On May 20, the villagers left Chiang Mai after the Minister of Interior agreed to improve the procedures for naturalization and the Minister of Agriculture declared he would reconsider the residence of the ethnic groups in the forests after they registered with the local forestry office.

To sum up the narration, the fate of the Suanbua Draft Version, approved by the Banharn cabinet on June 2, 1996, was unclear when the Banharn government was dissolved and replaced by the Chavalit government. A committee of seven members, mostly academics, led by Mr. Montree Roobsowan, a lecturer at Ramkhamhaeng University, organised the days of public hearings. Designating community forests in protected areas was later only considered possible if communities managing the forests could prove residence before 1993, the year of the latest aerial survey for the 1:4,000 map. In September, however, a new committee of a different composition was set up, this time chaired by the prime minister's office minister Pokin Polakul. It drafted and submitted a revised version (Juridical Committee Version) that again drew harsh criticism from the majority of farmers and organisations involved in the discussion. This draft did not include the conclusions of the committee nor publicize the decisions for other parties. Once again, due to strong opposition, a new revision of the draft, formulated by representatives of NGOs, government organisations (GOs), and academics emerged on May 18, 1998, which is as yet pending approval by the Chuan government (PM Appointment Committee Version).

The three contested points in the draft were the issue of community forest areas (settlement for villagers), the activities and residence of people (locals' ability to manage and protect forests), and management and monitoring (evaluation procedures). While "light green" (pro-people) NGOs and academics proposed evidence that people are able to protect and use the forests in a sustainable way, the "dark green" NGOs and conservationists, including the conservative members of the RFD, strongly opposed these ideas. In July 1998 the pro-people Wang Nam Khiaw resolution of the Chuan cabinet, which was agreed April 22, 1997, was revoked; the principle of co-existence of people and forests was questioned again.

5. Conclusion-Discourse of the meaning of participation in government circles

Hirsch (1990, 184) notices three sources of discourse on participation in the Thailand context: (1) the World Bank's conceptualization; (2) the Thai section of the UNRISD project on popular participation, a conference of prominent Thai academics together with civil servant and development workers; and (3) local-level discourse in Lan Sak (a studied village).

During the early post-war era, the participatory role of the masses in development was seen as one of taking part in economic development as producers by provision of cheap labor and as consumers of the enlarged national products that development would bring about (Stiefel and Wolfe 1984, cited by Hirsch 1990, 184). In the Thai context, this was epitomized by Sarit's doctrine in the early 1960s of concentrating on economic development while stifling all forms of popular political participation.

Eventually, the UNRISD (1978, 2, cited by Hirsch 1990, 186) stated that participation was interpreted as the "active and meaningful involvement of the masses of people at different levels: in the decision-making process and in the execution of resulting programs and projects." But later, a group of Thai academics, government officials, and development workers reflected the variety of interpretations of participatory development. The director of the Community Development Department, for example, proposed participatory development as "the process by which the government promotes, persuades, supports, and provides the opportunities for people in the community, whether they be individuals, groups, clubs, associations, foundations, or voluntary organisations, to take part in carrying out any piece of work…in order to fulfill stipulated development objectives and policy" (Phairat 1984, 6).

In the village studied by Hirsch, a forced village meeting organised by the officials was attended by villagers in a very reluctant, "foot-dragging" manner.

This paper, almost similarly, finds at least three contesting discourses over the meaning of participatory development in Thailand's forestry policy. The first discourse is the function of "forest encroachers" as the labor providers, either in the forest business or in urban areas, under a forestry policy regime focused heavily on the economic gains won by exploiting forests. The second, the new division of agricultural labor, appears in the fact that at the same time the highlanders are forced to look for work in towns, the lowlanders are looking for upland areas to develop as orchards and resort areas. The government's frustration in its attempts at forest conservation resulted in the new jargon of inviting a "new partnership" with NGOs in the Seventh National Economic and Social Development Plan (1991–1996). NGOs, broadly defined as organisations from the grassroots to larger, more formal ones, were invited to launch forest conservation projects. The replication of "successful" NGO projects in other areas, however, has proven to be problematic for many reasons. As these two discourses of participatory development are two different variants of the same theme in the government circle, this paper regards these as the same type.

And the farmers themselves offer, through their own style of demonstration or protest movements, the third discourse of participatory development, which is the farmers' own control and management over their own forest resources. For illustration, between 1993 and 1995 alone, Prasit et al. (1995, cited in Brenner 1999, 19) recorded around 932 conflicts over natural resources in the northeast, or about 25 conflicts per month. To repeat England (1996, 68), the conflict (in Thailand) is between two rival forms of exploitation, that of plantation forestry and smallholder cash-crop agriculture. The farmers have launched another series of campaigns for the pro-farmer Community Forestry Bill by using Section 170 of the 1997 Constitution, which states: "People, who are eligible to vote, at least 50,000 of them have rights to propose to the chairperson of the parliament a law as stipulated in Part 3 and Part 5 of this Constitution. The proposal must explain the criteria and methods of gathering the list of names according to the law."

6. Recommendations: Aagenda for research and policy development

The project approach to sustainable development must be both improved and supplemented by greater understanding of the grassroots-level concerns and activities related to the environment. As we have seen in the case of Thailand, its governments—from 1985 on—have been using popular jargon such as "community forestry" or "reforestation" to name ambitious resettlement projects related with fast-growing tree species (commercial). Instead of this program- or project-based approach, Vivian (1995, 53), having reviewed some cases in developing countries, offers two possible directions, both of which are based on public participation defined in a more fundamental sense that goes beyond the mere provision of labor and inputs into projects initiated from outside the communities. Barraclough (1990, cited in Vivian 1995, 53) notices and asserts that increased public participation is necessarily a confrontational process, because the development goals of the elite normally preclude increased involvement of the poor in resource management decisions. Similarly, the projects "offered" to the farmers have been violently resisted by the Thai farmers.

The first direction towards sustainable development involves the increased recognition of "traditional" (not necessarily "tribal") resource management practices, an analysis of the value of such practices under current and future conditions and an assessment of ways to ensure either that sustainable practices are maintained, or to adapt the most viable of them for use in different economic, social, or environmental contexts. The second direction involves incorporating the concerns, goals, and activities of local grassroots organisations and social movements into externally-assisted projects in such a way that such projects become self-sustaining and self-replicating without external promotional efforts.

The definition of sustainable development itself, lacking an analytical precision, must be rebuilt in terms of human needs and on ways in which local-level participation (including in definition of goals to attain) can form the basis of more successful approaches to reach this goal (Vivian 1995, 56). The issues of the role of the state and development community in policy determination that affects the environment, the mechanisms of influence of policies, the impact of large-scale environmental destruction, and the role played by system and structural factors in influencing the outcome of some environmental problems, if tackled properly, can produce fresh insights into some of the standard interpretations of the conventional wisdom of sustainable development.

This wisdom includes the viability of traditional resource management systems, the dynamics of common

property management, the relationship of population growth to environmental degradation, and the large-scale potential of small-scale popular environmental movements. Usually people who rely very immediately on natural resources for their livelihood, if they have been successful in establishing a sustainable mode of production, have developed "traditional" methods to ensure the conservation of their environment. Such traditional resource management systems are important to examine in more detail in the context of the search and research for sustainable development (Vivian 1995, 57).[3]

The traditional management systems, whose common property tenure and usufruct systems have been tainted by Hardin's "tragedy of the commons," have been revived by Bromley and Cernea's study (1989), which finds that the firm basis and long history of property rights of exclusion have been largely eroded by both active and benign neglect of the state. Bandyopadhyay (1990) showed that in certain communities in India, common property resources were better safeguarded than were private property resources. Nevertheless, some studies (for example, Watson 1989) warn that some communal societies are clearly repressive, thus excluding large numbers of people, including women, from enjoying the full benefits of community holdings.

The overt attention given to the relationship between population growth and resource degradation also deserves some reconsideration, because the population growth approach is an over-simplistic means of portraying the environmental problems in the Third World as well as a distraction from more fundamental causes and productive solutions (Vivian 1995, 64). Some studies on deforestation in the Himalayas and Brazil (Somanathan 1991; Mahar 1989; Hecht and Cockburn 1990) as well as study on the capacity of traditional management practices to support a densely-populated place (Miehe 1989) have shown that deforestation is related to a complex set of factors, including policy decisions.

The continuation of traditional resource management has been heavily dependent on the active support and struggle of their participants against the internationalization of local economies, increasing commercialization, and pressure and hostility from development agents. Environmental activism—including pickets and street protests (which are not typical strategies of Thai farmers only)—occurs when complete environmental destruction is threatened and when resource management is converted into other forms in which traditional ways of life are untenable (Vivian 1995, 67). It is not just a struggle against the expropriation of resources but also resistance against resource over-exploitation by outsiders.

Some lessons can be extracted from this environmental activism. First, as the activism is triggered rather by the lack of sufficient benefits from such projects for local communities, it becomes clear that farmers are much better at least to assess the true costs and benefits of ecosystem disturbances than any outside evaluator. Second, the success of such movements is often due to their ability to form a coalition with regional, national, or international groups that have similar interests, and to publicize their grievances and their cause. (The wave of evictions of some minority groups from forest areas in northern Thailand in 1994 led to the building of a loose Northern Farmers Network; about 180 people's organisations and NGOs in Thailand formed the Forum of the Poor in 1995.) This collective action often turns the movements from negative to positive activity in what is dubbed by Hirschman (1984) as "the conservation and mutation of social energy" from, for example, opposition to a large dam to proposals and support for a series of smaller, more manageable dams (Bandyophadhyay 1990). Third, the need for activism around local environmental issues has put sustainable resource management on the agenda of activist groups and NGOs with wider concerns.

The flood of research on participation in resource management has shown that poor communities not only have significant incentives to manage their resources sustainably but they also have often been able to develop a variety of effective and adaptable means to do so. Environmental degradation in rural areas of Third World countries like Thailand is not due to the poverty of rural communities; rather, poverty is a symptom of one of the primary underlying causes of local-level environmental decline in the Third World today—the disempowerment of these communities (Vivian 1995, 72). People may be deprived of access to the resources on which they depend, their traditional tenure rights and rights to exclude outsiders may be abrogated, or their ability to make their own decisions regarding resource management may be curtailed. The struggles for greater participation are essential elements of the foundation of an endurable basis for sustainable development (Vivian 1995, 73). This will depend on the efforts of development agents, researchers, and also environmentalists, not only to support people's rights for self-determination but also to recognize that their struggles are essential to the health of the environment.

[3] First, they involve religious beliefs—social controls—to regulate resource use and to ensure that the environment is managed sustainably. Second, they have well-defined and explicit rules governing resource use, although sometimes these rules are invisible to outsiders. And third, the traditional systems have developed, refined, and transmitted environmental knowledge in rural communities (Vivian 1995, 57–58).

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Forest Policy Development in Mongolia

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Abstract

Mongolia's forests are located in the transitional zone between the great Siberian taiga and the Mongolian plateau of grassland steppe. These forests play a critical role in preventing soil erosion and land degradation, in regulating the water regime in mountain areas, maintaining permafrost distribution, and in providing habitats for wildlife and preserving biodiversity. Since the 1970s, Mongolia's government has been paying more attention to protecting forest resources from both natural and man-made negative impacts including over cutting, illegal logging, forest fires, and harmful insect distribution in certain areas. In 1990, Mongolia made a dramatic change in its political and economic system, the basic concept of which is the transition from a single-party political system to a democratic form of society. During the transition period from a centrally-planned economy to a market-oriented system, the management of forest resources was taken over by local governance systems. This situation requires development of all forestry-related legislative acts as well as national forest policy, laws, and regulations in accordance with the new system of society.

Along with the change-over from the centrally-planned system to the market-oriented economy, it has become necessary to develop a new system of laws, rules, and regulations to suit the reforms being carried out.

Keywords: Forest policy, Laws, National forest programme, Silviculture, Aimag, and Bag.

1. Background

Mongolia is a landlocked country situated in Central Asia, occupying a unique geographic location between $41^0$35' and $52^0$09' North latitudes and $87^0$44' and $119^0$56' East longitudes. Its territory comprises 156.65 million hectares (ha), and it shares borders with Russia and China.

Mongolia is a mountainous country at an average altitude of 1,580 meters (m) above sea level, with 82.2 percent of the country located above 1,000 m in altitude. The highest point, the Huuten peak is 4,374 m above MSL. Based on topographical features, the country can be divided into five regions: (1) the mountains located in the north and the west, (2) the intermontane basins where the major farming regions area located, (3) the plateau and desert belt located in eastern and southern Mongolia, and (4) rivers and lakes. In addition, four geographic regions are commonly referred to: the Altai mountain on the western border, the Khangai-Khentei mountain area in north-central Mongolia, the east Mongolian region, which coincides with the steppe region, and the Gobi region in the south and southeast.

The highest and the longest range of mountains is the westernmost, the Altai, which stretches about 1,500 kilometers (km). Most of the southern part of the country is a vast, rolling, oasis-dotted plain, forming the northern fringe of the Gobi Desert, which is predominantly stony, with sands covering only 3 percent of the terrain. The Gobi occupies about a third of Mongolia's territory. The great desert of central Asia joins in from the south.

The country has a large number of rivers and streams, some of which are seasonal, with a total length of about 67,000 km. The great divide, which separates the waters that flow into the Arctic and the Pacific oceans and into the interior basins of central Asia, runs along the crests of the Khentiyn, Hangayn, and the Altai mountains. Mongolia's greatest, but third longest river, the Selenge, drains northward towards Lake Baikal in Russia. The territory of Mongolia is thus in a confluence zone of very important watersheds in Central Asia.

2. Overview of the forests in Mongolia

Mongolia has been recorded as being a country with small forest resources, but the forest's importance is seen from the fact that the country occupies tenth place by area of forestland and first place by forest area per capita in the Asian region. In 2000, the total area of forest in the country was 18.3 million ha, including 12.9 million ha of closed forest, which covers 8.1 percent of its territory. If saxaul stands are excluded (*Haloxylon ammodendron*), all natural forests, shrubs, and willow groves cover in total 10.5 million ha, occupying 6.7 percent of the total area of the country. Statistics from the Food and Agriculture Organization of the United Nations (FAO) indicate that the country has limited forest resources. Total forest stand stock is equal to 1.4 billion cubic meters (m^3), with a total annual increment of 12.0 million m^3, and 58% of the total forest resources of the country belong to special and protected forest areas. The different land types of Mongolia are given in Table 1.

The main tree species in the forests are Siberian larch, Scotch pine, Siberian spruce, cedar, Siberian fir, birch, aspen, poplars, and willows (Table 2).

Table 1. Land classification of Mongolia by main types of land use.

No.	Type of land use	Area, in thousands of ha	Percentage, %
1.	Agriculture and pasture	13,0357.7	83.4
2.	Cities and settlements	402.7	0.26
3.	Land under roads and electricity lines	328.6	0.21
4.	Forest land	18,292.0	11.6
5.	Areas under lakes and river	1,665.0	1.06
6.	State reserve land	5,365.6	3.43
	TOTAL	**156,411.6**	**100**

Source: State of Environment, Mongolia. MNE. 2000

Table 2. Distribution of forest stand stock by tree species in Mongolia.

Name of tree species	Stand stock (000' m^3)
Siberian larch (*Larix sibirica*)	1026,860.6
Scotch pine (*Pinus silvestris*)	92,606.0
Siberian pine (*Pinus sibirica*)	163,960.4
Spruce (*Picea obovata*)	3,688.1
Fir (*Abies sibirica*)	375.7
Birch (*Betula platyphylla*)	86,162.9
Poplar (*Populus*)	2,120.6
Aspen (*Populus tremula*)	1,390.2
Willow (Salix)	544.7
TOTAL	**1379,181.7**

Source: State of Environment, MNE. Ulaanbaatar. 2002

The forests of Mongolia are under state ownership. Functionally, they are classified as strictly protected forests (8.4 million ha), protected forests (7.9 million ha), and utilisation forests (1.2 million ha). The extent of utilisation forests was progressively reduced during recent years (i.e., since 1992) by transferring areas to the category of strictly protected and protected forests.

Management of forest resources in Mongolia suffers from several weaknesses such as unregulated use, overuse, and inadequate protection.

The impacts of human interference have resulted in deforestation and forest degradation. According to a survey of human impact on ecosystem in Mongolia during the last 100 years, it is seen that some 40% of all forests in Mongolia have been impacted at some level or other; 684,000 ha have not regenerated after fire damage and 250,000 ha after clear-cutting; 1,737,000 ha of coniferous forests have been replaced by birch and poplar, 159,000 ha by *steppe* and sand/stones, and 1,230,000 ha by low-quality coniferous forests. Cold-resistant *taiga* forest has been shrinking; 16% of forest ecosystems have been replaced by non-forest eco-systems. Reports indicate that between 1974 and 2000 forest cover over an area of about 1.6 million ha were lost (Krasnoshekov et al. 1992).

The important causes of deforestation and forest degradation are fire, overgrazing, mining activity, improper commercial logging, illegal collection of wood for construction and for use as fuel, hay making in forest steppes, complacency in enforcement of forest rules and regulations, and damage by pests and diseases. Forest fires, by far, have had the most serious impact on the forests of Mongolia. Forest fires are mostly incendiary, caused by herders and collectors of antlers. Between 1990-2000 about 7.52 million ha of forest were burned by fire.

In order to replenish and compensate for the growing stock removed for various purposes (or lost due to various reasons), Mongolia's reforestation activity was started in 1971. So far, an area of about 84,000 ha has been planted. The quality of the forest plantations is

generally poor, mainly due to lack of adequate maintenance and care, and partly due to the influence of the harsh climate.

Faced with the problem of dwindling forests and its ecological consequences, the government has given emphasis to forest conservation in recent (post-1990) years, with the objectives of protecting wildlife, conserving bio-diversity, maintaining ecological balance, enhancing beneficial influences of forest, and controlling desertification. Some 17.1 million ha, about 10.9% of the Mongolian territory, have so far been declared as protected areas (of this, some 8.4 million hectares are designated forest lands).

On the production front, however, the annual volume of logging, which was about 2.2 million m^3 in the mid-1980s, fell to about 0.86 million m^3 in 1992, and the harvest in the year 2000 was only 0.5 million m^3. This fall in harvest levels is partly due to the influences of institutional and policy changes involving the privatization of production enterprises and the decentralisation of decision-making power. But partly it is also due to the supply constraint caused because of the reduction in the area of designated utilisation forests from about 5.8 million ha in 1985 to 2.4 million ha in 1990, and further to 1.19 million ha in 1996 (because of reclassification of some of the utilisation forests as protected areas). Also, the Forest Law of Mongolia prohibited clear cutting of natural forests and prescribed selective cutting in 1995.

Between 1940 and 2002, a total of 45.8 million m^3 of round wood was harvested from more than 320,000 ha, and annually about 392.5 thousand ha were affected by forest fire and 101.1 thousand ha of forest area damaged by insects and pests since 1980. Between 1996 and 1997 alone, 5.0 million ha were affected by forest fires, and within them nearly 500,000 forests were completely burnt and lost ecological function. Some statistics says that one-quarter of Mongolia's total forest land has been affected by human activities such as illegal cutting, forest fires, and harmful insects and pests.

In the period from 1995 to 2000, the Mongolian Parliament adopted the Law on Forests, the Law on Fees for Timber and Fuel Wood Harvesting, the Law on Forest Fire Prevention, and the Law on Quotas of Export Custom Tax on certain goods, but relevant laws and regulations have not succeeded due to a lack appropriate institutional restructuring and privatization of the forestry sector during the period of economic transition. In the past few years, silvicultural thinning has been reduced. The annual rate reached less than 500 ha of clear-cutting has covered annually about 1000 ha; the residual trees have been used for production of timber goods and as fuelwood for local citizens.

Since 1971, re-afforestation activity has been regulated by the State Central Plan and directive. Reforestation activities totalling 100.3 thousand ha cover only 30% of all the logged area in the country. For example, reforestation and afforestation activity implemented annually covered about 3.9 thousand ha in 1980–2000, 4.6 thousand ha in 1996–1999, and 8.2 thousand ha in 2002 (Table 3). Due to financial constraints, activities on combating desertification and soil erosion and breeding of seedlings have not met present needs.

Table 3. Reforestation area in Mongolia (ha).

Years	Area planted
1971–1980	3,085.5
1981–1990	30,380.9
1991–2000	50,576.3
2001–2002	16,275.0
TOTAL	**100,317.7**

Source: MNE 2000–2002.

Prior to the change in government, Mongolia's forest industry was dominated by state-owned companies or joint-ventures with the former COMECON trading partners (USSR, Romania, and Poland). The actual annual harvest has decreased due to the collapse in COMECON country co-operation and the economic recession in Mongolia. Several processing plants have closed due to cost overruns and shortage of materials. The majority of wood-processing companies in Mongolia are sawmills and small-scale furniture joinery or furniture factories.

At the present time, annual logging in the country has reached 700.0 thousand m^3 of timber wood, and it supplies domestic demand for wood and timber products Also, an assortment of wooden products were once exported in small quantities, but forest enterprises, timber-harvesting companies, and wood-processing factories are at a standstill due to old machinery, equipment, and inappropriate industrial processing technology. This is reflected in the fact that in 1989, products of the forestry sector were accorded around 4.7% of gross domestic product (GDP); by 1998 this rate had declined to 0.25%.

The management of forest resources in Mongolia suffers from several weaknesses, including unregulated use and overuse and inadequate protection. This situation requires the development of forest legislation and a nation-wide forest policy in order to deal with the negative manmade impacts related to deforestation.

3. Forest legislation

Along with the change over from the centrally planned to the market-oriented economy, it became necessary to develop a new system of laws, rules, and regulations to suit the reforms being carried out. Accordingly, since 1993, a large number of laws have been drafted, covering every aspect of Mongolian life and governance. It falls into four groups: land and environmental laws; laws governing natural resources (including forestry); laws on natural resource use fees (to respond to the needs of the market economy); and laws related to natural disasters. Regulatory documents to implement these laws have also been prepared by the government. In case of instances of

conflict, where multiple legislative documents are to be construed together, the following priority (or superseding order) will prevail: constitution of the country, parliamentary laws, parliamentary resolutions, cabinet resolutions, and ministerial resolutions.

There are some 27 laws (and more than 200 rules and regulations) falling under the purview of the MNE. At the central level, the Environmental Protection Agency is responsible for providing guidance in the implementation of the laws. Actual enforcement of these laws is the responsibility of the environmental units at the *aimag* level, the environmental inspectors at the *soum* level, and the rangers at the *bag* level.

Forest legislation has a long history in Mongolia. Rules on forestry in Mongolia were first adopted in 1925, which then became the Forest Law in the 1930s. The laws existing at the time of initiating economic reforms were the Forest Law of 1974, which was revised in 1995, but several of the old provisions were retained.

Since 1995, the Mongolian parliament has adopted about 25 environmental laws, covering various aspects of land use, environmental protection, air, plants, animals, forests, toxic substances, environmental impact assessment, wildlife protection, and protected areas, etc.

3.1 Mongolian Law on Forests

The Mongolian Law on Forests was adopted on 31 March 1995, and became effective in June of that same year. It is divided into seven chapters covering the possession and use of forests, the various forest types and zones, forest inventories, and protection measures and fines for the violation of the law. The Mongolian Law on Forests is intended to address the basic questions of proper forest use, management of forest protection, and regeneration of Mongolia's forests. According to the constitution of Mongolia, forest resources are the property of the state, which has the power to grant possession of them to local governments. The local governments may then grant citizens, economic entities, and organisations the right to use the forests and forest resources pursuant to contract or license. The Mongolian Law on Forests does not indicate how this "ownership" of the resource will affect the rights inherent in land lease contracts, their extensions, or other land-use laws and regulations.

The Forest Law of Mongolia, adopted in 1995, consists of seven chapters (and 33 articles): (i) general provisions, (ii) forests within special zones and protective regimes, (iii) forests within protected zones and rules for their protection and usage, (iv) industrial zone forests and their usage regimes, (v) protection and regeneration of forests, (vi) forest utilisation, and (vii) miscellaneous provisions. In the new law, the protection of forest resources and the environment has been especially emphasized, and clear cutting of forests is discouraged/disallowed. The central government specifies the annual logging quota to the aimags, and the aimags select the cutting areas. Logging companies are to plant three to five seedlings for each tree felled. Provision has been made for increasing royalties from the present levels.

The new forest law implies forest management by private entities. Development of economic relations between the forest owner (government) and forest users is an important element in the transition to a market economy. Leasing forest resources is appropriate when the state owns the forests. However, the lease period, rent, payment schedule, rights, and obligations of the lessor and the lessee have not yet been defined or determined.

3.1.1 Forest zones

The Mongolian Law on Forests divides forests into three categories: *strict, protected, and utilisation zones*. This division into three zones is similar to the system the Ministry of Forestry and Forest Industry initially established in 1972 under different names. The first two zones—strict and protected—are further divided into four sub-zones and eight forest types. The utilisation zone remains a single classification acting as a default category. All forest areas not specially included in the first two classifications are defined as utilisation zone forests. Each zone has a separate protection regime where the most protective category is the first—strict zone—followed by protected and utilisation zones. All forest zones require the implementation of fire, pest, and disease protection programmes, and all local citizens are essentially considered community firefighters.

The *strict zone forest* category is the most protective of the three. This zone consists of sub-alpine forests, pristine and conservation zone forests within strictly protected areas, and special zone forests within national conservation parks. The protection regime of the strict zone forests is shown in Table 4.

Protection zone forests is the second category. The protected zone category is much broader, consisting of four sub-zones including certain forests within special protected areas—national conservation parks, nature reserves, and monuments—as well as green zones around towns and villages, prohibited strips along riparian zones, national roads, and railways, and locally protected forests. Locally protected forests may consist of areas containing different forest types, including saxaul forests, oases, forest stands covering up to 100 hectares, forest groves, shrubs, sun-exposed forest areas, and forests on steep slopes over 30 degrees. The purpose of green zone forests is to create recreation conditions and a clean environment for the residents. Prohibited strip forests are those within 5 km of a lake, river, or stream source, 3 km of a riverbank or mineral water source, and 1 km along national roads and railways.

Box A. Chronology of forest legislation in Mongolia.

21 May 1921	State declaration of land, water and forest resources
11 August 1924	National Forest Rule
26 Sept. 1924	Establishment of Forest Division, Ministry of Economy of Mongolia
27 March 1931	Mongolian Law on Forests
03 Oct. 1934	Revision of Forest Law
14 Dec. 1940	Revision of Forest Law
14 April 1944	Rule of forest fire prevention and fighting
13 March 1957	Revision of Forest Law
06 March 1964	Establishment of forest zones and categories
10 May 1968	Establishment of Forest Fire Fighting Commission
04 July 1970	Rule of Forest Inspection and Control
25 March 1972	Establishment of Ministry of Forestry and Wood Industry
01 July 1974	New Revision of Forest Law
22 Nov. 1974	Rule of Forest Law Enforcement
26 Dec. 1974	New system of forest royalty and stumpage price
1973–1975	Forestry Strategic Plan, 1975–1990
17 Jan. 1975	Re-establishment of forest zones
31 March 1995	New revision of Forest Law
19 May 1995	Law on Fees for Forest Harvesting
28 May 1996	Law on Forest Fire Prevention
15 July 1998	National Forest Policy Statement
26 Dec. 1998	State Policy on Ecological Conservation
31 Oct. 2001	Revised National Forest Policy Statement

Sources: various.

Table 4. Protection regimes of strict zone forests.

No.	Classes of strict zone forests	Main functions of forests and protection regime
1.	Strict zone forests	To maintain the forests' natural features and environmental balance. To protect the forest from fire, harmful insects, and disease.
2.	Sub-alpine forests	To maintain environmental balance in watersheds and to prevent soil degradation. To gather fallen trees and branches through cleaning. To use non-timber forest products.
3.	Pristine and conservation zone forests in special protected areas	To preserve the original natural condition and features in certain areas. To conduct observation and investigation for the special purpose of long-term conservation.

Utilisation zone forest is the default category. All forests that do not belong to the previous two categories are classified as utilisation zone forests. These forests are designated primarily for commercial timber harvest with contracts and the payment of fees required. The first task under the law is the determination of allowable harvest volumes. This is a top-down process. First, the Ministry of Nature and Environment determines the maximum allowable harvest for each aimag and the capital city on an annual basis. Then, the aimag and capital city Khurals decide on the permissible cut, based on the recommendations of the Ministry of Nature and Environment. Finally, the Soum Khurals decide on the permissible cut within their territory based on the Aimag Khural decision.

Bids to harvest timber are to be submitted to the soum and capital city governors. Before submission of bids, decision-makers must consider (i) the economic efficiency of harvesting activity, (ii) harvesting techniques, (iii) processing technology, (iv) availability of funding for protection measures and reforestation, and (vi) the

permissible cut. After approval of bids, the timber company must enter into a contract with the certification organisation stipulating the legal basis for the harvest, species to be cut, standing volume, harvesting removals, duration of the contract, implementation period, forest management measures, border of timber felling, technology used, and relevant fees. Timber and non-timber forest products may also be harvested for household purposes within this zone, pursuant to the appropriate permit obtained from local governors. Permits for fuelwood may be obtained from the local ranger.

3.1.2 Forest management

The forest management requirements in the Mongolian Law on Forests are the legal mechanism through which Mongolia assesses the current condition of its forests. By law, management shall consist of a forest survey and inventory, the state of forest stands—including forest distribution, composition, quality, silvicultural activities, and stand treatment—and then determination of the justification for forest conservation, proper use, and restoration.

This law does not specifically discuss or require forest planning, but it does require government to prepare various documents.

3.1.3 Prohibited and conditional forest use

Under the Law on Forests, prohibited activities include (i) cutting or harming forests up to the fifth age class, (ii) cutting all species of young trees, (iii) cutting certain species of trees and shrubs, (iv) clear cutting, and (v) grazing where seedlings have been planted. Virtually all other activities described in the various provisions of the Mongolian Law on Forests are conditional uses, which may or may not be engaged in, depending upon the forest zone and the purpose of the activity.

Conditional uses include haymaking, cutting Siberian pine, spruce, or elm (Article 22, subparagraphs 2, 4, and 5), fire prevention, use of chemicals against pests and disease, and harvesting non-timber forest products.

3.2 Law on Fees for Forest Harvesting

The Mongolian Law on Fees for Forest Harvesting was adopted on 19 May 1995 and became effective on 1 July of that same year. The main purpose of this law is to regulate the fee requirements for harvest of forest timber and fuelwood by citizens, economic entities, and organisations, and incorporation of these fees into the state budget. The law on fees for forest harvesting consists of the following chapters, which cover (i) assessment of indicators, (ii) fee amounts, (iii) fee exemptions and discounts, (iv) collection of fees and reporting, (v) payment refunds, (vi) fee complaints, and (vii) control of law enforcement.

This law imposes a fee on "the cutting of any kind of tree in the forest, for any purpose." These fees are based on the following:

- volume or tonnage of the forest produce gathered
- ecological and economic assessment
- transportation distance
- tree species

Discounted fees are available when citizens, economic entities, and organisations will receive a discount in fees for harvest of forest timber and fuelwood by collecting the fallen trees, stumps, tops of trees, and branches.

3.3 Law on Forest Fire Prevention and Control

This law provides detailed requirements for the setting up of forest fire prevention and control organisations at local and central levels. In support of the state's responsibilities in the area of forest fire prevention and control, the possessors of forest land have several responsibilities:

- They are required to provide professional technicians or forest rangers to patrol and protect forests.
- They must control the use of fire within their areas.
- They must undertake fire prevention measures as required.

The law should assess civil and criminal penalties for violation of provisions in the law, or causing fires, or creating a risk of fires. These provisions and their efficient implementation are very important to the conservation of the forest environment.

4. National forestry programme

The National Forest Programme is a comprehensive policy framework towards the management, conservation, and sustainable development of all types of forests, based on a set of specific principles and strategic elements. They comprise a broad inter-sectoral approach to forest development at all stages, including the formulation of policies, strategies, and plans of action, as well as their implementation, monitoring, and evaluation. They should be implemented in the context of each country's socio-economic, cultural, political, and environmental situation.

The elements of the National Forest Programme include the following: a national forest statement, sector review, objectives and strategies, policy and legislation, institutional reforms, investment programmes, capacity building, action plans, financing strategies, monitoring and evaluation, and coordination and participatory mechanisms.

In the case of Mongolia, the National Forestry Programme could include major sub-programmes for the following:

- institutional strengthening
- afforestation
- sustainable management of natural forests
- forest waste utilisation
- forest fire management
- rehabilitation and modernization of forest based industries
- non-timber forest products
- biodiversity conservation and protected area system
- desertification control
- forestry research and technology development

- education, training, public information, and extension

In the decentralised system of governance as it exists in Mongolia, it is essential that all the component local administrations should have their own forest programmes to address specific local issues (C. Chandrasekharan 2001).

5. National forest policy

The guiding principle of the forest policy for Mongolia up until 1990 had been derived from a policy document prepared by Russian forest specialists in 1975. However, in order to keep pace with the changing times, the government of Mongolia promulgated the new Mongolian Forest Policy Statement in 1997 and revised it again in 2001. It formalised the commitment and intent of the government to ensure sustainable development of forest resources while conserving wildlife, wild plants, and forest ecosystems. The current policy recognizes the goals and objectives outlined below.

5.1 Goal of the National Forest Policy

In 2001, a new forest policy statement was re-formulated due to reflect the special requirements of forestry in Mongolia. The new National Forest Policy of Mongolia specifies five main goals: prevent deforestation and desertification, modernize wood-processing technology and meet domestic demand for forest products, maintain ecological balance, develop institutional restructuring, technology transfer, and research extension.

The main goal of forest policy is to identify a forest policy statement and produce guidelines of activities to increase national capability of forest protection, rational utilisation, and forest rehabilitation in connection with the needs of sustainable development and ecological sustainability.

5.2 Policy objectives

1. To apply modern and more effective techniques and technology for forest protection and urgently implement prevention measures to reduce negative human impact, forest fires, and harmful insects and diseases.
2. To take measures for renewing the machinery and technology of sawmills, raising utilisation effectiveness, increasing production range, improving quality, and providing for domestic demand for wood and wood products.
3. To implement activities for the creation of protection/wind-break shelterbelts, small stands, and green belts in the steppe and Gobi desert area by, at first, conducting reforestation in upstream areas of rivers, logged areas, and forest areas affected by forest fire and insects, and then, accordingly, increase tree seed harvesting and breeding of tree seedlings.
4. To refine institutional structure and management in the forestry and wood industry sector.
5. To apply modern technology and scientific achievement in practice and develop international collaboration in forestry.

5.3 Terms of policy implementation

The programme implementation phases include the following:

First phase:	until 2005
Second phase:	2006–2010
Third phase:	2011–2015

6. Strategic measures

The most significant forest policy measures at the national level were identified as follows:

6.1 Forest management

- Introduction of remote-sensing technology and geographical information systems to determine forest state and conducting forest inventory in selected areas, i.e., 20% of total inventory area by using large-scale aerial photos and revising stand indicators in sample plots.
- Provide support to forest inventory enterprises of all types of ownership; forest inventory capacity will be increased by 1.5 to 2.0 times.
- With the purpose of increasing tree growth and improving wood quality, cleaning of forests will be conducted by unemployed people and youth, relying on professional institutions and people who own the forest, on the basis of contract.
- A plan of forest fire prevention and forest fire fighting must be worked out; fire prevention expenditures shall be budgeted and financed in the local annual budget.
- Create forest fire prevention breaks and forest dividing lines in state border zones and some required areas.
- Detect fires and fight hotspots using satellite information and air guard for forest fire monitoring and fire prevention groups.
- Provide natural disaster and fire fighting units with communications means and fire liquidating equipment.
- Fight forest fires with minimal losses by affecting clouds and intentionally causing rain.
- Take measures for prevention and determine probable forecasts of insect and disease distribution and their multiplication by intensifying research work.
- Modernize laboratory research and laboratory equipment and provide qualified personnel for fighting harmful insects and disease.
- Promote biological and environmentally-friendly technology for fighting harmful insects and organise the necessary products in the country.

6.2 Forest harvesting and wood utilisation

- Determine the annual allowable cutting volume of the aimags and soums in connection with forest resource capacity.

- Improve procedures for allocation of forest resources and forest harvesting technology under current conditions to assist the forest self-generation process.
- Create a regulation to hand over forest resources to an economic entity or organisation(s) who is able to combine logging, reforestation, and protection of forests.
- Cease cutting of young and premature trees.
- Protect saxaul forests. The firewood needs of some aimags and soums of the Gobi and desert zones will be met by cleaning forests in forest zones. The transportation expenses of the above-mentioned activity will be allocated from the centralized budget. In the Gobi zones, wholesale trade centres of firewood and timber consumer goods will be established.
- Considering the importance of extending forest roads for forest protection, silvicultural management, wood utilisation, improvement of infrastructure, and the development of tourism, the government will support and participate regularly in these activities with the assistance of foreign investment.
- Encourage a wood import policy to limit the export of wood and timber products.
- Replace railway sleepers with non-wood alternative materials.
- Reduce wastage of logging, and utilise tree tops, branches of trees, sawdust, bark, low-quality wood, and off-cuts by promoting and employing mechanical and chemical treatment to get deep processing by applying foreign and domestic advanced technology.
- To be realized in stages, produce essential oils out of conifers, vitamin powder, medicine extracts, pine-tar oil, and resin out of larch and pine trees, and charcoal out of birch trees, and supply internal and external markets with the above goods.
- Encourage and support initiatives to process birch, using industrial methods, apply known technology for producing birch parquet flooring, construction of wooden parts, and timber goods by relying on previous wood-processing factories.
- Establishment of small and medium-sized wood processing factories that are able to compete on the market, by modernizing the furniture and timber goods industry, will be supported by policy, and the assortment and volume of export goods will be increased.
- Create favourable conditions for the establishment of factories to produce particleboard, single-layer board, plywood, and veneer.
- Establishment of small and medium-sized wood processing factories that combine traditional and modern technology to produce consumer timber goods for countryside herdsmen will be supported.
- The list of usable non-timber forest products as well as their resources will be determined with a location map and utilisation period by region.
- Instructions and recommendations will be compiled in a handbook and followed in order to improve the use of non-timber forest products such as pine seeds, berries, mushrooms, and medicinal plants
- Support for an increase in household income will be given by promoting non-timber forest product processing and adding to its assortments.

6.3 Forest conservation

- Organise seed collection based on genetic selection evaluation and set up seed harvesting sites in each forest vegetation zone.
- Tree seed analysis laboratories with improved facilities and equipments will be renewed.
- Start the establishment of mother seed tree plantations with selection of elite and plus trees.
- Provide financial support to the establishment of tree breeding nurseries for the greening of settlements, for reforestation, and for the creation of shelterbelts to combat desertification and soil degradation in pasture and crop lands.
- Expand reforestation work annually in 10.0 thousand ha. Mobilize the activity of local citizens, youth, and the public community in seed collection and breeding of tree seedlings.
- Organise domestic industry to produce simple hand equipment for tree seed collection and seedling breeding.
- Provide portable equipment for forest nursery and reforestation work and modernize the technology of tree planting and reforestation.
- Introduce suitable technology in the practice of natural forest regeneration succession and tree plantation activities in accordance with forest vegetation zones and regions.
- Implement regulations for conducting reforestation by project and plan, and develop their monitoring, evaluation, and procedures for financing and transferring to state forest land.
- Renew the norms of assessment and expenses of seed collection, seedling breeding, reforestation, and the standard amount of seeding and seedlings for forest rehabilitation and tree planting in accordance with the steppe and Gobi desert zones.
- World Environment Protection Day will be celebrated by planting trees for ten days annually in every aimag and settlement.
- Improve the inventory of tree planted areas by providing a continuous cycle such as tree planting, tree patching, caring for them, and transferring to state forest land.
- Actions against desertification in the form of creation of forest strips and small stands to protect crop land and pasture will be supported and encouraged.
- In cases of exception of Provision 23 of the second part of the Forest law of Mongolia, a citizen, economic entity, or organisation are able to own forest that they planted by themselves.

6.4 Institutional strengthening

- Renewal of the legal environment and implementation and monitoring of legislation by making amendments to forest legislation will be intensified.
- A unit responsible for forest and related issues will be established in every aimag and the capital to coordinate the activities of professional organisations.
- Local professional organisations of all types of ownership will be set up.
- The system of coordinating activities of forest protection, rational use of forest, and reforestation-activities that are included in the duties of the central governmental organisation responsible for nature and environment and governors of capitals and aimags will be refined, improved, and regularized.
- To protect forest, reforestation that is conducted according to the contract signed by NGOs and the central governmental organisation, local organisations at their expense or at budget will be increased. NGOs will be involved in activities such as protecting the interests of domestic manufacturers engaged in forestry, providing them with know-how, machinery, and business information, in order to assist in project implementation.
- Protection of forest resources and regeneration activities conducted by a citizen or economic entity that has voluntarily participated will be supported.

6.5 Technology transfer and forestry research

- Scientific investigations will be intensified for the development of modern technology of forest protection, forest utilisation, forest regeneration, forest ecosystem sustainability, and its change.
- Agro-technology and techniques of plantation and selection of species will be developed for use in setting up greenbelts, shelterbelts, and small stands, in order to improve agricultural yield productivity as well as to protect pasture and crop land from soil degradation and desertification in steppe and Gobi desert areas.
- Scientific outputs will be introduced for the development of special protected areas management, protection of forest biodiversity, conservation of soil, water protection, and combating desertification.
- Experimental research will be conducted in the field of creation of new materials from residuals, deep processing of raw wood materials, production of consumer furniture, and development of the forest chemistry industry.
- Measures will be taken to promote the institutional structure of research institutions of the forestry, forest harvesting, and wood-processing industry.
- An information system of forestry will be set up and its capacity will be improved.

6.6 Human resources development

- The significance of forest resources and forest-related legislation will be widely advertised and publicized.
- Local authorities will be trained and educated in the fields of forest legislation, conducting forest inventories, forest protection, forest resource use, and reforestation.
- The quality of training in national universities and colleges that train forest specialists will be updated, and their activities to educate highly qualified national experts will be supported.
- Trained experts who currently work in forestry will be enrolled in short-term and long-term training either in Mongolia or abroad.
- Forest masters and workers with qualifications to run forest industry processing will be trained and re-trained in accordance with a special plan.
- Inter-governmental agreements on fighting and prevention of transboundary forest fires will be signed with neighbouring countries.

Each management unit should have a proper management plan that covers technical, financial, economic, ecological, social, institutional, legal, and managerial aspects. The technical prescriptions for management should, apart from social and economic criteria, consider the ecological, climatic, hydrological, and other habitat factors and their potentials. Varying degrees of management intensity results from technological development; accordingly, it is necessary to review and revise plans periodically. Studies on end-uses, growth and yield, site changes, ecological changes, etc., are important for management planning. Periodic forest inventory and resource studies/bio-prospecting should be carried out as essential inputs for management planning.

The integrity of management units is often a neglected aspect, which has negative impacts. This becomes more serious in a situation of an integrated, intensive, high-input, and high-investment management scenario. Incorporating the surrounding areas into management planning, thus widening the scope of planned involvement of communities, is considered an essential aspect in future forest management. The need for an appropriate management information system and monitoring of management activities, in order to ensure efficiency, is also flagged as important.

As entities having specific characteristics, each management unit should be managed to achieve the highest level of efficiency and sustainability in respect of its main function (and the combination of functions) assigned to it. Criteria and indicators for sustainable forest management should be developed, as appropriate, and applied to assess the state of Mongolian forestry.

7. Policy reforms and recommendations

To develop and implement existing forest policy and legislation in Mongolia, it is necessary to review the policy and to identify the underlying causes of policy failures. It is suggested in this connection that forest policy is to be approached in a comprehensive manner covering institutional, social, economic, and environmental needs. In this regard, the following actions are recommended in

respect to these issues:

- Restructure and strengthen forestry institutions at central and local levels. (The feasibility of establishing an autonomous forestry board, and how it can be established and structured, is a matter for consideration.)
- Formulate an appropriately phased and structured long-term national forestry programme for Mongolia to guide the development of sustainable forestry development.
- Consider the linkage of policy, legislation, programmes, and their implementing mechanisms.
- The present system of forest land use in the country should be reviewed in connection with forest conservation, and effective and efficient participation of local community organisations in forestry development should be established through rational resource allocation and appropriate tenure arrangements.
- An appropriately developed, structured, and balanced enterprise system, financial system, social protection system, and environmental protection system should be established.
- The country's capability in the field of forestry development should be enhanced, including the need to strengthen and restructure institutions engaged in forestry research and the need to improve facilities for forestry education and training.

An analysis of the forestry situation in Mongolia indicates that the existing policy has not succeeded in achieving sustainable forest management. It is necessary to review the policy and to identify the underlying causes for policy failures. It is suggested in this connection that forest policy is approached in a comprehensive/holistic manner, covering, *inter alia,* the following:

- Forest land use and management (ownership and functional classification of forest resource base; forest resource expansion; improvement of productivity; management planning; and wide-based people's participation).
- Forest protection and land rehabilitation (protection functions of forests; tree planting for protection and land rehabilitation; and protection of forests).
- Environmental conservation (protected area system; improving the standard of environmental conservation; environmental conservation; and income generation).
- Forest products utilisation (forest harvesting; forest-based processing industries; non-wood forest products and services; trade and marketing; efficiency in forest products consumption; and demand, supply, and scarcity).
- Socio-economic contributions of forestry (basic human needs; generation of employment and income and poverty alleviation; entrepreneurship; and people's participation).
- Institutional arrangements (institutional restructuring; changes in laws, rules, and regulations; planning, monitoring, and evaluation; and investment and financial matters).
- Human resources development (forestry education and training; human resources planning, management, and enhancement).
- Forestry research (silvicultural research; forest management research; forest products research; and economic and policy research).
- Public awareness and extension (public education; forestry extension; and role of NGOs).
- Co-ordination (inter-sectoral co-ordination; internal co-ordination; and conflict resolution).
- Sate of forest resource and development (assessments and reviews; monitoring and evaluation; and periodic revision of forest resource management and development plan).

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