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Forest property rights under nationalized forest management in Bhutan

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SUMMARY

Forest nationalization policies in Asia have often resulted in decreased local property rights over forests and users' short-term exploitative behaviour, leading to degradation of forests. Bhutan's centralized forest management structure was initiated with the Forest Act of 1969. This paper evaluates how nationalization of forests in Bhutan changed forest property rights and associated incentives and disincentives and management outcomes for leaf-litter forests (*sokshing*) and non-sokshing forests. Using the International Forestry Resources and Institutions (IRFI) research protocols, 12 sites across Bhutan's broadleaf zones were surveyed. Changes in forest property rights were analysed using Ostrom and Schlager's 'bundles of rights' framework. The forest nationalization policy changed the array of *de jure* rights that local people had over both traditionally community-used forests (the majority of forests) and small blocks of sokshings that were usually owned by a household and managed to produce valuable leaf litter for their agriculture livelihoods. There was more compliance with regulations in sokshing than in non-sokshing forests. Non-compliance of local people with forest conservation occurred in areas where the chance of being caught for rule breaking was perceived to be low or the costs of compliance were high. This was almost exclusively the case in non-sokshing forest in the form of widespread but low-intensity illegal tree cutting. The continuing significance of sokshing for agricultural livelihoods serves as a strong incentive for conservation of sokshings by rural people, even though the sokshings are under ultimate state control. The successful management of forests requires minimal difference between *de jure* policies and *de facto* practices for which rules that allocate property rights and the way those rules are enforced are important elements. Conservation and management rights of non-sokshing for communities would not only promote local stewardship, but also put the limited capacity of the Department of Forest to best use. Increased deforestation around villages may result, because modern development alternatives may make leaf litter insignificant for agriculture.

Keywords: incentives, institutions, sokshing

INTRODUCTION

Contemporary research has shown that property rights, whether legally or tacitly recognized by the state, are important components of sustainable use and management of resources by rural communities (Fisher 1990; Bartlett & Malla 1992; Nagendra 2002; Gautam *et al.* 2004; Nagendra *et al.* 2005). Rights to access, use, manage, protect and transfer resources make up the bundle of property rights of the person or community over that good (Schlager & Ostrom 1992). Although much of the literature points to legal (*de jure*) rights being essential for long-term sustainability in locally-accessed forests, in some cases the informal recognition (*de facto*) rights can maintain stability in those systems (Gautam *et al.* 2004).

When property rights of a person or community over a resource change through policy formulation or implementation, the incentives for long-term management may change as well. For example, if the entire array of property rights to traditional forest is stripped from a community that previously enjoyed complete ownership rights, then it is difficult for those users to perceive the security and exclusivity of future benefits. They are likely to have very little incentive to invest time and effort in management of the forest. In the absence of or lack of clarity in property rights, resources may be rendered open-access and vulnerable to degradation.

Despite evidence supporting the notion that providing well articulated and fair rights to traditional users is an important element of a national forestry strategy (Ostrom 1990; Asian Productivity Organization 1997), every south and south-east Asian nation has enacted policies that proclaim ultimate property rights (eminent domain) over forests. Familiar examples are India (1878 Indian Forest Act), Indonesia (1967 Basic Forestry Law No. 67), Nepal (1957 Private Forests Act) and Thailand (1913 Forest Protection Act). When these policies were enacted, they immediately transferred *de jure*, and in many cases *de facto*, property rights from local users to the state, leaving local people with no legal claim over traditional forests. These changes in property rights often resulted in revised incentive structures that became manifest in changing levels of accessibility and unsustainable resource-use patterns and conditions.

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It has been argued that these centralization policies have contributed to widespread degradation of forests due to loss of local property rights and associated lack of incentives for collective action. For example, lack of tenure was a major contributing factor to deforestation in both Thailand (Vandergeest 1996; Ma 1999) and Nepal (see discussion in Gilmour & Fisher 1991; Nagendra 2002). The loss of rights over resources may ultimately result in an open-access situation due to loss of incentives for management and more incentive for short-term optimizing behaviour (Hardin 1968).

In Bhutan, the *Thrimzhung Chenmo* (Supreme Law of Bhutan) of 1959 was drafted shortly after the formation of the National Assembly in 1953, and obliged households and communities to register their landholdings in the *thram* (national register). This included agriculture, as well as *sokshing* (traditional small plots of intensively managed forest) owned and used by households. Sokshings are still widespread throughout Bhutan, and provide a secure source of abundant high quality leaf litter for cattle bedding and production of manure that is ultimately applied to agricultural fields as a fertilizer (Dorji *et al.* 2003).

The Forest Act of 1969 (RGOB [Royal Government of Bhutan] 1969) legislated a fundamental change in forest rights and accessibility by transferring ownership of forests and forest produce, whether in reserved forest or on private land, to the government (Giesch 2000). The Act designated all forests as 'government reserve forest', and brought them under the purview and management authority of the central government. This includes sokshings and *tsamdrogs* (traditional grazing areas) (RGOB 1995). Thus, all sokshing and non-sokshing forests immediately became *de jure* government forests. The Act also required local people to obtain a permit from the Department of Forest to extract trees and products designated as 'Schedule I' (protected) species from the forest. In recognition of the dependence of rural communities on forest products, however, the Act provided some leverage to the rural populations to appropriate non-timber resources for subsistence needs (Ministry of Agriculture 2003).

Research has shown that local institutions that regulated access, use and management of forest resources existed in Bhutan before state intervention in forest management (Wangchuk 2001; Allison 2002). Thus, the Forest Act of 1969 made important changes to the pre-existing property rights, which could alter the incentives for long-term sustainable use, management and protection. However, no research has analysed the changes in property rights associated with forest centralization policy in Bhutan. In this paper, we analyse the changes in forest property rights resulting from *de jure* forest policy in relation to the *de facto* practices in the management of sokshing and non-sokshing forests. We ask which *de facto* and *de jure* property rights were modified with the 1969 Act, and what implications the changes have for the incentive structure for long-term management and conservation of forest resources in Bhutan?

METHODS

The study was focused on the middle Himalayan region of the Kingdom of Bhutan, altitudes of the villages ranging from 1300 to 2300 m. Six districts were chosen, in each of which the majority of forests were temperate broadleaf. In each of the selected districts, villages under each selected *Gewog* (sub-district) were listed and villages without broadleaf forests were eliminated. Subsequently, twelve villages were randomly selected for study (Fig. 1).

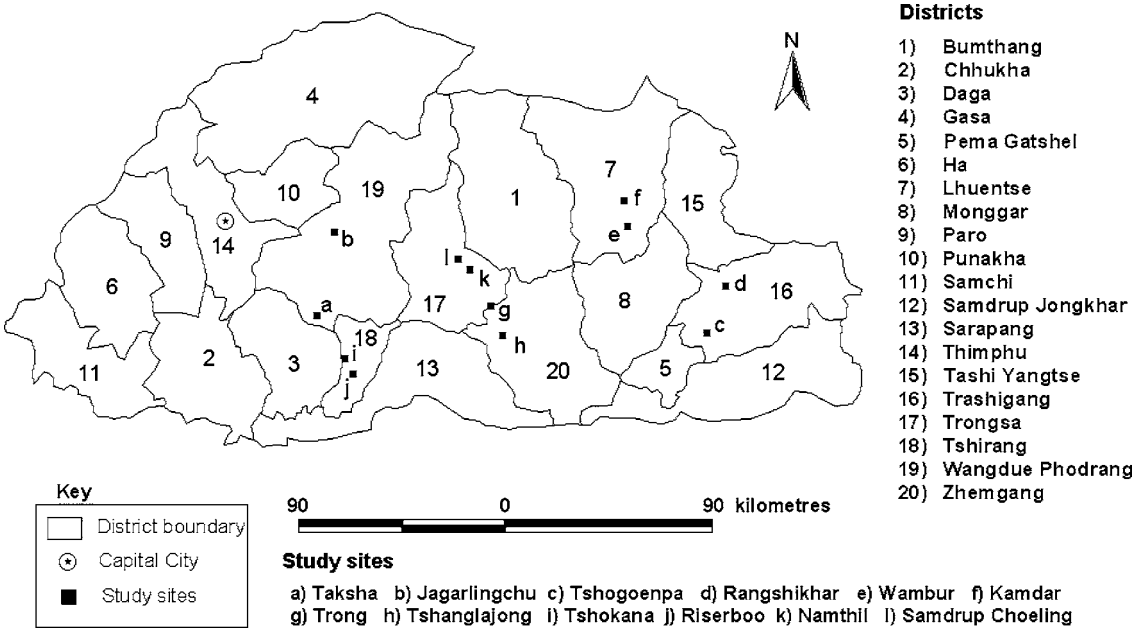


Figure 1 Diagrammatic map of Bhutan indicating the 12 villages numbered (a) to (l).

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Information on property rights was generated through use of participatory rural appraisal (PRA) tools, such as interviews and discussions with both groups and key informants in each of the 12 villages. Oral histories were documented in each village, supplemented with the limited but important literature on Bhutan's history. Patterns of forest use, institutional arrangements and traditional property rights structures (triangulating the PRA tools) were gathered using the International Forestry Resources and Institutions (IFRI) research strategy and instruments (Ostrom & Wertime 2000). In addition, the IFRI protocol included quantitative forest plots, of which 50 in sokshing forest (5.64 ha) and 180 in non-sokshing forest (1.57 ha) were randomly established and inventoried. Each plot had a radius of 10 m, within which the diameter and height of all trees at least 10 cm in diameter were measured and their species identified. Concentrically nested within the 10-m radius plots were 3-m radius plots, within which all saplings (2–10 cm in diameter) were surveyed, and 1-m radius plots, within which all seedlings and herbaceous species were surveyed.

We analysed the property rights regime using Schlager and Ostrom's (1992) 'bundles of rights' framework (Table 1), which defined property rights in terms of access (rights of entry to a resource), withdrawal (rights to withdraw resource), management (rights to regulate internal use patterns for improvement), exclusion (rights to determine who can enter) and alienation (right to sell or lease management and exclusion rights). We assessed the change in *de jure* and *de facto* property rights by determining which rights the communities and households enjoyed before and after the Forest Act of 1969 for non-sokshing and sokshing forests, a stratification reflecting the *de jure* classification recognized by the government since 1969.

We interpret the present-day impact of the 1969 Forest Act through the lens of incentives, which is the underlying calculus assumed to drive the decision making in rational entities (Gordon 1954; Baden 1998). We assume that an agreement between the *de jure* and *de facto* rights amounts to a positive incentive for compliance and long-term sustainability. However, a disagreement between *de jure* and *de facto* rights would lead to instability due to the lack of incentives for compliance and cooperation between local users and the state.

RESULTS

The Forest Act of 1969 (revised by the Forest and Nature Conservation Act of 1995) has brought about changes to the withdrawal and management rights, and completely removed alienation rights over sokshing and non-sokshing forests. The Act altered user rationality in withdrawal and management of forest resources. *De jure* and *de facto* property rights have changed in several ways since the enactment of the 1969 Forest Act (Table 2). Communities had no exclusive legal rights over surrounding forests while forest officials seldom visited the area to monitor compliance. Hence, rural households substantially enjoyed withdrawal of forest products just as they did before 1969, while the incentive to manage and protect the forest dwindled with the awareness that the resources

Table 1 Bundles of rights, definitions and associated positions (adapted from Schlager & Ostrom 1992).

Rights and definitions	*Positions*			
	Owner	*Proprietor*	*Claimant*	*User*
Operational level				
Access: the right to enter a defined physical property	√	√	√	√
Withdrawal: the right to obtain 'products' of a resource	√	√	√	√
Collective choice level				
Management: the rights to regulate internal use patterns and transform the resource by making improvements	√	√	√	
Exclusion: the right to determine who will have access right, and how that right may be transferred	√	√		
Alienation: the right to sell or lease either or both of the collective choice rights	√			

Table 2 *De jure* and *de facto* rights of communities over non-sokshing and sokshing forests before and after the Forest Act of 1969. *No *de jure* rights before 1969.

Rights	*Non-sokshing*			*Sokshing forest*		
	*Before 1969**	*After 1969*		*Before 1969**	*After 1969*	
	de facto	*de jure*	*de facto*	*de facto*	*de jure*	*de facto*
Access	Yes	Yes	Yes	Yes	Yes	Yes
Withdrawal	Yes	Restricted	Yes	Yes	Restricted	Restricted
Management	Yes	Restricted	No	Yes	Restricted	Restricted
Exclusion	Yes	No	Yes	Yes	Yes	Yes
Alienation	n/a	No	n/a	Yes	Yes	Yes

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around the community could at any time be allotted by the government to outsiders. However, we also found a variety of traditions, beliefs and locally-crafted rules that regulated withdrawal and management of sokshing and non-sokshing.

Withdrawal rights

Withdrawal rights refer to whether a person has the right to extract or use resources from the forest. The *de facto* withdrawal rights of community members to harvest products from sokshing and non-sokshing forests were complete before 1969; community members could cut trees, go hunting and collect other materials from the non-sokshing forest in order to fulfil subsistence needs. Villages enjoyed complete rights to craft their own withdrawal institutions as described by village members. The 1969 Forest Act and 1995 Forest and Nature Conservation Act imposed important restrictions on the kinds and amounts of materials that could be withdrawn from forests. Subsistence-oriented products such as dried fuelwood, leaf litter, grazing, stones, sand for building and water could be collected without a government permit. Hunting was prohibited except in the case of 'crop protection'. All trees and Schedule I species were protected and extraction required a permit from the government. The policy required a process of obtaining permits for forest products from the Department of Forest.

In the case of sokshing, the Act introduced a definition of sokshing that significantly reduced the owner's right to leaf litter only. Local people, in practice, enjoyed the rights to withdraw leaf litter as much as they did prior to 1969. However, extraction of other resources such as trees required the owner to secure a permit from the Department of Forest, which in reality was not in the priority of the sokshing owner.

However, in non-sokshing forest, the *de jure* requirements seemed to be less complied with in rural areas. Rather, local traditions, beliefs, and norms effectively restrained human activity in certain parts of the non-sokshing forests. In Taksha-Sili-Tsara, we found strong beliefs about the existence of forest deities and spirits that own forest resources such as trees, stones and water. A tradition of appeasing those forest deities by sacrificing chicken, sheep and oxen had been and still was being practised. Other than such traditional norms and beliefs, there were essentially no effective state-imposed restrictions on product withdrawal from non-sokshing forest.

The *de facto* situation for withdrawal of resources varied across the study sites. In most cases, the villages were located far from main permit-issuing authorities, in which case the process of applying and marking trees for timber and firewood proved tedious and costly. However, forestry personnel seldom visited these areas due to manpower constraints in the Department of Forest. We observed that rural villages tended to default rules such as felling of trees illegally (Table 3). Such illegal activities were driven by economic rationality of reducing cost on securing the permits while the probability of getting caught was low.

Table 3 The numbers of trees illegally cut in circular plots of 314 m^2 surveyed within non-sokshing forests.

Village forest	*Illegally felled trees (per 314 m^2)*
Langthel	15 stumps of trees
Langthel	10 stumps of trees
Langthel	15 recently felled tree stumps
Samdrupchoeling	18 felled tree stumps
Trong	6 felled tree stumps

Management rights

Total management rights, the rights to manipulate the forest to meet particular objectives, whether transformation (change of forest structure and composition through activities such as clear-cutting) or improvement (for example planting of useful species) were enjoyed by individual households and communities at large in both sokshing and non-sokshing forests prior to 1969. The high forest:people ratio did not warrant any management of the non-sokshing forests. Rather, transformation through activities such as cattle grazing and shifting cultivation (*tseri*) occurred for mere subsistence needs and without a management objective. It was unnecessary to incur a management cost when the resources were abundant. However, households and communities had the option to transform the non-sokshing forests if they wanted to. Sokshings, on the other hand, were transformed from natural forests. This required communities to nurture and manage sokshing forests with appropriate selections of desired species and silviculture practices for production of leaf litter. This aspect of sokshing was well recognized by the state as an important element of rural agriculture and livelihood for which they were registered (household thram).

The 1969 Forest Act and the 1995 Forest and Nature Conservation Act substantially narrowed the *de jure* management rights of communities over both forest types. Government endorsement was then required for any significant improvement or transformation activities in the forest. In terms of transformation, the Act prohibited any transformation from forest to non-forest, except under circumstances where individuals directly applied to His Majesty the King for a 'land *kidu*' (land grant) for private purposes. Forest transformation requirements related to public projects were usually endorsed by the Ministry of Agriculture, non-sokshing forests and government land devoid of tree cover generally being considered for transformation to other uses.

Traditional lower-intensity activities to maintain *Quercus*-dominated highly productive sokshings, such as seedling removal and pruning, were not expressly forbidden by government policy. Communities could continue to actively manage sokshings in the traditional fashion and were allowed to do so by *de jure* contemporary forest policy. However, major transformations such as felling of trees or change in land use were forbidden. This restriction conformed to the *de facto* practices where traditions and locally crafted rules existed to regulate sokshings. Leaf litter was still a primary input to

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fertilizer production and it was in the interest of the farmers not to transform sokshings or fell trees in them.

Exclusion rights

Prior to 1969, communities rarely practised exclusion or alienation rights in non-sokshing forests because of abundant resources. However, in the case of sokshing, village norms, traditions and the early 1950s registration of sokshing as part of household land holdings provided households with ownership rights over sokshing.

After the 1969 Forest Act, communities had no rights to prevent an outsider from extracting resources from their village forest. The Department of Forest assumed full *de jure* powers to allocate forest resources from any non-sokshing forest in the country, thereby undermining the traditional *de facto* exclusion rights over non-sokshing forests that communities enjoyed prior to 1969. In the context of sokshings, through the definition of sokshing, the Acts retained the *de jure* exclusion rights of communities over sokshings while removing the alienation rights. However, this *de jure* change had little significance for the rural communities, as it was fairly compatible with *de facto* practices. With sokshings as the major source of manure for agriculture, the Acts strengthened the interest of rural households in protecting these forest areas from outside users and, at the same time, it was neither feasible nor in their interest to sell sokshings. This *de jure* exclusion right of communities over leaf litter was automatically violated when the government asserted its *de jure* rights over the sokshing land. For example, in the village of Taksha-Sili-Tsara, the government took over sokshing land belonging to a few households to expand the primary school, thereby intruding upon the households' rights over leaf litter in the sokshing.

DISCUSSION

Bhutan's nationalization of forests in 1969 reflects the typical perception of many Asian governments in managing forests through direct state control. It is clear from our results that the nationalized forest policy limited the *de jure* rights of households over non-sokshing and sokshing forests. The important aspect of the policy implementation was the change in forest property rights and the persistence of illegal *de facto* interactions between people and non-sokshing forest. The incompatibility between the *de jure* requirements of the forest Acts and the *de facto* practices at the local level was evident and this was a major constraint of the nationalized forest management system. As in the case of many other countries, Bhutan's Department of Forest was limited in its management of the country's extensive forests; Department personnel seldom visited rural areas. However, local norms, traditions, beliefs and practices that constrain extraction activities from the forest areas existed here as with 'sacred forests' in some other societies (Gadgil & Chandran 1992; Byers *et al.* 2001).

Considering the RGOB's priority to maintain a minimum of 60% forest cover in perpetuity, centralized forest management is evidently not the right approach. Experiences in Asia and Africa suggest that regardless of the *de jure* property regime, non-existence of rule enforcement institutions and mechanisms could make forests open access. Such a situation of open access appears to exist in the non-sokshing forests of rural Bhutan, where foresters seldom monitor compliance. While we have observed a situation of free access and withdrawal of resources in rural areas, the low population and market inaccessibility no doubt keep subsistence demands low. However, with increasing population and market accessibility, the increasing demands could severely undermine the regeneration capacity of forests. Banana and Gombya-Ssembajjwe (2000) highlighted the need to pay attention to both rules that allocate property rights and the way those rules are enforced if forests are to be managed successfully. State-centred policies could potentially fail due to high enforcement costs.

The neighbouring mountainous country of Nepal is an example where nationalized forest management failed to protect the country's forests. The loss of local rights and the ineffectiveness and biased law enforcement by the forest department after the Private Forest Nationalization Act of 1957 contributed to rapid deforestation in Nepal (Gilmour & Fisher 1991). Researchers argued that local communal control and customary rights and duties over forest resources became irrelevant, their legal authority to protect forests through their traditional management system was undermined and people's attitudes towards forests as government property seriously eroded their motivation to protect local forest resources (Varughese 2000). We do not argue that forest nationalization in Bhutan has led to indiscriminate cutting of forests, but we deduce that rural people in Bhutan tend to default rules and interact with non-sokshing forests the way they want because it is economically rational to do so. Rural farmers incur a high cost with compliance while the probability of getting caught is low. More time and effort was required on the part of rural farmers to secure permits compared to semi-urban areas because of the distance to the issuing authorities. This is clearly linked to the constrained capacity of the Department of Forest to effectively carry out its responsibility of enforcing state authority over forests, especially in rural areas; hence, the incentive for rural people to default on rules. Huge manpower and resources would be required on the part of the Department of Forest to bridge the gap between *de jure* forest regulations and *de facto* practices.

Given this default behaviour of rural farmers, the severe degradation of forests around rural villages is expected, and Bhutanese farmers would adopt techniques that follow an 'optimal foraging' pattern; in other words the community would tend to maximize returns by accessing and withdrawing forest resources nearest to their villages (Schweik 2000). Having observed that sokshings were well protected and generally located around villages, the sokshing owners and others were deterred from felling trees in sokshing. *De jure*

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recognition of household rights over leaf litter and inherited traditions enable locals to assert rights over their sokshings and monitor intruders. Further, the interest of sokshing holders to maintain trees for leaf litter, the proximity of sokshing to households and the respect for tradition and norms make monitoring of sokshings easy. This means the sokshing owners and others invest more time and energy to venture further into the forest for wood. As a result, fairly good forest cover is maintained around villages with traditional sokshing practices. This is an example of how institutional arrangements influence human foraging patterns and their efforts for natural resource conservation (Schweik 2000).

CONCLUSIONS

Bhutan's Forest Act of 1969 has resulted in two outcomes related to non-sokshing and sokshing forests. For non-sokshing forests, there has been a loss of community and individual rights, leading to non-compliance, especially in rural areas because of high costs involved in conformance to the new property rights regime. For sokshings, the Forest Act reduced the sokshing 'owners' to 'proprietors', and these lost alienation rights that they exercised prior to 1969. Although such changes in property rights have not led to gross mismanagement of Bhutan's forests, increasing economic development will require careful manoeuvre on the part of the government to fulfil its commitment to maintain a minimum of 60% forest cover in perpetuity.

While the well regulated market for forest products (for example the national timber market) may not be a problem, continued market-driven economic development and political democratization will potentially influence rural areas to increase demands for forest resources. It is important that the incompatibility between *de jure* policies and *de facto* practices be minimal if forests are to be managed successfully. For this, rules that allocate property rights and the way those rules are enforced are important elements.

Property rights in Bhutan are a central issue in maintaining the appropriate incentives for people to conserve forests. People dependent on the resource must be incorporated into forest management and conservation strategies, even if the forest is 'state' owned. One option for non-sokshing forest conservation is to implement a formalized community-based forest management strategy that guarantees long-term tenure. We recommend handing over of traditional non-sokshing forests around villages to communities for management. This would promote local stewardship and strengthen the long-term interests and responsibility of communities towards sustainable forest management and conservation. Local needs for timber and non-timber forest products could be met through community institutions and mechanisms of enforcing access, withdrawal, management, exclusion, and alienation rights.

Continued increase in population and market accessibility and the limited management capacity of the Department of Forest could potentially lead to indiscriminate felling of forests. The significance of sokshing for agriculture may also dwindle with the shift away from subsistence agriculture; modern agricultural inputs such as fertilizers may undermine the role of leaf litter. In the future, it may no more be in the interest of sokshing proprietors to monitor and protect sokshing trees, since households have no *de jure* rights over sokshing trees and land, rendering sokshings vulnerable to alternative uses and 'optimal foraging' habits of the users. Policies that emphasize deletion of registered sokshing from the household land register (thram) the moment sokshing forests become devoid of tree cover should be implemented.

The effectiveness of the Department of Forest as the policy and law enforcement agency needs to be seriously considered. For the effective implementation of the nationalized forest policy, human and financial resources will be required. Issues relating to the low capacity of the government to monitor compliance can be overcome by relinquishing the management rights of at least part of non-sokshing forests to communities. The capacity and resources of the Department of Forest can accordingly be directed towards providing technical assistance to communities, and protection of uninhabited forests and protected areas for sustainable production of timber and non-timber products and biodiversity conservation, respectively.

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