

Institutional arrangement and typology of community forests of Meghalaya, Mizoram and Nagaland of North-East India

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Received: 2011-12-21

Accepted: 2012-05-16

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Abstract: Most community forests in hill regions of northeast India have been managed by traditional local institutions for centuries and most of these institutions remain functional even today. Higher forest coverage on private and community lands as compared to government land indicates that traditional institutions effectively manage community forests in the region. The present study was conducted through a survey of literature and field work using participatory research tools viz., PRA exercises, group discussions and questionnaire interviews with key informants in northeast India. We categorized the institutions involved in conservation and management of forests into three major types: traditional, quasi-traditional and modern. Traditional institutions with hierarchical structure were found in all states and are intact and functional in the state of Meghalaya. Quasi-traditional institutions, a blend of traditional and modern institutions were prevalent in Nagaland while modern institutions have almost replaced traditional institutions in Mizoram. We recorded at least eleven types of community forests viz., group of village forest, village forest, restricted forest, sacred forest, clan forest, cemetery forest, regeneration forest, bamboo forest, recreation forest, village reserved forest and medicinal plantation in villages of three states. The tribal people, through long-term trial and error experiments, have developed an elaborate, functional and generally democratic system of conservation and management of forests and associated natural ecosystems. Several forest and natural resource management lessons can be learnt from the institutional structure and decision making system of the evolving and dynamic institutions of tribal communities of the region.

Keywords: sustainable; natural resources; community institution: tribal

The online version is available at <http://link.springer.com>

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Introduction

For generations, humans have relied on forests not only for their livelihoods, but also as an integral element in their cultural, spiritual and social systems. Nationalization of forests alienated the people from forests leading to massive deforestation primarily for converting forests to other land uses (Schulte and Sah 2000). In developing countries like Nepal, community forest management has emerged as the dominant approach, primarily due to management failures of central governments (Pandit et al. 2008). Here, community forests have succeeded in improving forest condition and enhancing livelihoods of local people (Agarwal and Chhatre 2007; Agrawal and Ostrom 2001; Chakraborty 2001; Webb and Gautam 2001). Similarly, the implementation of Joint Forest Management and decentralization of forest policies have proven successful for conservation and management of community forests in India (Sudha et al. 2004). In hill regions of northeast India, community forests are conserved by local people based on the principles of providing opportunities for extraction of goods for legitimate needs and ensuring the continued existence of forest resources for future (Chatterjee et al. 2000). There is great variability in management practice, which has evolved under different biophysical and cultural environments (Nongkynrih 2001). There is a general lack of scientific research on the forest management practices of traditional and tribal societies of northeastern India but a few studies have investigated sacred groves, home gardens and agroforests (Tiwari et al. 1995, 1998). Local people in several states of northeast India have taken initiatives to protect and manage their forest resources. They have formulated rules and regulations based on the socio-political and economic environment of their village. Under customary law, the forests are classified into different types depending on their intended use. The pattern of ownership of community forest is also very complex and diverse (Tiwari et al 2010; Kumar 2008). This research aimed to document the structure and functioning of local traditional institutions involved in forest management, and analyze the typology of community managed forests with the

objective of understanding this age-old system and learning lessons for the management of forests in a modern context.

Materials and methods

Study area

The Indian states of Meghalaya, Mizoram and Nagaland are known to have high ethnic and biological diversity, and are part of the Indo-Burma biodiversity hotspot (Myers et al. 2000). The physiography of the region is undulating and mountainous with average elevation ranging from 1,000–2,000 m above mean sea level. Maximum temperature is 30 °C in summer and minimum temperature is 5 °C in winter (Fig. 1). The climate of the region is directly influenced by the southwest monsoon and northeasterly winter winds. Most forests of these states are controlled by local communities. The extent of forests under community control in Meghalaya, Nagaland and Mizoram was 88.16%, 93.5% and 31.35% respectively (FSI 2009). The study was conducted in ten clusters of villages in three states covering nine tribes, viz., Khasi, Garo, Jaintia, Lushai, Mizo, Konyak, Ao, Chakesang and Sumi (Table 1). In Meghalaya, we surveyed nine villages viz., Mawkyndeng, Raliang Mulum, Mawkohphet, Pyndeng, Mawlieh, Domjyrti, Jenggitchakgre and Sasatgre. Similarly, in Nagaland we surveyed nine villages viz., Mopungchuket, Longkhum, Monsenyimti, Longwa, Mon, Wakching, Enhulumi, Tetsumi and Lumami and in Mizoram, four villages viz., Lengte, Rawpuich-

hip, Lawngtlai and Keitum (Table 1).

Methods

We analyzed both primary and secondary data. We reviewed literature on forest management types, and on local institutions involved in forest management in the states of Meghalaya, Mizoram and Nagaland. Three principal tribes of Meghalaya namely, Garo, Khasi and Jaintia were selected for detailed survey. The Garos inhabit the East Garo Hills, West Garo Hills and South Garo Hills districts. The Khasis predominantly inhabit in the East Khasi Hills, Ri Bhoi and West Khasi Hills districts while the Jaintia Hills district is inhabited by the Jaintia Tribe. In Mizoram we studied two tribes, Mizo and Lusei (often considered a sub-tribe of Mizo). Mizos are a close-knit society with no class distinction and no social discrimination. About 90% are cultivators and the village functions as a large family. Shifting cultivation is the predominant method of agriculture in most parts of Mizoram. All ethnic Mizo and Lusei people are Christian. In Nagaland, we studied four tribes, Ao, Konyak, Chakesang and Sumi. The main territory of the Ao tribe is Dikhu Valley in Mokokchung district. Chakesang is also one of the major tribes in Nagaland. Most villages inhabited by this tribe are located in the Phek district and Pfutsero and Chozuba subdivisions of Nagaland. The Sumi tribe mostly inhabits central and southern regions of Nagaland. Zunheboto is the district of the Sumi people however; they also live in Dimapur, Kohima, Mokokchung and Tuensang districts.

Table 1. Tribes and villages surveyed for primary data collection

State	Cluster	Tribe	District	Villages
Meghalaya	1	Jaintia	Jaintia Hills	Mawkyndeng, Raliang and Mulum
	2	Khasi	West Khasi Hills	Mawkohphet, Pyndeng, Mawlieh and Domjyrti
	3	Garo	West Garo Hills	Jenggitchakgre and Sasatgre
Mizoram	4	Lushai	Mamit	Lengte and Rawpuichhip
	5	Mizo (Lai)	Lawngtlai	Lawngtlai
	6	Lushai	Serchhip	Keitum
Nagaland	7	Ao	Mokokchung	Mopungchuket, Longkhum and Monsenyimti
	8	Konyak	Mon	Longwa, Mon, and Wakching
	9	Chakesang	Phek	Enhulumi and Tetsumi
	10	Sumi	Zunheboto	Lumami

The primary data on traditional institutions and typology of community forests were collected from 10 districts inhabited by the above described 9 major tribes in over 22 villages. Interviews were also held with officials of the State Forest Department, Autonomous District Councils and traditional tribal heads. We used participatory research tools viz., PRA exercises, group discussions and interviews with the head of the selected households for collection of data (Mukherjee 1998). Interviews were designed to provide details on forest type, management practices, institution(s) involved in management, and ownership. We surveyed a random sample of a minimum of 30 households in each cluster.

Results

Traditional institutions governing forests

The organizational set up of traditional institutions in northeast India differs between ethnic tribes, sometimes even within a tribe from one region to another, depending upon the local biophysical setting and socio-economic conditions. These traditional institutions are the custodians of all natural resources including forests in their territorial jurisdictions. The structure and functioning of these institutions are briefly discussed hereunder.

Traditional Institutions in Meghalaya

Three traditional institutions associated with three tribes *viz.*, Khasi, Garo and Jaintia were recorded in Meghalaya. The traditional institution of the Khasi tribe was more elaborate than that of the Garo and Jaintia tribes in terms of structure and composition. A typical traditional institution in the Khasi community constitutes larger territory base (the Hima) which is controlled by the Syiem. The Syiem is the head of the state (i.e. Hima) and looks after the general administration and management of forests and other natural resources directly under his control. The head of the village council is known as Rangboh Shnong, Sordar or Myntri Shnong who is responsible for governance of forests and other common property resources of the village. The clan chief has its own authority and functions within clan affairs regarding matters concerning the village. All affairs pertaining to the forests owned by the clan are looked after and controlled by the head of the clan and the elders. The family comes under the clan where the father plays a very important role in decision making

though the lineage is through the mother. The head of the family is represented in the village council.

Among the Garo tribe, the land and all land based resources belong to the clan and are known as A'king land that is under the custody of a female head, locally known as Nokma. The husband of Nokma acts on her behalf in all clan decision-making (Goswami and Majumdar 1972). However, the Nokma has no authority to take decisions on the land and its use as these decisions are made collectively by the clan representatives (Chra). The Chra consists of the maternal uncle and brothers of the Nokma. The Nokma has no authority to sell any part of the territory to another village or person without the permission of the Maharis in the village. The institution of Mahari consists of the members closely related through common motherhood that are collectively responsible for the conduct and security of the members and protection of family property (Tiwari et al. 1998). Thus all natural resources of the village are administered by people living in the village and decisions are made by an institution that collectively decides for the good of all.

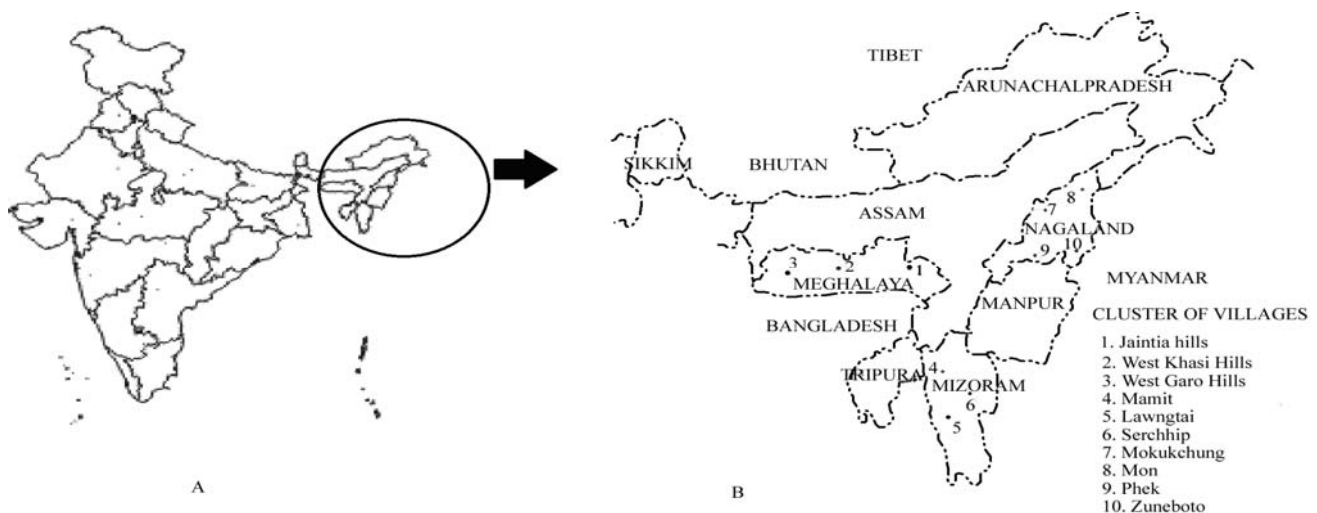


Fig. 1 Location of the villages in Meghalaya, Mizoram and Nagaland. A. Map of India; B. Map of North East India.

In Jaintia hills, the villages clustered in a particular area are recognized as a single political entity known as the 'Elaka' (province). The Chief of the Elaka is called 'Doloi'. Doloi is elected for life from amongst the senior members of a particular clan and the rule is strictly followed. The Doloi can be removed from his office by his people for misrule or corruption. Doloi is assisted by the U Basan (elder) who is also elected for a life term. The number of Basan depends on the size of the Elaka. The institution of Doloi is the custodian of all natural resources including forests of the Elaka.

Traditional institutions in Nagaland

In Nagaland, we documented four major traditional institutions of the Konyak, Ao, Chakesang and Sumi tribes. Traditional institutions in the Konyak and Sumi tribes were similar in structure and were more complex than the traditional institutions of the other two tribes. The Konyak community mostly inhabit Mon district in northern Nagaland, also called the land of Anghs. Un-

der the Chief Angh, each village has smaller Anghs who are responsible to rule and protect the people and property of villages. Villages also have village councils, formed by village elders, who represent the various clans and Khels (sectors). In every village the land/forest is owned by the Chief Angh. However, Morung/Khel or clan also owns certain parcels of land/forest called "Wan" within which individually owned plots may exist. Morungs work like a branch office of the village administration. Certain rules and regulations related to the welfare of the people and management of natural resources are tackled by the Morung authority. Every Morung also make rules to protect the forest of their respective Khels. The Chief Angh and his council appoint Anghs in every Morung. Resolution of a dispute concerning the ownership of land, forest, rivers or other such properties among the clans is first attempted among the clans. If the problem cannot be solved among the clans, the case is taken to the 'baan' court (Khel) and ultimately to the village court where the final judgment is passed by the Angh. We noted, how-

ever, that in Wakching village the Angh did not have the authority to pass final judgment, similar to most villages inhabited by the Konyak tribe. In this village, final decisions were passed by the village council.

The Sumi Naga tribe has a traditional hereditary chieftainship (Akukao) system. Akukao is succeeded by his eldest son. The chief (Akukao) owns and controls the land and its resources. The powers of the chief are confined to the village territory. Unlike the Konyak chief, Sumi chief have no subordinate chief. He allots land to the landless for cultivation. The opinions of the chief have precedence over the elected members of the village council. In some cases the chief is made chairman of the village council. ‘Gaon buras’, a relatively recent post in the institutional arrangement, are village elders nominated by the village councils. The number of Gaon buras in a village depends on the total population and number of localities. The institution of Gaon buras is becoming more important in governance and administrative system of the villages.

In the Ao tribe, the most important traditional institution is Putu Menden which functions as a village council. It comprises of clan elders and is empowered for internal administration, natural resource management, security and general welfare of all community members. The Putu Menden rules over the village state republic for 30 years, until the next generation takes over. It has representation of all clans inhabiting the village. The function and structure of the ‘Putu menden’ may vary from village to village but within a similar norm and structural framework. All matters relating to control and regulation of the natural resources are under the authority of the *Aola*, who functions as chairman of the village council.

In the traditional institution of Chakesang tribe, the village priest/Mewu was the head of administration. Today the Village Council is responsible for administration of natural resources and implementing village laws and regulations. The council is headed by the Chairman and its members are clan elders.

In Nagaland, the government has constituted Village Development Boards (VDB) in each village with a management committee including members from the Village Council (the traditional institution at village level). The management committee thus functions as a liaison and link between the traditional institution i.e. Village Council and modern institution of VDB. This committee is a quasi-traditional institution that facilitates flow of funds from government and financial institutions by meeting their legal requirements, while enjoying the trust of the traditional institutions (Karmakar and Banerjee, 2009). This new institutional arrangement has performed effectively for several decades because it includes traditional institutions in decision making while fulfilling the requirements of state and union governments.

Traditional and modern institutions in Mizoram

Traditional forest management in Mizoram was administered by the ‘chieftain’. The chief had absolute decision-making authority. The Chief (Lal) was the supreme head of the village council. Below the Chief were the Khawnbawls or the Counsellors selected by the Chief. Under the Act of 1956, the Chief was made

the Chairman of the Village Authority without any discretionary authority. Another important official of village government was the Val Upa (youth commander). The Val Upa operated through the organization of Zawlbuk (Bachelor Dormitory) by imparting to male youth strict discipline and rigorous training in the art of tribal warfare and defense. This institution no longer exists in any part of Mizoram but is now embedded within the Young Mizo Association (YMA), Young Lai Association (YLA) and the village council. The YMA and YLA are the modern form of the Val Upas, representing this earlier traditional institution. These institutions exist in most of the villages to lead and command youth in social activities. As people depend on resources derived from village forests, common land and private land, the village level YMA and YLA play an important role in management of common property resources. YMA branches take the initiative for creation and conservation of forests with the support of the village councils. YLA has taken responsibility for management of community forests in collaboration with the village council in the Lai Autonomous District Council.

Typology of Forests Governed by Traditional Institutions

Based on the management rules, institutional organization intended use, and management practices and ownership, eleven types of forests were recorded in the villages surveyed in the study. A brief description of different types of forest governed by the traditional tribal institutions is given below:

Group of village forest (Raid forest) of Meghalaya

This type of forest was found in clusters 1 and 2 in Meghalaya. The forests are jointly owned by a group of contiguous villages. The area under this type of forest is generally large and overlaps a number of villages. These forests are managed by a council comprising the head of the group of villages (Syiem Raid or Sordar in the Khasi tribe and Doloi in Jaintia tribe) as chairman and the headmen of all the villages within the territory (Raid) as members. All inhabitants of the territory have usufruct rights for collection from these forests.

Village forest

Village forests were found in all 22 surveyed villages. They are called by different names by different tribes (Table 2). The area under this type of forest covers 20–70 ha. In most villages, collection of timber and non-timber forest products (NTFPs) such as fuel wood is restricted to personal use only. Some villages have more than one village forest. The village council has the responsibility to ensure sustainability of the forests and equitable sharing of benefits. In most village forests, tree can be felled for construction of houses and other community uses with prior permission from the village council or traditional institutional head like the Angh (Konyak), Aola (Ao), Doloi (Jaintia) of the tribe. These forests are meant for supply of daily needs of the people and are often called “supply forests” (Tiwari et al. 2010).

Restricted forest

This type of forest was found in cluster 2. Locally referred to as a

Law Adong, it is either under the control of a particular village or under the control of a Raid (group of villages). This category of forests is similar to village forest in terms of overall management. The only difference is in the degree of protection. These forests are given a higher degree of protection, and access to forest resources is restricted. They are usually small and are reserved particularly for the poorer families in the village and for some occasional needs by the village as a whole. Extraction of timber and fuel wood is usually restricted from these forests, but there are no restrictions on collection and extraction of mushrooms, edible fruits and vegetables if done without affecting the health of the forests. At Mawkohphet village, these forests are managed by the Myntri Shnong (village elders) under the overall supervision of the village council.

Sacred forests/groves

These are forest patches maintained for religious purposes. The ownership and management of sacred forests may reside with

individuals, clans or village councils. Sacred forest was found in all three clusters of Meghalaya and is named Khloo U Blai, Law Kyntang and Asong Khosi in Jaintia Hills, Khasi Hills and Garo Hills, respectively. Sacred forests are managed by religious heads or persons to whom the religious ceremonies for the particular locality or villages are entrusted in accordance with customary practice (e.g. Lyngdoh in Khasi tribe and Dolo in Jaintia tribe). Sacred forests are mostly primary forests and are well preserved and rich in biodiversity. The size of sacred forests in the study areas varied from a grove of a few trees to more than 100 ha. Tiwari et al. (1998) reported that sacred forests serve as homes to many medicinal and aromatic plants and also as repositories of several endemic and endangered plants. There were instances where sacred groves in Nagaland were used for worship and were preserved untouched. People even practiced offering of animals and eggs as sacrifices to the spirits of the jungle, but with changing beliefs and religion these practices are increasingly uncommon (Lucy and Jehol 2009).

Table 2. Management institutions, degree of protection and uses of forest types recorded in Meghalaya, Mizoram and Nagaland.

Cluster	Forest type	Local name	Size (ha)	Management institution	Degree of protection	Access to forest resources	Shifting cultivation	Collection of timbers	Collection of NTFPs	Collection of fuelwood	Hunting	Grazing
1	Raid forest	A1	35-50	Group of villages council	Low	All	Allowed	Allowed	Allowed	Allowed	Prohibited	Allowed
2	Village forest	A2	20-27	Village council	Low	All	Allowed	Allowed	Allowed	Allowed	Prohibited	Allowed
3	Restricted forest	A3	4-10	Village council	High	Prior permission	Prohibited	Prohibited	Allowed	Prohibited	Prohibited	Prohibited
4	Sacred forest	A4	1-100	Village council	Very high	None	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
5	Clan forest	A5	5-20	Clan council	Very Low	Clan members	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed
6	Cemetery forest	A6	1-30	Church	High	All	Prohibited	Prohibited	Allowed	Prohibited	Allowed	Prohibited
7	Regeneration forest	A7	3-5	Village council	Very high	None	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
8	Bamboo Reserve	A8	10-15	Village council	Low	All	Prohibited	Allowed	Allowed	Allowed	Prohibited	Allowed
9	Recreation Forest	A9	10	Village council/YMA	High	None	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
10	Reserve Forest	A10	5-10	Village council/YMA	High	Prior permission	Prohibited	Allowed	Allowed	Allowed	Prohibited	Prohibited
11	Medicinal Plantation	A11	50	YMA/YLA	Very High	Prior permission	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited

Notes: A is Ao, C is Chakesang, Kh is Khasi, Ko is Konyak, J is Jaintia, G is Garo, M is Mizo. A1 is Law raid (Kh); A2 is Law shnong (Kh), Khloo chnong (J), Songni borung (G) Ewulu (C); Arem (A), Khloo raid (J); A3 is Law adong (Kh); A4 is Law kyntang (Kh), Khloo U Blai (J); Asong kusi (G). A5 is Law kur (Kh), Khloo kur (J); Khel forest; (Ko); Senuwu (C); Kidong Lu-Arem (Ao). A6 is Law balang (Kh); Khloo Balang; (J). A7 is Champe. A (G). A8 is Wa. Grin (G). A9 Intihlinna (M). A10 is Ngaw Hak (M). A11 is Dandawi (M).

Clan forest

These types of forest were recorded in clusters 1, 2, 8 and 9. At times, more than one clan inhabited a village and each owned a patch of forest. Some clans may own forests located outside their village. For example, in Domjyrti village, clan forests belonging to clans Jyrwa, Lyngdoh, Kharwar and Nongsiej were recorded. All members of the clan are entitled to a share of the benefits derived from the use of these forests. The management of clan forests is the responsibility of the whole clan. Collection of timber is permitted only for households belonging to the particular clan but all village inhabitants are allowed to collect NTFPs for personal (non-market) consumption.

Cemetery forest

These are basically forests owned and maintained by village churches. The main purpose of these forests is for cremation of dead bodies. The cemetery forests are generally small in area (few hectares) but larger cemetery forests are not rare. For example, the cemetery forest of the Catholic Church in Mawkyndeng village of Jaintia Hills covers an area of about 30 ha. The Khasi and Jaintia tribe call them Law Balang and Khloo Balang, respectively. Cemetery forests are usually gifted by individuals or clans to the church or are bought by the church. The church regulates the use and access to forest resources. In most cases, people have free access to collection of NTFPs.

Regeneration forest

Regeneration forests were found only in cluster 3 and are locally known as Champea. Regeneration forest is managed by the Nokma, the traditional chief of Garo tribe. Extraction of trees is not allowed from this forest. However, NTFP collection for personal consumption is allowed.

Bamboo reserve

Bamboo reserve forest was recorded in clusters 3 and 4 where village councils or Nokma (Garo Hills of Meghalaya) and YMA (Mamit district of Mizoram) manage the forests. The villagers have full access to the bamboo reserve and collect bamboo for bonafide needs such as construction of houses or temporary sheds.

Recreation forest

Recreation Forests were seen in Mizoram. The YMA is taking a leading role in conservation and maintenance of such forests. Rawpuichhip Village (cluster 5) has taken up recreation forestry and is presently maintaining about 10 hectares of recreation forest. No trees or other forest resources are allowed to be extracted from this type of forest.

Village reserved forest

This type of forest was seen in Mizoram. The forests are reserved by the people and are not legally or statutorily gazetted by government. Most village reserved forests were formerly safety and supply forests (Malhotra 1990). These forests are completely under the control of village authorities. The main purpose of the reservation of this forest is retaining of green cover for environmental benefits. Extraction of goods is strictly prohibited. In Lengte village, the reserved forest is under the authority of the YMA branch of Lengte village. The Reserved Forest of Keitum village is under the authority of the Village Council, however, the management rests with the YMA. The YLA Branch of Lawngtlai AOC Veng (Lawngtlai District) manages village reserve forest of Lawngtlai.

Medicinal plantation

The Central Young Mizo Association (CYMA) has established two Medicinal plantations of 50 ha each in clusters 5 and 7 for *in-situ* conservation of medicinal plants. These Medicinal Plantations are solely owned and created by the CYMA mainly for preservation of medicinal plant germplasm for future. The people living in the proximity of the plantation have no access to these resources.

Discussion

The hill regions of northeast India, predominantly inhabited by tribal communities, have a long tradition of community-based forest management. Traditional forest management practices vary from one community to the next, even from village to village within one community. As a rule, the NTFP resource used

by the poor (bamboo shoots, wild edibles, medicinal plants, fuel wood, thatch grass and fodder) are collected for bonafide use of the people living the territorial jurisdiction of the traditional institutions. Forest resources cannot be exploited for commercial purposes in all community-owned forests without prior permission of the traditional authority empowered for granting the permission. This ensures equitable sharing as well as sustainability of the forest resource. Logging, fishing, cultivation and hunting are prohibited by the traditional institutions, except in case of Raid forest of clusters 1 and 2 where shifting cultivation is allowed for poor people with permission of the village durbar. Collection of timber is also allowed for domestic uses with prior permission in Raid forest and village forests. Sacred forest enjoys the highest degree of protection, since no extraction of produce or activity of any type other than worship is allowed in this forest (Table 2).

These community based regulations and management practices have been in existence for many centuries and certainly long before the introduction of modern forest management in India in 1876. We observed that rules and regulations for the management of community forest depend on socio-economic parameters as well as resource availability at a given site. These forest management practices are based on traditional forest knowledge evolved over generations by the communities for enhancing the sustainability of forests and forestry sector (Tiwari et al 2010). The decision-making systems of these traditional institutions are more equitable and participatory and therefore generally superior to modern institutions established by Government of India under the present dispensation of joint forest management (Tripathi and Barik 2004).

The Khasi, Garo and Jaintia tribes of Meghalaya have a tradition of forest conservation which is passed on from generation to generation in the form of beliefs and customs. Maintenance of sacred forests and restricted forests (Law Adong) has been in vogue since time immemorial (Gurdon, 1975). Tiwari et al. (2010) reported that traditional management practices of these forests has not only helped to conserve forest resources as evident from the presence of large patches of well protected forests (for example 700 ha village protected forest in Pynursla) and ensuring its sustainable use, but it has also helped to perpetuate a common good that serves as a 'safety net' for the communities. More than one category of forest has been recorded within the boundary of a single village. It is inferred that over time, these communities have evolved a system of combining forest conservation and sustainable use at a micro level unlike many national or international initiatives that aim to meet these requirements on national or global scales.

In some Nagaland tribes, traditional institutions have been merged with modern institutions to facilitate the flow of funds from government and to comply with requirements of contemporary law. The traditional heads/chiefstains of Aola, Angh and Akukao of Ao, Konyak and Sumi communities have begun to function along with the village council (a modern institution in these tribes) and sometimes the traditional heads are appointed chairman of village councils. In many villages, the authority of the traditional chiefstains has been transferred to the village coun-

cil. This amalgamation of traditional with modern institutions has given way to emergence of quasi-traditional institutions that serve the purpose of the institutions while promoting harmonious relations between modern and traditional institutions. These new institutions are enabling external interventions in the form of management, technology and finances. As a result, externally aided projects related to forestry and natural resource management have been successfully implemented in Nagaland. Examples include the NEPED project of the Canadian International Development Agency and the Sustainable Land and Ecosystem Management Project in Shifting Cultivation Areas of Nagaland for the Livelihood and Ecological Security project of UNDP.

We observed the involvement of modern institutions in forest conservation in Mizoram and Chakesang tribe inhabited villages of Phek district of Nagaland. The erosion of the power and authority of traditional institutions in Mizoram created space for an organization which can take decisions on conservation of resources and general welfare of the people. This led to emergence of the modern institutions Young Mizo Association and Young Lai Association. YMA/YLA collaborated with village councils in protection and conservation of forests. At present, these non-government organizations have powerful influence on Mizo society. We noted that the YMA has taken a leading role in creation of medicinal plantations and recreation forests as well as management of village reserved forests. Similarly, a 600 years old community reserved forest in Tetsumi village of Phek district was managed cooperatively by the traditional institutions *Mewu* of Chakesang community and the recently created village council.

The study suggests that the role of traditional institutions is commendable in conservation and protection of forests in the hill regions of northeast India. Most forest biodiversity in the states of Meghalaya, Mizoram and Nagaland is supported by the community conserved forests because the extent of government managed forest is very limited. We found that most forests in the study villages were managed by villagers through traditional institutions whereas in the rest of India, government policy provides little space for real community involvement: forests are owned by the state and the state policy favors only community participation in selected state-owned forests (Barik and Tiwari 2004). In such situations, the local communities have little interest in conserving or managing government controlled forests (Nanang and Inoue 2000; Conafor 2002; White and Martin 2002; Gokhale 2004). The decline of traditional institutional arrangements and the breakdown of the collective role of and ownership by communities in natural resources management in other parts of the world have often led to degradation of forests (Jodha 2002; Xu and Ribot 2004). For example, the rapid and growing deforestation rates in Indonesia are directly linked to violations of the rights of indigenous and other local peoples. In India too, Gokhale (2004) reported that in Karnataka, during the administration of the erstwhile Mysore state, the communities managed the forest prior to the onset of British rule when the rights of the people were curtailed and forests were exploited for timber. Several governments have successfully introduced decentralized forest governance arrangements with a focus on collaborative or community management of forests to preserve the forest re-

sources (Ribot et al. 2006; Agrawal and Chhatre 2007). Creation of community-protected forests has also been reported from Nepal. From these forests, the collection of fuel wood and fodder for livestock is allowed according to the rules set up by the forest user group committee (Gautam 1991; Arnold and Campbell 1986; Khatri-Chhetri 1993, Edmonds 2002). Forest resource management by local communities has also been reported in Bangladesh (Dasgupta and Ahmed 1998) and Tanzania (Brockington 2007).

The role of local institutions in forest resource management has been reported worldwide (Boku and Ben 2003; Shadrach 2010; Yemi et al. 1999; Gadgil and Fikret 1991). An analysis of forest typology in northeast India shows several common themes. Village forest is accessible to villagers for collection to meet bonafide needs. In the same village or in a neighboring village, there is a restricted forest under the control of *Raid* (a village institution) which is given a higher degree of protection by requiring permission for access to forest resources, generally in cases of communal need. Even a higher degree of protection is provided to sacred forests which are repositories of biodiversity and providers of forest services to the people. Thus both production as well as protection forests are maintained by the communities at local levels. These traditional concepts are now being put into practice by the Mizo community by creating recreational forests and village reserved forests, where from collection of timber and NTFPs is totally prohibited. The purpose of maintaining village reserved forest by villagers in Mizoram is to retain green cover in the village for environmental benefits equivalent to the sacred and restricted forests of Meghalaya.

Conclusions

We conclude that traditional institutions are actively involved in conservation and management of the forests in these predominantly tribal inhabited states. The traditional institutions are making adjustments to provide space for modern needs and also to make themselves more inclusive, particularly in cases where chieftainship existed in the past. Rapid modernization of traditional tribal institutions (as recorded for some tribes) could result in loss of their ecological knowledge of forest management. Modernization of traditional institutions must, therefore, be carefully monitored and efforts should be made to ensure that forest related knowledge is not lost during modernization. The traditional management of forests has evolved an elaborate system of forest types based of their intended uses. The concept of creating forests for day to day use (supply forest) and setting aside forest patches for posterity (forest supply reserve) within a territorial jurisdiction of the traditional institutions noted in many tribes is worth emulating by modern forest managers.

Acknowledgements

Authors are thankful to Dr. Neizo Puro, Nagaland University and Dr. F. Lalnunmawia, Mizoram University for helping in field work in the states of Nagaland and Mizoram respectively. Authors are also thankful to the research staff of Regional Centre, NAEB, NEHU, Shillong, for their help in field work and data

analyses.

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