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Status and socio-ecological dimensions of sacred groves in Northeast India

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Abstract

Sacred groves are among one of the best practices of biodiversity conservation used by the ethnic societies which are deeply associated with the religion and culture that significantly nurture nature. As these practices play a vital role in conserving socio-ecologically important species and protect threatened flora and fauna from extinction in different ecological zones. In northeast India, sacred groves are well connected with culture and society through religious beliefs of the population and their associated myths. Sacred groves cover a total of > 40,000 hectares of natural forest area in the five northeastern states of India. These forests house some of the most important and highly threatened species of plants. Wild relatives of present-day cultivated plants are found in these forests and hence act as the gene pool for these species. Social transformation and urbanization have a large impact on the structure and health of these forests and responsible for their destruction. Developmental projects like railways, roads, hydro-electric projects etc. have reportedly destroyed many groves in the past. Due to social transformation, the rate of activities like grazing, encroachment, cutting and collection of fuel wood, fruits and leaves has been increasing and posing a threat to the conservation of biodiversity and ecosystem function in the future. Creating awareness about the social and ecological benefits of maintaining sacred groves among local people, especially youth, can help in reviving these practices and conserving them as a natural heritage for future generations is the need of the hour.

Keywords: Northeast, Natural beliefs, Sacred groves, Social Transformation, Threats

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INTRODUCTION

Climate change is one of the burgeoning catastrophes witnessed in the history of mankind, which has resulted in a significant increase in the levels of atmospheric temperature, CO₂ and other greenhouse gases. The climate change phenomena are associated with the rising atmospheric temperatures, erratic rainfall patterns, melting of glaciers at faster rates, increasing levels of seashores which are hindering the ecosystems process in almost all kind of ecosystems (Garg . 2015). This can create the situation of natural disasters in different parts of the world and take a heavy toll on human life in times to come. Biodiversity conservation in the diverse range of ecosystems has the potential to mitigate the negative effects of ongoing environmental crises. Religion has always cherished a special place in human society. Connecting things with faith is the easiest way to get society's sup-

port for a good cause. Sacred groves are the best example of connecting nature with faith (Untawale, 1998; Kulkarni, 2018). They have been used for cultural or spiritual practices by people living in the vicinity. Such sacred forests are found throughout the world and nicely protected and managed by the local communities for the welfare of society. The major activities of the sacred groves are, for example, a place for spiritual activities, burial ground and watershed management (Ormsby, 2013; Amirthalingam, 2016). Sacred groves are the form of the landscape consist of flora, fauna and geographical features defined and protected by communities and kept under undisturbed condition to express the link between divinity and nature (Hughes and Chandran, 1998). The concept predated to hunting-gathering period and flourished in most parts of India (Gadgil and Vartak, 1975). Natural resource conservation has been an integral part of many

Table 1. Distribution of sacred groves and their area in different parts of Northeast India.

Location	Total Number of sacred groves	Number of deities	Area (ha)	References
Arunachal Pradesh				
Total	101	46	30834	Khan , 2007
Assam				
KarbiAnglong	17	NA	226 (11 sites)	
North Cachar Hills	12	NA	NA	
Total	27			Medhi and Borthakur, 2013
Manipur				
Bishnupur	22	19	5.78	
Imphal East	38	25	54.75	
Imphal West	98	85	112.65	
Thoubal	8	3	2.2	
Total	166	132	175.38	Khumbongmayum, 2005
Meghalaya				
East Garo Hills	8	NA	125	
East Khasi Hills	50	NA	5129	
Jaintial Hills	15	NA	916	
Ri Bhoi	3	NA	1080	
West Garo Hills	8	NA	181	
West Khasi Hills	21	NA	1864	
Total	105		9295	Tiwari, 1999
Sikkim				
Total	19	15	NA	Anonymous, 2011

indigenous communities and forest patches were traditionally conserved by dedicating them to local deities known as sacred groves. These Sacred groves are believed to be the living place of deities and spirits of the hamlets who protect villagers from calamities and bring prosperity (Patnaik and Pandey, 1998). In return, the villagers propitiate them through rituals and sacrifice during festivals or designated seasons. These forest pockets are generally protected near to virgin and degree of activities allowed according to sacredness. In Khasi and Garo tradition, human interference is completely prohibited, whereas Gonds of central India allow the collection of fallen parts and prohibits the cutting of the tree.

India, a country with diverse cultural and natural heritage, is believed to have the highest number of sacred groves estimated ~100,000 (Malhotra, 2007). In most parts of India, Sacred grooves represent the climax vegetation, which is disappearing due to changes in faith, increasing anthropogenic pressure and modernization of society (Chandrakanth, 2004). Sacred groves are the best examples of a traditional way of *in-situ* conservation and averting an ecological crisis. Although the preservation of sacred grooves is based on religious belief, they are important for germplasm conservation, which is otherwise under threat due to anthropogenic activities (Boojh and Ramakrishna, 1983). This traditional practice of biodiversity

conservation evolved by devout people stand as a lesson to the present-day foresters.

The present paper reviewed the sacred groves of five northeastern states of India, highlighting their cultural (religious affiliation) and natural heritage (area covered for biodiversity conservation). It is emphasizing the importance of sacred groves to the environment as well as society and pointing out the possible threats. The information will be helpful in making better strategies for management of sacred groves and utilizing the concept for biodiversity conservation.

Demography of Northeast India: The northeast region of India has a very high diversity in terms of cultural and natural resources (Fernandes, 2006). The region is comprised of states like Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura (Figure 1). The Siliguri corridor connects it with the rest of the country. These states share their international borders with other countries like Bhutan, Myanmar, China and Bangladesh. The region is the part of two biodiversity hotspots viz. Eastern Himalaya and Indo-Burma. It has a total geographical area of about 2,62,230 km² that makes 9 percent of the total landmass of the country (Joshi ., 2015). The region has approximately 40 million populations according to the population census of 2011. Majority of the land mass (i.e. 65.60 percent) is under forest cover. The climate

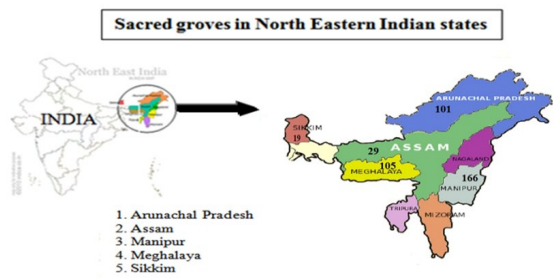


Fig. 1. Map of Northeast India showing numbers of sacred groves in North Eastern Indian states.

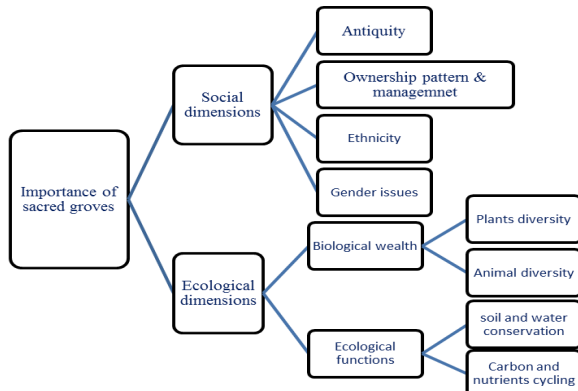


Fig. 2. Social and ecological dimensions of sacred groves in North Eastern Indian states.

of the area ranges from tropical humid in the lower plains to cold temperate in higher ridges of eastern Himalaya (Fernandes, 2006; Burman, 1992).

Sacred groves in Northeast India: Northeast region is highly diverse in culture, traditional knowledge and biological resources. The region is inhabited by more than 150 tribes using different languages and traditions, which makes it unique in the country (Dutta and Dutta, 2005). These ethnic communities have a strong belief in nature and natural forces. The people have been protecting the plants, including trees, herbs and shrub along with animals and birds. A high number of sacred groves are reported from states of Arunachal Pradesh, Manipur, Meghalaya and parts of Assam (Tripathi, 2001). These groves are known by different names in different ethnic groups. The term 'Than' is used by Bodo and Rabha and 'Madaico' by Dimasa in Assam; 'Umanglai' by Meitei/Meitei in Manipur; 'Law kyntang' or 'Law Lyngdoh' in Meghalaya (Tiwari, 1999; Devi, 2000; Medhi and Borthakur, 2013). Sacred groves of Arunachal Pradesh are mainly managed by Mompa and Lamas. These groves are located at higher altitudes and associated with Buddhist monasteries. The sacred groves of Assam are found in plain as well as foothill regions alongside river valleys and managed by ethnic groups like Bodo, Rabha, Karbi Anglong (Malhotra, 2001). In Manipur, the highest numbers of sacred groves are reported (Figure 1) from four plain districts (Imphal East, Imphal West, Thoubal and Bishnupur). The name

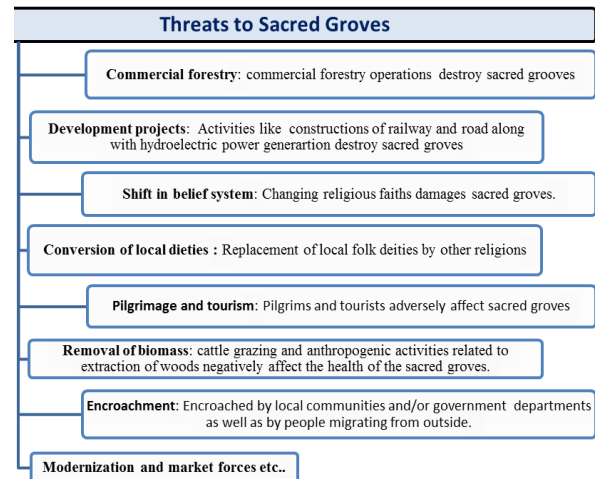


Fig. 3. Various threats available to sacred groves in North Eastern Indian states.

of 'Umanglai' (deity) changes with the community and groves can be seen as a patch of forest on the side of the villages or locality in the plain areas of Manipur (Kulachandra, 1963; Khumbongmayum, 2005).

Sacred groves of Arunachal Pradesh: The sacred groves of Arunachal Pradesh are mostly managed by Buddhist monasteries and known as Gumpa forest areas. These protected forests are mainly found in different places of West Kameng and Tawang district. Chatterjee, (2000) reported the presence of sacred groves in Siang and Lower Sibansari district also. A total of 101 groves (Table 1) have been reported in different places of the state and most of them were attributed to Buddhism (Khan, 2007). These ethnic communities have conserved and protected flora and fauna due to their respect and belief in nature and natural forces and a variety of plants were considered as sacred including Harada, Banyan, Ashoka, Bela and Pipal (Khan, 2007).

Sacred groves of Assam: In Assam, sacred groves managed by Bodo and Rabha ethnic group and Dimasa ethnic group are locally known as 'Than' and 'Madaico' respectively. There are about 29 sacred groves (Table 1) reported from Assam and out of which 17 have been reported in Karbi Anglong district and 12 groves from North Cachar district (Medhi and Borthakur, 2013). Madaico is generally smaller in size with an area less than an acre. Sacred groves are also reported from the Brahmaputra valley of Assam (Malhotra, 2001). Groves like Vaishnav monasteries are distributed almost throughout the state. The plants like giant bamboo, pear bamboo, pink banana, metico pepper, Indian smilax, Areca nut, sand paper tree and Devil's cotton are considered as sacred plants (Amirthalingam, 2016). These groves are associated with the identity of communities to the availability of plant resources. The killing of animals and birds during the mating sea-

son is prohibited in and around the groves (Medhi and Borthakur, 2013).

Sacred groves of Manipur: In Manipur, sacred groves are commonly known as 'Umanglai'. Sacred groves are worshipped by Meitei/Meetei ethnic tribes annually and celebration is known as 'Umanglai Haraoba'. A total of 365 sacred groves were reported by Devi (2000), and out of these, some groves are a reference for rare and endemic species of plants (Singh, 2001). Among 166 sacred groves (Table 1) reported from four valley areas about 58% were under partly threatened, 31% were under threatened and the remaining 11% were under well protected and preserved category (Khumbongmayum, 2004). Several ecologically important tree species with good soil nutrient retaining capabilities e.g. *Albizia lebbek*, *Ficus resemosa*, etc. reported from these groves (Khumbongmayum, 2005). Various developmental activities (viz. roads, highways, buildings) led by increased population pressure and urbanization deteriorating the health of sacred groves (Khumbongmayum, 2004).

Sacred groves of Meghalaya: In Meghalaya, sacred groves are known as 'Law kyntang' and 'Law Lyngdoh' and a total of 105 sacred groves (Table 1) have been reported from different places of east Garo hill, east Khasi hills, Jaintia hills, Ri Bhoi, west Garo hills and west Khasi hills (Tiwari, 1999). Sacred groves of Meghalaya are believed to be the places of the deities by several communities. They bestow their faith in deity for the welfare of their community and crops. Activities like grazing, cutting the tree and their branches, collection of the leaves, flowers, fruits etc. are prohibited in these forest patches and patches are nesting place for birds and other wild animals. As per Jamir and Pandey (2002), about 514 species of flora are reported from these groves belonging to 131 families and 340 genera.

Sacred groves of Sikkim: The sacred groves of Sikkim are mostly attached to Buddhist monasteries and known as Gumpa forests. These forests are protected and managed by lamas. Sacred groves are found in all 4 districts and 19 groves (Table 1) are reported from different locations (Anonymous, 2011). The highlands of Demojong below the Khangchenjunga peak are the most sacred site for the Sikkim's Buddhist. Any human activity here is believed to spell disaster for the region.

Anthropological and biological conservation view of sacred groves: The sacred groves of northeast India have been studied by many with anthropological and biological conservation point (Chandrashekara and Sankar, 1998; Gupta, 1998; Pushpangadan, 1998; Ramakrishnan, 1998; Gopal et al., 2019; Rajora and Solanki, 2019). An overview of the socio-ecological dimensions of these sacred groves in North East India is illustrated through the flow diagram in Fig. 2.

Threats to Sacred Groves: In the face of rapid

development, great pressure is being placed on ecological and cultural diversity (Xu, 2005). The sacred groves are also facing threats from different developmental changes (Chanda and Ramachandra, 2019). Based on the reports, various threats available to sacred groves are grouped under the different headings and shown in Fig. 3.

Conclusion

Sacred groves are among one of the important practices which are responsible for conserving endemic flora and fauna of our natural ecosystem, and they promote *in-situ* conservation of different threatened species. Apart from trees and shrubs, they are home to economically important varieties of orchids, ferns, microbes etc. Sacred groves can act as a genetic pool for forest genetic resources and can be used for future plant improvement programs. Such groves are generally protected by ethnic groups on the basis of religion and culture in the past which are now facing serious decline due to changes in the religious belief of indigenous communities. Several unorganized efforts have been made by different Government agencies and researcher to encourage local communities for the conservation of sacred groves and traditional knowledge but did not get desirable results. There is a need to organize awareness programs for local communities about the importance of sacred groves. Local People especially the youth should be involved and trained in conservation practices. Sacred groves provide a perennial source of drinking water by recharging the springs and important source of medicinal plants, fruits, fuelwood etc. The overexploitation of resources and grazing inside the grove areas has created a threat to various important species. In some parts of northeast India like Meghalaya, steps are being taken up by the Ministry of Environment and Forest to promote conservation of sacred groves through National afforestation and eco-development programs which include proper awareness of local communities towards the conservation of sacred groves. Number of programs for example, fencing sacred groves to reduce grazing and encroachment, promotion of artificial regeneration and enrichment planting of indigenous plant species can help in reviving sacred groves in the region.

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