



Role of Sacred Groves in Conservation of Biodiversity

P. E. Jagdale

Loknete Ramdas Patil Dhumal Arts, Science, and Commerce College, Rahuri-413705, District- Ahmednagar, (M.S.), India.

Abstract

Sacred groves are patches of forest land that have been preserved by the ethnic communities based on their religious beliefs. The sacred groves are an integral part of the culture and tradition. These forests are sacred as they are dedicated to some specific god or goddesses. The ethnic people believe that it is the divine power who protects them from all odds and calamities and thus in order to please the divine power. They preserve a part of forest land for their respective gods. These patches are being controlled by the ethnic group of people and in most cases have some stringent law which prohibits any form of harm to the region. Thus cutting of trees or plucking of flowers and fruits are strictly prohibited in these regions. This is of great ecological significance as the religious tradition as traditional thought process of the ethnic group gets directly reflected on protection and conservation of flora and fauna in the sacred groves. These sacred patches of forest thus house several indigenous and endemic plants having nutritional and medicinal importance. It is also home of a number of animals which find safe shelter in the woods of the forest. This paper is an overview of the sacred groves of India and its current status.

Keywords: Sacred Groves, Flora, Endangered, Endemic, God.

Introduction

Association between plants and humans have been existent since antiquity. Ever since humans entered a civilized phase, they started to depend on plants for their food and shelter. Parallel to this they were also afraid of the harsh climatic condition such as rains, thunder storms, floods, heat waves etc and considered them as gods or supreme power. Thus the concept of worshipping of forces of nature gradually came into existence. This gradually evolved into the concept of Gods and goddesses and in order to appease the divine power people might have started worshipping in the forest lands and build or designate trees as holy. This concept of designating a

tree as holy or a patch of forest land as holy gradually evolved into the form of sacred groves. Needless to mention, the present day sacred groves are dedicated to gods and goddesses which are deeply embedded in the culture and tradition of the community. Sacred groves have thus become forest sections that are communally protected with religious fervor and meanings. Traditional cultures and indigenous people have been protecting these forest areas with their cultural and religious practices for centuries. Sacred groves are usually handled with reverence. Sacred trees are protected from cutting and axing except when the wood is required for spiritual reasons such as temple construction and repair, as well as worship, death ceremonies, and temple rites. As a result, sacred groves have a direct and perpetual pious position, and they help to sustain society's social fabric. In our country, Sacred groves have thrived since the beginning of time as pockets of highly wooded terrain that are revered for religious reasons. In India, sacred groves are spread in almost every province. In India, between 100000 and 150000 sacred groves have been reported. The Himalayan region, Western and Eastern Ghats, Coastal Region, Central Indian Plateau, and Western Desert are all home to Sacred groves in India (Singh et al., 2017). The Sacred groves serve a critical role in ensuring that ecosystem services such as air, soil, and water conservation, flora and fauna conservation, carbon capture and storage, temperature management, and traditional knowledge conservation run smoothly (Kandari et al., 2014). An overview of the sacred groves present in various parts of India will be discussed in this article.

Sacred groves across India

Groves in Peninsular India

In Kerala, Hindus used to designate a portion of their property near their house as the residence of goddess Durga or Serpent God Naga or Shasta, and the location was known as Kavu or Sarpakavu (ENVIS Centre: KeralaState of Environment and Related Issues). According to research on Kerala's sacred groves, there are 761 sacred groves rich in biodiversity, with over 722 species belonging to 217 families and 474 genera (Sreeja and Unni, 2016). Locals in Maharashtra protect small patches of forest in the Ghats as "sacred groves." They are known as "Devrai," and they are controlled by locals and dedicated to the deity in the grove. These groves serve as indicators of vegetation that has been less disturbed (Vipat and Bharucha, 2014). Devrai or Devrahati are the names given to sacred woods in western Maharashtra, whereas Devgudi is the name given to them by the Madiya tribe in eastern Maharashtra (Jagdale and Waghchaure, 2014; Shaikh and Mulay, 2019). Sacred groves can be found in both tribal and non-tribal locations in Maharashtra. About 4,000 similar groves can be found in Maharashtra's wildlife areas. *Portia*, *Casuarina*, Silk cotton, Indian laurel, Indian Elm, Bead, Indian butter tree, Turmeric, and Japanese ginger are some of the most prevalent plant species found in sacred forests (Amirthalingam, 2016). Temples, shrines, and burial places are frequently associated with groves. God Shiva, Maruti, Vaghoba, Kektai, Vira, Bhairoba, Khandoba, and Shirkai are some of the deities to whom these groves are dedicated. The tribal groups of Dhangar and Mahadeo Koli, as well as the agro-pastoral community of Maratha, revere the gods and care for the groves. While Maratha employs agricultural practices, they are forest-

dependent communities. Several restrictions to appease the deity limit resource extraction in the groves, resulting in the creation of remnant pockets of a climax forest. The Devrai in Maharashtra is in constant threat of degradation and ultimate extinction. Because the older generation in villages holds a stronger belief in the grove's tradition than the younger ones. As a result of deteriorating ties to the environment and increasing urban migration among the younger generation in these communities, understanding of the need of protecting these groves has declined. Urbanization has influenced sacred groves, culminating in the construction of concrete temples by destroying natural vegetation and planting ornamental and other commercially beneficial trees in the groves' cleared portions. Such actions harm these fragile ecosystems and erode or disrupt the entire resource base that this ancient civilization is said to have evolved for (Wandering Maharashtra).

Groves in Western and North Western India

Sacred groves can be found in many forms across Gujarat. They exist as a result of a variety of cultural practices and belief systems. In the state, 42 sacred groves have been identified. These sacred groves are linked to deities such as Khodiyar Mata, Oran Mata, Jhalai Mata, Panch Krishna, and Mahadev. The groves' vegetation is diverse, including mangroves, freshwater marshes, and other tropical forest types. Cotton tree, Bengal quince, Neem, Mango, Flame of the Forest, Sissoo, Thorny staff Tree, Banyan, and Pipal are only a few of the most prevalent plant species found in sacred woods. In Gujarat, sacred groves are vital for biodiversity protection and recharging (C.P.R. Environmental Education Centre, Chennai, b). In Rajasthan, sacred groves are known as "orans." The word oran comes from the Sanskrit word Aranya, which means "forest." The Bishnoi community in the state is well-known for its strong views on animal and plant conservation. No one is allowed to cut or damage trees in these hallowed groves, according to the community's uncodified constitution. Collecting dried wood is also prohibited (Down to Earth). Orans are also areas where herdsmen take their animals for pastures, as well as venues for community gatherings, celebrations, and other community occasions, all of which are tied to agrarian rhythms and the communities' ongoing dedication to nature conservation. Krishi Avam Paristhitiiki Vikas Sansthan (KRAPAVIS), estimates that there are approximately 25,000 Orans distributed across 600,000 hectares of land that have been traditionally maintained and preserved by the community (The ICCA Consortium). Approximately 1100 large Orans cover a total area of 100,000 hectares. Orans cover roughly 5,370 square kilometers in the Thar Desert. The Oran is demarcated in a ceremony in which Ganga water or saffron milk is poured in a designated area after which the area is declared to be sacred or Devbani (God's forest). This ritual, known as Doodh Jal or Kesar Chaanta, marks the sacred grove's boundaries (Krishna, 2011).The sacred groves of Chattisgarh are known as Devgudi and also aims for the conservation of nature through their socio-religious custom.

Groves in North Eastern India

Similarly in the northeastern state of Meghalaya, sacred groves symbolize a long heritage of tribal societies' environmental conservation based on indigenous wisdom (Jeeva et al., 2006). They are one of the few remaining

undisturbed forest sections, acting as a natural biodiversity treasure trove and a haven for a diverse range of endemic, endangered, and rare taxa. The sacred groves in the Khasi Hills and Jaintia Hills Districts are centered on the tribals' traditional religious beliefs, which are referred to as Seng Khasi and Niam Tre, respectively (Ormsby, 2013). They thought that a forest deity is known as 'Ryngkew,' 'Basa,' or 'Labasa,' resided in these sacred groves and guards the village community and provides well-being. Cutting trees, harvesting flowers, fruits, and twigs are not permitted in these forests, as it is believed that doing so would insult the deity, causing bad things to happen. In these forests, various rites and rituals are done regularly. There are 79 sacred forests totaling 9000 hectares in this area. Areas ranging in size from 0.01 hectares to 1200 hectares (Meghalaya Biodiversity Board). The northeastern state of Arunachal Pradesh is the home of several ethnic communities. Based on their religious tradition, beliefs, and taboos, the majority of tribes have been maintaining and conserving sacred forests. The floral and faunal richness of Arunachal Pradesh is enriched by sacred groves. There are many Gompa Forest Areas, most of which are connected to Buddhist monasteries and controlled by Lama and Monpa tribes (Murtem and Chaudhry, 2014). Local deities such as Ubro or Ubram and Thouw-gew are honored in these sacred woods. In these hallowed groves, no disturbance is permitted, and the acquisition of dead or living trees or plants is strictly prohibited. According to legend, neglecting to follow local customs results in a bad omen, necessitating the use of priests to complete specific ceremonies. During the Myoko festival, only priests known as Nyibu are allowed to collect dead or living trees, plants, or their components. In addition to god worship, the people of Manipur practice ancestral worship and animism. It is practiced the beliefs related to the Sylvan deities (Umang Lais). The Meiteis perform the ritual of worshipping deities every year to obtain their favor. Meities have a long history of linking groves/plants/animals with cultural and religious traditions to preserve the ecology. Local people's indigenous cultural and religious traditions in sacred forests serve as a strategy for biodiversity conservation. The social borders aid in the protection of the entire forest patch as well as rare and endemic species. These woods also hold a variety of valuable medicinal and non-medicinal plants. Gamkhap and Mauhak are the indigenous names for these groves (Kreately Media Inc).

In Assam, sacred groves administered by the Bodo and Rabha ethnic groups, as well as the Dimasa ethnic group, are popularly known as 'Than' and 'Madaico,' respectively. There are around 29 sacred groves documented in Assam, with 17 groves reported in Karbi Anglong district and 12 groves found in North Cachar district. 'Madaico' are referred to as groves having smaller sizes whose area is less than 1 acre. Vaishnav monasteries and other groves may be found practically everywhere in the state. Sacred plants include the big bamboo, pear bamboo, pink banana, metico pepper, Indian smilax, Areca nut, sandpaper tree, and Devil's cotton. These groves are linked to community identity and the availability of plant resources. In and near the groves, it is illegal to kill animals and birds during the breeding season (Upadhyay et al., 2019). In Sikkim, Sacred Groves are associated with Buddhist monasteries. They are called Gumpa Forest Areas and are managed by Lamas and are known as Gumpa Forest Areas. In the state, there are 56 sacred groves dispersed over four districts. The deities consecrated to these groves include Cho Chuba, Loki Sharia, Guru Padmasambhava, and Rolu Devi Than. The sacred groves

are home to a variety of plant species, including *Cupressus*, Silver Oak, Tooni, Thotnay, Aiselu, Tusare, and Ruk Saro. The most sacred site is the Demojong highlands, which are located beneath the Khangchendzonga summit (C.P.R. Environmental Education Centre, Chennai, a). Most sacred groves in Darjeeling have 'deities' Devi Durga (also known as Singha mata, Satkanya, Tinkanya, Sweto Devi, etc.) and Lord Shiva, often as rocky idols inside small rocky cellars as 'shrines,' a few are connected to nearby monasteries (Gumpas), while some are Hindu temples within forests (generally in the plains around Siliguri). Environmentally and genetically, Darjeeling's sacred groves are vital. It is home to a variety of Endangered ethnomedicinal flora, such as *Swertia chirayita*, as well as wildlife, such as the Himalayan Salamander. It also has a large number of forage and firewood species (such as *Fagopyrum dibotrys* and *Saurauia napaulensis*; *Quercus* spp., *Castanopsis hystrix*) (Panda, 2017). Apart from the northeastern frontier regions, sacred groves are also plenty in other parts of India.

Discussion and future prospects

Natural resource conservation has been an intrinsic aspect of varied cultures in various ways since ancient times. In this case sacred groves are very instrumental as the religious and cultural beliefs have paved the way towards conservation of nature. Due to increasing population and rapid industrialization, there has been a reduction in forest cover (Misra et al., 2013). This has damaged the biodiversity to a large extent and resulted in threat and loss of species. In this case sacred groves come out to be an important and safe place where biodiversity can be preserved. At present, International organisations are becoming more interested in the importance of natural sacred locations (sacred groves). The World Heritage Convention and the UNESCO-MAB 2005 biosphere reserve concept both recognise the relevance of holy groves and place them in the path of sustainable development (Parthasarathy et al., 2019). Several reasons have prompted people to express their interest on sacred groves and its necessity for preservation. Firstly, the sacred groves occur in small patches and offers protection to a large number of plants and animals (Nganso et al., 2012). Secondly it is the only landscape that gets protection based on religious and cultural beliefs of the people (King et al., 1997). Finally, these areas are important repositories of plant and animal diversity, medicinal herbs, and unique species, and any loss of these species could result in ecological and economic consequences (Warrier and Warrier, 2019; Sharma and Kumar, 2021). These sacred groves provide an ideal sites not only to preserve the plant and animal species but also to an arena to study the biology of those plants species which have not been explored before. As the plants and animal are closely interlinked to microbes, the sacred groves are also beneficial to study plant microbial interactions. Long term study of the sacred groves are also important and provides an insight for biodiversity conservation (Bhagwat and Rutte, 2006). Evaluation of reproductive capability of flora and fauna in the sacred groves is also important. Most of the sacred groves have been reduced to patches due to anthropogenic pressure and urbanization (Daye and Healy, 2015). This has resulted in fragmentation of habitats of plants and animals thereby affecting the reproductive capability. In this aspect, in depth study of pollination of the plants dwelling in sacred groves might also provide an edge of how they can be conserved in the constrained habitat. The sacred

groves also play a vital role in nutrient cycling and water conservation (Cardelús et al., 2013). Thus considering their uniqueness and emphasizing on their fragility an integrated approach combining science, culture, religion and tradition should be taken to preserve these patches for the benefit of mankind?

Conclusion

Sacred groves might have been in existence since the times of antiquity and are closely linked to the religious beliefs and customs of an individual community. In ancient times, people were afraid of the forces of nature and natural resources, and forests and their varied fauna were a matter of fear to them. This paved the way for worshipping the resources of nature and unknowingly a tradition of preserving them out of fear and respect. This tradition was passed on from generation to generation and ultimately resulted in the conservation of plant and animal resources. However, the concept of 'sacred groves' was identified by the scientific community at a much later stage when environmental degradation became prominent and became a matter of concern. Thus these exposed fragile conserved patches to the contemporary world. However, due to rapid urbanization, these fragile biodiversity regions are at a constant threat of being eroded. The article provides an overview about the sacred groves in different parts of India and their ecological and biological significance. The sacred grove can prove to be a region of immense scientific importance if an integrated approach is taken to preserve this fragile habitat which will not only protect the biodiversity but also help to preserve the enriched tradition of the people of the subcontinent.

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