

**CULTURAL AND ECOLOGICAL DIMENSIONS
OF
SACRED GROVES IN INDIA**

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PREFACE

In India, as elsewhere in many parts of the world, a number of communities practice different forms of nature worship. One such significant tradition is that of providing protection to patches of forests dedicated to deities and/or ancestral spirits. These patches of forests are known as sacred groves (SGs). The institution of SGs is very ancient, and once was widespread in most parts of the world. Over 50,000 SGs have so far been reported from different parts of India. SGs are the rich heritage of India, and play an important role in the religious and socio-cultural life of the local people. SGs are ecosystems by themselves and perform all the ecological functions. Many threatened, endangered and rare species find safe refuge in the SGs. The groves are repositories of biological wealth of the nation. This institution, however, now shows signs of weakening in both cultural and biological integrity.

The overview presented in this report has been prepared on behalf of the National Committee for Scientific Committee on Problems of Environment (SCOPE). The overview covers various cultural and ecological dimensions of SGs in India, and describes the recent initiatives undertaken by various institutes in the country to strengthen this institution.

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June 2001

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CULTURAL AND ECOLOGICAL DIMENSIONS OF SACRED GROVES IN INDIA

In India, as elsewhere in many parts of the world, a number of communities practise different forms of nature worship. One such significant tradition of nature worship is that of providing protection to patches of forests dedicated to deities or ancestral spirits. These vegetation patches have been designated as sacred groves. Although different authors have described these groves in different ways, most scholars emphasize the natural or near-natural state of vegetation in the sacred groves, and the preservation of these groves by local communities through social taboos and sanctions that reflect spiritual and ecological ethos of these communities.

Sacred groves are dedicated by local communities to their ancestral spirits or deities. Such a grove may consist of a multi-species, multi-

tier primary forest or a clump of trees, depending on the history of the vegetation. These groves are protected by local communities, usually through customary taboos and sanctions' with cultural and ecological implications.

Thus sacred groves (SGs) are segments 'of landscape, containing vegetation and other forms of life and geographical features that are delimited and protected by human societies under the belief that to keep them in a relatively undisturbed state is expressive of an important relationship of humans with the divine or with nature (Hughes and Chandran, 1998). Diverse cultures perceive this relationship in different ways, and institutionalise various rules of behaviour (taboos) with regard to the sacred space and its elements.

The institution of SGs has been fairly well studied in India from anthropological as well as biological conservation points of view (for an overview of anthropological studies, see Roy Burman, 1995; Gupta, 1998; Malhotra, 1998; Das and Malhotra, 1998; and for biological conservation related studies see Chandrashekara & Sankar, 1998; Deb et al. 1997; Deshmukh et al., 1998; Pushpangadan et al., 1998; Gokhale et al., 1998; Ramakrishnan, 1998; and also see Ramakrishnan et al. (eds.), 1998: This publication contains several articles on the subject.)

We provide here an overview of the cultural and ecological dimensions of SGs in India. The materials have been described under three broad headings: (1) Anthropological Dimensions, (2) Biological and Ecological Dimensions and (3) Threats and Opportunities.

1. Anthropological Dimensions of SGs

The material in this part has been described under the following heads and draws substantially on an earlier review article of Malhotra (1998) and Gokhale (in press)~

- Antiquity of SGs
- Geographical Distribution of SGs in India
- Number and Size 'Distribution of SGs
- Ownership Pattern and Management of SGs
- Ethnicity and SGs
- Gender and SGs
- Interface Between People and SGs
 - Religious
 - Socio-cultural
 - Economic
 - Political.

1.1 Antiquity of SGs

Several scholars have noted that SGs are a very ancient and widespread institution in the Old World cultures. According to Kosambi (1962) the institution in India is very ancient and dates back to the pre-agrarian hunting-gathering stage, before humans had settled down to raise livestock or till the land.

1.2 Geographical Distribution, of SGs in India

In the present day India the tradition of SGs is reported from most parts of the country. However, for the following states there are no reports or studies available regarding the presence or absence of the tradition:

Andaman and Nicobar Islands, Jammu and Kashmir, Lakshadweep, Nagaland, Delhi, Goa, Punjab and Tripura. We describe here the salient features of the distribution of SGs in different parts of the country.

1.2.1 Andhra Pradesh

The report of WWF -A. P. (1996) has more than 750 SGs from 23 districts of the State as follows (figures in parenthesis are number of groves in the respective district) . Adilabad (2), Anantapur (73), Chittoor (133), Cuddapah (76), East Godavari (10), Guntur (17), Hyderabad (13), Karimnagar (4), Khammam (4), Krishna (12), Kurnool (115), Mahabubnagar (9), Medak (4), Nalgonda (9), Nellore (87), Nizamabad (7), Prakasam (59), Ranga Reddy (10), Srikakulam (30), Visakhapatnam (30), Vizianagaram (32), Warangal (3), West Godavari (17). A study by Prakash (in press) in the Eastern Ghats of Andhra Pradesh indicates the following species as commonly found in the SGs such as neredu (*Syzygium jambolunu*), chintha (*Tumourindus indica*), niamidi (*Mangifera indica*), panasa (*Artocarpus integrifolia*), vepa (*Azhadiracta indica*), gummidi (*Gmelina arborea*), ganuga (*Pongamia glabra*), sampange (*Michelia chum paka*), teku (*Tectona grandis*), Juvvi (*Ficus retusa*), medi (*Ficus glomerata*), ravi (*Ficus religiosa*) and marri (*Ficus benghalensis*). Several groves can be found in the habitation area 'or economic zone and the common land of the village.

1.2.2 Arunachal Pradesh

Arunachal Pradesh has SGs attached to Buddhist monasteries called as Gumpa Forest Areas (GFAs), which are managed by Lamas. The monasteries are mainly found in the western districts, namely, Tawang and West Kameng. 58 GFAs are reported from the state. Other districts namely Lower Subansiri, Siang are also having SGs (Chatterjee et al., 2000).

1.2.3 Assam

In plains and foothills of western Assam, the forest dwelling tribes like Bodo and Rabha have tradition of SGs locally called *than*. Karbi Anglong district also has about 40 SGs (Deb, 1995). In Haflong district in the foothills of Assam, SGs of the Dimasa tribe are called *madaico*.

The size of *madaico* is generally not more than an acre. SGs are also found in the plains of Brahmaputra in Assam. The Vaishnav monasteries like Shankaradeva maths distributed all over the State also have SGs:

1.2.4 *Bihar*

No information is available about SGs in the State. However, there are several tribes among whom this tradition is present 'inhabit the State. Therefore, there is a strong possibility of the existence of SGs in Bihar.

1.2.5 *Chhattisgarh*

Many anthropological studies on tribals give account of the tradition of SGs in Chhattisgarh, the new State carved out from the Madhya Pradesh. Villages in Bastar have three kinds of SGs, namely, *matagudi*, *devgudi* and *gaondevi*. Different tribes have their own *Mata* or *Gaondevi* or goddess in *devgudi*. The Chhotanagpur part of the State shows the predominance of *sarana* or *jahera* kind of SGs plotted all over the State (Patnaik and Pandey, 1998; Pandey, 2000). The *saranas* are of different types such as *sarhul sarana*, *mahadani sarana*, etc. Generally, area occupied by the *sarana* is less than an acre.

1.2.6 *Gujarat*

Twenty nine SGs have been reported from Banaskantha district of Gujarat. The sizes of the groves range between one acre to two square kms (Gupta et al., 2000).

1.2.7 *Haryana*

In Haryana unlike in many States there is no generic name for SGs although the sites are protected for similar reasons. There are in all 248 SGs enumerated in Kurukshetra district where Kurukshetra tahsil has 190, Pehowa tahsil 30 and Shahabad tahsil 28. Out of the 248 groves studied, temple groves account for 30 percent, Tirath groves 20 percent, Gurudwara groves 18 percent, Samadhi groves & 4 percent and others (under Ashram, Dharamshala, Vidyapeeth, Church etc.) 16 percent (NAEB, 1995).

1.2.8 *Himachal Pradesh*

In Himachal Pradesh, the tradition of sacred groves is generally known as *dev van*. The tradition is reported from Shimla, Mandi, Kullu districts and Lahaul and Spiti. All these districts have dense forest cover according to maps of Forest Survey of India except Lahaul and Spiti where the groves are useful in maintaining the perennial source of water in harsh environmental conditions (Chhatre et al., 1998). Groves of various sizes are found. However, larger groves spread over few hectares are used for controlled use of resources by the local people. There are about 10,000 temples in the State with well defined management committees and Biradari Panchayats (Caste councils). Almost all the major deities in the State have their own groves and

hence the State can be called as Land of Deities and Sacred Groves (Sharma, 2000).

1.2.9 Jharkhand

The newly formed State is extensively dotted with sacred groves. The townships like Ranchi which were earlier tribal settlements, even today harbour SGs. Various anthropological studies report the tradition from Jharkhand. The tradition is popularly known as *sarana* or *jaherthan*. These groves are usually small forest patches not more than an acre. In the Chhotanagpur area there are various types of *sarana* for different purposes like *sarhul sarana*., *duvaria sarana*, etc. In Mundari language *sarhul* means nature's festival. Tribals also describe it as a beautification of Mother Earth. The *sarhul* is celebrated in *sarhul sarana*. The festival is celebrated when sal (*Shorea robusta*) trees start flowering.

1.2.10 Karnataka

The links of the forests with the deities of their respective villages of the Western Ghats of Karnataka were referred to by Buchanan (1870), who travelled through Uttara Kannada in 1801:

The forests are the property of the gods of the villages in which they are situated, and the trees ought not to be cut without having leave from the Gauda or headman of the village, who here also is the priest to the temple of the village god.

The SGs are referred to by different names in various parts of Karnataka such as *devarabana*, *devarakadu*, *hulidevarakadu*, *nagabana*, *Bhutappanbana*, *jataka-ppanbana*, *chowdibana*, etc. The groves in the Western Ghats broadly fall under two categories. The smaller groves are entirely protected; no tree felling or other biomass extraction may be allowed. On the other hand, larger groves function as resource forests, offering both livelihood sustenance and ecological security. The people of the village may gather fallen deadwood, non-wood produce such as pepper, mango, jackfruit, etc., and tap toddy from a palm (*Caryota urens*) (Chandran and Gadgil, 1993). The forested districts in the Western Ghats namely Uttara Kannada, Shimoga, Udupi, Mangalore, Dakshina Kannada and Kodagu harbour 1424 SGs (Kalam, 1996; Gokhale, 2000). (In Kodagu about 873 *devarakadus* spread over 10,865 acres were counted, registered and their boundaries were marked ,in 1873 by the forest department (Kalam, 1996).) According to the records of the forest department about 1214 *devarakadus* spread over an area about 6299.61 acres exist; where 352.28 acres are encroached resulting to 5947.23 acres under the *devarakadus* in Kodagu district (Kalam, 1996).

1.2.11 Kerala

The first authentic report on the SGs appeared in the Census report of Travancore published in 1891 in which Lt. Ward and Lt. Corner reported the presence of 15,000 sacred groves in Travancore (1827). A serpent *kavu* or an bode of snakes was an indispensable adjunct to each well-to-do Nair and Nambudiri family of Kerala (Chandran and Gadgil, 1993). The serpent worship is an important feature of SGs in the State. The SC tradition in Kerala can be broadly classified as follows:

The SGs owned collectively by the villagers are mostly dedicated to Lord Ayyappa and called as Ayyappan *kavu* or Sastham *kavu* and those dedicated to Goddess Bhagavathi are called Bhagavathi *kavu* or Amman*kavu*.;

Sacred groves owned by the tribal communities are dedicated to *vanadevatha*, the goddess of the forest or to spirits, demons or to ancestors. These groves are known as Madan *kavu* or Yekshi *kavu*.; and

The other castes like Nair, Namboodiri, Ezhava and 'coastal fisher folk' Dheevera also maintain the groves called *cheema* or *cheerumba* (Pushpangadan et al., 1998).

In Kerala distribution of sacred groves does not overlap with the forested areas. SGs are mainly found in the plains of Kerala. It is estimated that about 500 ha of forest area is under SGs (Prasad and Mohanan, 1995) contributing 0.05% of the total forest area of the state (Chandrashekara and Sankar, 1998).

1.2.12 *Madhya Pradesh*

The anthropological accounts of the tribes in the State suggest the existence of the institution. However, no studies are available on probable areas like Bundelkhand, Aravalli ranges in the northern part, Panchmahal area as well as central Madhya Pradesh.

1.2.13 *Maharashtra*

In Maharashtra SGs are found in tribal as well as non-tribal areas. The SC in western part is called *devrai* or *devrahati* whereas in the eastern part Madiya tribals call it *devgudi*. Gadgil and Vartak (1981) documented 233 SGs from Thane, Raigad, Jalgaon, Pune, Satara, Kolhapur, Yewatmal, Bhandara and Chandrapur districts. A recent study by Bombay Natural History Society shows existence of about 1600 SGs in Maharashtra (Deshmukh et al., 1998). Mahadev Koli tribe in the Western Ghats of Maharashtra also has the tradition of sacred groves (Roy Burman, 1992).

The distribution of SGs overlaps with the distribution of forests in the State. No reports are available for the central semi-arid region regarding presence of the groves. The average size of the groves is a few acres. Large groves are found occasionally. Smaller groves in the western and eastern parts rarely allow extraction of resource from the groves. Sacred groves form an important landscape feature in the deforested hill ranges of the Western Ghats of Maharashtra.

1.2.14 *Manipur*

Among the Gangte tribe in Churachandpur district of Manipur, extensive tracts of land were traditionally not subjected to shifting cultivation, since these were considered to be SGs, and believed to be abodes of spirits. There were also forest belts protected as sacred around the habitations called as *gamkhap*. Gangte tribals also have small reserves of bamboo called *mauhak*. Extraction of bamboo shoots from *mauhak* is totally prohibited (Gadgil, Hemam and Reddy, 1998). Meitei in Manipur practice nature worship and ancestor worship. The lofty hills, which surround the valley, are named after the deities. Their deity *umanglai* (jungle deity) is also

derived from nature worship. There are 365 *umanglai* groves in Manipur (Devi, 2000).

1.2.15 *Meghalaya*

Tiwari et al. (1998) report 79 SGs from the State. Rodgers (1994) mentions categorization of protected groves in Meghalaya, which was formulated by Durbar of Khasis in 1925 as follows:

Ki Law Lyngdoh: forests under the control of the traditional religious leader (or now village councils); no public use permitted.

Ki Law Kyntang: forests of great sacred value for sacrificial and religious ceremonies.

Ki Law Niam: religious forest (may not be distinct from above).

Ki Law Adong: forest protected for non-commercial use, e.g. water.

Ki Law Shnong: forest resources for village use.

Brandis (1897) mentioned the existence of SGs in Garo hills. Bamboo reserves dedicated to deities are also reported from the Garo hills. The ancestral worship is traditionally performed in forest patches by the Garo people. In forested areas the focus of worship is more on the ancient monoliths.

1.2.16 *Mizoram*

Mizo tribals have safety reserves and supply reserves around the villages. These safety forests are continuation of the SGs of the pre-Christian period. They also have bamboo reserves called *mawmund* in Sialkal region of northeastern Mizoram (Malhotra, 1990; Gokhale et al., 1998).

1.2.17 *Orissa*

The institution of SGs in the State is recognized by various names like *jahera*, *Thakuramma*, etc. Malhotra et al. (1997) and Malhotra et al. (in press) report 322 SGs from Semiliguda block of Koraput district.

1.2.18 *Rajasthan*

SGs are found from the western part of Rajasthan to the east of the Aravalli range. The SGs in Rajasthan are instanced by the *vanis* of Mewar, the *kenkris* of Ajmer, the *orans* of Jodhpur, Jaisalmer, Bikaner and the *shamlat dehs* and *devbanis* of Alwar. It is reported that *orans* account for 8 to 9 percent of the desert area (Mitra and Paul, 1994).

The tradition in Rajasthan is an ideal example of support of the tradition for ecosystem services. The resources in the groves are used in controlled fashion or only in case of emergency.

Most of these groves are also associated with streams (Pandey, 1998). whereas *orans* in the western arid tract are a major source of green fodder for the livestock as well as water. The arid districts such as Jodhpur, Jaisalmer, Bikaner support *orans* spread over huge areas often exceeding thousands of acres as in the case of *degrai oran* at village Rasla in Jaisalmer district (Gokhale et al., 1998).

1.2.19 *Sikkim*

SGs in Sikkim are attached to Buddhist monasteries called Gumpa Forest Areas (GFAs) which are managed by Lamas. Total number of SGs in Sikkim is 56 spread over 4 districts in the State. Most of the GFAs are not fenced, but in continuation with the surrounding protected areas, they are well protected, and use of resources vary from monastery to monastery (Chatterjee et al., 2000).

1.2.20 *Tamil Nadu*

Tamil Nadu has two important institution namely *kovilkadu* or SG, and *sthalavriksha* which are the sacred trees protected all over the State. In all, 448 groves have been reported from 28 districts of the State (Amrithalingam, 1998). Out of the districts studied, the eastern districts without any forest cover have more number of SGs than forested districts on the western side. More than 250 *sthalavrikshas* are documented. They belong to more than 70 species; most of them are trees, while a few are herbs (Paulraj, 1996). The study of 42 SGs in Pudukottai and Tanjore districts give account of 105 species belonging to 95 genera distributed among 44 families of flowering plants.

Terracotta plays a major role, representing the powers of renewal inherent in the earth and all the deities and votive offerings are made of clay. At the shrine of Mother Goddess people make offerings of terracotta horses to Ayyanaar, the village *kaaval kaaran* (watchman). The horses range from 12 inches to 20 feet or more in height, depending on the district, local practice and economic status of the devotees (Krishna, 1997).

1.2.21 *Uttar Pradesh*

In Uttar Pradesh, the areas like Gangetic plains due to highly commercialized agriculture have almost lost the tradition of SGs. The tradition has been reduced to worship of single tree species like *Ficus religiosa*.

1.2.22 *Uttaranchal*

The villages in the hills of Garhwal and Kumaon of Uttaranchal State have many sacred conservation traditions like *bugyal* (sacred alpine meadows), *dev van*, etc.

1.2.23 West Bengal

Das and Malhotra (1998) and Deb et al. (in press) have found many types of SGs such as *garamthan*, *shitalathan*, *harithan*, *sabitritan*, *santalburithan* and *jahera* along with sacred burial grounds. Over 670 SGs reported from Bankura, Birbhum, Midnapur, Purulia and Jalpaiguri districts of the state (Deb et al., 1997; Deb et al., in press.). These SGs are very small, generally less than an acre and are not used for harvest of any biomass. Bamboo groves are found in Jalpaiguri and Coochbihar districts.

1.3 Number and size Distribution of SGs

As noted in section 1.2, although SGs are known to be present in many States of the country, we however, do not as yet have even an estimate of the number of such groves in India. In Table 1, readily available data in terms. of number of SGs in India are presented. Pooling together all the data in Table 1, at least 13,720 SGs have been reported so far in India.

Table 1. Reported number of the SGs in India.

State	No. of SGs¹
Andhra Pradesh	750
Arunachal Pradesh	58
Assam	40
Chhattisgarh	600
Gujarat	29
Haryana	248
Himachal Pradesh	5000
Jharkhand	21
Karnataka	1424
Kerala	2000
Maharashtra	1600
Manipur	365
Meghalaya	79
Orissa	322
Rajasthan	9
Sikkim	56
Tamil Nadu	448
Uttaranchal	1
West Bengal	670
Total	13720

1. For references see section 1.2.

It may be pointed out here that this figure of 13,750 is only an indication of the extent and magnitude of the presence of SGs in the country. It is certainly difficult to make a guess regarding the total number of SGs in the country but in view of the known presence and pattern

of distribution of sacred groves in Chhattisgarh, Jharkhand, Orissa, Uttaranchal, Madhya Pradesh and West Bengal for which detailed inventories are not available, we strongly feel that the number of SGs in India is likely to be between 100,000 and 150,000 (Malhotra, 1998).

According to Gokhale et al. (1998), the total area of SGs in India as a whole, would be about 33,000 ha. or 0.01 percent of the total area of India. There seems to be some error in this estimate as just 4,415 SGs reported so far cover over 42,000 ha (Table 2). Although based on the rather incomplete data, it is not possible to come up with a reasonable estimate. However, it can safely be said that the area under SGs will be many times more than Gokhale et al. have estimated.

Table 2. Reported Area of SGs In India.

State	No of SGs	Area (ha.)	References
Karnataka			
Kodagu	1214	5947	Kalam,1996
Kerala	2000	500	Rajendraprasad,1995
Maharashtra	483	3570	Gadgil and Vartak,1981
Meghalaya	79	26326	Tiwari et al.,1998
Orissa	322	50	Malhotra et al., 1998
Rajasthan (1)	1	83	Singh and Saxena, 1998
(2)	8	158	Jha et al., 1998
Tamil Nadu	10	127	Swamy et al., 1998
Uttaranchal	1	5500	Sinha and Maikhuri,1998
West Bengal (1)	7	2	Malhotra et al., 199&
(2)	290	15	Deb et al, in press
Total	4415	42278	

1.4 Ownership and Management of SGs

The literature on this aspect, though sparse and scanty, suggests the existence of a wide variation in the legal status and management of SGs in the country. It appears that in terms of the legal tenurial rights, SGs fall under three categories:

- SGs under the control of State forest departments;
- SGs under the control of revenue and other government departments; and
- Privately owned SGs.

A large number of SGs in Maharashtra are under the control of the Forest Department. Gadgil and Vartak (1981) have documented 223 such groves. Legally all sacred groves in Meghalaya are under the control of District Councils (Tiwari et al., 1998).

Kalam (1996) reports that *devarakadus* in Kodagu district of Karnataka are under the control of the Revenue Department. Godbole et al. (1998) and Roy Burman (1996) mention that many SGs in western Maharashtra are under the control of the Revenue Department. Roy Burman further mentions that a few thousand temples and their groves in western Maharashtra were brought under the scrutiny of the government by forming the Paschim Maharashtra Deosthan Prabodhan Samiti in the 1960s.

Several SGs are also privately owned by a family, a group of families, a clan, or a trust body. Chandrashekara and Sankar (1998) give examples of such groves in Kerala: Ollur *kavu* is owned by a single family, the S.N. Puram grove owned and managed by several families, and the Iringole *kavu* owned and managed by a temple Trust.

There are significant variations in terms of management of the SGs, i.e. upkeep, protection, performance of rituals and festivals, conflict resolution and harvesting of biomass. To cite a few examples: *orans* in Rajasthan are usually managed by Gram Panchayats (Jha et al., 1998); the Haryali grove in Garhwal is managed by a temple committee consisting of members of three villages (Sinha and Maikhuri, 1998); Roy Burman (1996) mentions that among the Mahadeo Kolis of Pune district, the management is usually vested with the clan elders, whereas among the Kunbis of Kolhapur district the groves are managed by village elders; the *Kantabanshini Thakurma* SG in Koraput district is managed by two clans of the Proja tribe (Hemam et al., 1997). Clan-based management appears to be a widespread practice among the Santhal, Oraon, Munda, Kharia and other tribes of central, eastern and north-eastern India.

1.5 Ethnicity and Sacred Groves

The process of peopling of India stretching over indeed a long period, brought in not only different human biological traits, but also a variety of cultural, religious and technological characteristics. Contemporary India is an agglomeration of over 40,000 endogamous groups (Malhotra, 1984). An estimated 37,000 groups are structured in the Hindu caste system. Each group (caste) belongs to one of the five *varnas*: Brahmin, Kshatriya, Vaishya, Sudra and Pancham. The remaining 3,000 groups constitute different tribes, religious communities and other communities like Parsis and Siddis who immigrated in recent history. In other words, there is a bewildering heterogeneity in the Indian society in terms of religious beliefs, culture, language and pattern of livelihoods.

In this section we examine if there exists any pattern in terms of association of the institution of sacred groves and ethnicity.

A few tentative inferences in terms of association of SGs with different ethnic groups that can be drawn from the materials described earlier are:

(i) that sacred groves are found among both tribals and non-tribals; (ii) there is regional variation in terms of ethnic association; (iii) the association with castes of different *varnas* is not clear; (iv) in States like Bihar, Madhya Pradesh, Orissa, West Bengal, etc., where we have both tribals and non tribals the presence or absence of groves in the non-tribal areas is not clear.

1.6 Gender and SGs

The role of gender in SGs can be analysed at least at four levels: (a) the gender of the deity associated with the sacred groves, (b) the gender of the priest serving the groves, (c) the nature and extent of access to men and women in various rituals, festivals and ceremonies that take

place in the groves, and harvest of biomass from the groves, and (d) the role of gender in the management of the SGs.

A random literature search reveals that by and large a majority of the SGs are associated with female deities. Gadgil and Vartak (1976) found, among 21 SGs in Maharashtra, 15 associated with goddesses and 5 with male deity (phallic worship) and one with ancestor worship. Chandran (1995) reports occurrence of both male (Bhutappa, Jatakappa) and female (Choudamma) deities associated with sacred groves in Karnataka. In southwest Bengal and in Koraput district of Orissa, the deities are mostly female (Hemam et al., 1997; Malhotra et al., 1997).

Regarding the gender of the priest, it appears that without an exception the priesthood rests with males (see Vartak and Gadgil, 1981; Roy Burman, 1996; Godbole et al, 1998; Sinha, 1989 and others). However, this aspect needs to be further studied, as many studies do not provide explicit details on the gender of priests. Of great interest will be the situation among the matrilineal societies such as Nairs in Kerala, Khasis and Garos in northeast India.

The data in terms of access to sacred groves by women are also very scanty. It appears that generally women are not permitted into the groves after attaining puberty. However, women's entry is not restricted in West Bengal SGs (Deb et al., in press). Roy (1912) while describing sacred groves among the Oraon of Chhotanagpur, mentioned that the main festival associated with *sarana* is *Sarhul*. However, women are not allowed in the *sarana*, but take part in dance at the akhara which is located close to the grove (also see Fernandes, 1993 for more details). Roy Burman (1996) has reported a similar phenomenon among the Mahadeo Kolis of Pune district and among the Kunbis of Kolhapur district in Maharashtra. Malhotra et al. (1997) have observed taboo against entry of women in the sacred groves among the tribes of south-west Bengal and among the tribes of Koraput district of Orissa.

Although many studies have dealt with harvesting of biomass from SGs, it is not clear whether women are allowed to gather the same (see, among others, Unnikrishnan, 1990; Mitra and Pal, 1994; Viji, 1995).

Finally, nothing is known at all about the kind of role women play in decision-making regarding management of SGs. It will be of immense value to examine whether women are represented in the numerous trust bodies that are managing SGs, in particular in Maharashtra, Karnataka and Kerala. The limited information available from the studies in West Bengal and Orissa (Deb et al., 1997; Deb et al., in press; Malhotra et al., in press) suggests practically no role of women in the management of SGs.

1.7 Interface between People and Sacred Groves

In this- section we examine the role of sacred groves in the lives of the people from four aspects: (i) religious; (ii) socio-cultural; (iii) economic, and (iv) political.

1.7.1 Religious

There is a category of SGs among many communities that are associated with certain deities. In such groves annual rituals and ceremonies are performed to propitiate the deity. During these rituals sacrifices of animals (such as fowl, goat, pig, buffalo) are made. In other sanskritized groves offerings of vegetable items are made. These rituals are performed for the well-being of the people, animals, crops, etc. Details of such offerings are available in the anthropological literature.

The presiding deities are believed to look after the well-being of the people, and also protect the groves by administering punishment (mostly death) to the offenders. The practice of oath/vow taking in the groves is fairly widespread in the country (among others see Roy, 1912; Sisodia and Malhotra, 1963; Kalam, 1996). People take vows for wish-fulfilment when there is a crisis, particularly bearing on health, and offerings mostly of terracotta of animals, birds, humans, etc., are made. In some of the groves of West Bengal heaps of such terracotta offerings of elephants and horses are found (Malhotra and Das, 1997).

Table 3. Hierarchical Levels of Sacred Groves in India¹.

	Levels of Sacred Groves	Management of Sacred Groves
V	Pan-Indian	By trust
IV	Regional	By trust
III	Local	By whole village/community/local committees
II	Village	By whole village
I	Intra-village	By separate communities

I Modified from Malhotra, 1998.

There seems to be a hierarchy of sacred groves in terms of their geographical influence. At least five such hierarchical levels are discernible (Table 3). Inhabitants of a village or even different ethnic groups! different castes in multi-ethnic situations have their own groves. Roy Burman (1996) reports the existence of such groves for different castes in villages of Kolhapur and Pune districts. Malhotra et al. (1997) observed in Kendua village of Jamboni taluk of Midnapore district where Kora and Santhal communities have their separate groves. Such a pattern seems fairly widespread among the tribes of Jharkhand, Chhattisgarh and Orissa. Such groves are mostly managed by the local community(ies), and owned by a family, group of families, or a clan.

A second category of SGs is represented by those managed by the entire village community, regardless of ethnic composition of the village.

The local-level groves are where people from somewhat larger geographical areas, usually a few neighbouring districts come to worship a particular grove. Examples of such groves are *Iringole* in Kerala and *Kantabanshini Thakurma* in Orissa. Such groves are usually managed by local community and/or committees.

The regional-level sacred groves are where people from several districts/ States participate. Such an example is the Sabarimala sacred grove in Kerala. Such groves are usually managed by temple trusts.

The next higher level of SGs involves those of Pan-Indian character where people from many parts of the country participate. An example of such groves is the Hariyali sacred grove in Garhwal Himalayas (Sinha and Maikhuri, 1998). Such groves tend to be larger and managed by temple trusts.

Another category of SGs includes those that are believed to be abodes of ancestral spirits. Often these groves are, in fact, burial grounds. Such groves have been reported from a number of places. A few illustrative examples are: *masani* SGs, among the Maler of Bihar (Vidyarthi, 1963); SGs in Sangameshwar tehsil of Ratnagiri district in Maharashtra (Godbole et al., 1998); north Kerala SGs where ancestor worship is performed with *theyyam* ritual (Unnikrishnan, 1990); *sasan* SGs as burial grounds in Chhotanagpur (Fernandes, 1993); SGs among the Bhils of Ratanmal (Nath, 1960). It may be mentioned that sometimes a grove may serve both the functions, i.e. deity worship and ancestor worship. Unlike the groves associated with deities, the groves associated with ancestor worship, in particular burial grounds, do not seem to have a hierarchical pattern.

1.7.2 Socio-cultural

SGs have important socio-cultural functions, in addition to the religious functions. Several festivals are performed at SGs. The literature on this subject is indeed very vast, and detailed accounts of socio-cultural functions performed are described in several earlier ethnographic studies. Just to mention a few as illustration: Nath (1960) mentions that once a year on the occasion of Deepavali, offerings of food and liquor are made in groves among the Bhils of Ratanmal; Deb and Malhotra (1997) report that, among the tribals of southwest Bengal, social gatherings take place in these groves on the occasion of Salui and Karam festivals, as well as wedding ceremonies; Vidyarthi and Rai (1997) report that different tribes of Bihar celebrate their major festivals at the SGs; marriage ceremonies of the Mahadeo Koli of Pune district of Maharashtra are held in their SGs. Fernandes (1993) has stressed on the role of sacred groves in the socialization of the youth among the tribes of Chhotanagpur; Godbole. et al. (1998) report that festivals like Holi, Navratri, Devdiwali are performed in sacred groves in Ratnagiri district of Maharashtra; Troisi (1978) mentions that the association of a village with *jaherthan* expresses the unity of the group. No two villages share the same *jaherthan*, and this serves as an important criterion to ascertain village membership and geographical boundary; Paranjapye (1989) highlights that the function of the SGs is to maintain a caste hierarchy within the village. The clan control over resources is signified by the SGs among the Mahadeo Koli of Western Maharashtra (Roy Burman, 1996).

The purpose and meaning attached to various rituals, ceremonies and functions performed in SGs are summarised in Table 4.

Table 4. Services and Functions of SGs¹.

Types	Functions provided by SGs
1. Religious	Propitiation of deity/spirits Propitiation of ancestral spirits Propitiation of totems
2. Secular	
2.1 Cultural	Provides cultural space to the community as a common property resource
2.2 Political	Assertion of group identity Assertion of group solidarity Establishing new alliances
2.3 Health	Fertility and Paternity Well-being of individual/family Well-being of community
2.4 Economic	Good rainfall Good agricultural production Well-being of crops and animals Success in hunting Gift exchange
2.5 Psychological	Moral support and guidance

1. Modified from Malhotra et al. (1998).

Many Cultural beliefs relating to fertility and paternity find expression in vows and prayers made at SGs. Similarly, different moral support and guidance for individuals are derived from the cultural value associated with the SGs.

1.7.3 *Economic*

Several economic activities take place in SGs. Also certain community activities with economic implications are associated with the SG (see Table 4).

a) *Harvesting of biomass*

There is a general belief that biomass is not harvested from the SGs. This is certainly true in many SGs found across the country. Gadgil and Vartak (1976), Roy Burman (1995) and Godbole et al. (1998) report such groves in the Western Ghats of Maharashtra. Malhotra et al. (1998) report such groves in southwest Bengal and in Koraput district of Orissa. Pushpangadan et al. (1998) report the existence of numerous groves in Kerala from which plants and animals are not harvested, and Swamy et al. (1998) report such groves in Tamil Nadu.

However, there are many groves from where biomass is extracted, and thus the local communities derive certain direct economic benefits from the groves. A few illustrative

examples are: Singh and Saxena (1998) and Jha et al. (1998) report that in many *orans* people graze their animals; Godbole et al. (1998) report collection of dead wood and dried leaf litter and harvesting of certain species of trees (*Caryota urens* and *Mangifera indica*) from groves in Ratnagiri district of Maharashtra; Malhotra et al., (1997) report 192 out of 322 groves from Koraput district from which dead wood and several non-timber forest products are gathered; Unnikrishnan (1990) observes that certain plants extracted from SGs of Kerala provide livelihood to many artisans; Gadgil and Vartak (1976) report that villagers of Tunbad in Kolaba (now Raigad) district use the bark of *Entada phaseoloides Merr.* for the treatment of cattle against snake bite; wood is also extracted from many groves dedicated to ancestor spirits for cremation (Mitra and Pal, 1994).

b) *Gift exchange*

Exchange of gifts is an important social activity, which takes place at SGs during certain festivals. Malhotra et al. (in press) report that villagers in Koraput district of Orissa engage in gift exchange at their SGs during the annual festival associated with the SGs.

c) *Activities with economic implication*

Deities/spirits of SGs are propitiated by devotees with a view to ensuring success in hunting and good harvest. Rituals are also performed in SGs to bring in good rainfall, health of livestock and fending off disasters. Kalam (1996) mentions offering of miniature images of cattle and buffaloes to the SC deity in Iyappa *devarakadu* by villagers in Kodagu district of Karnataka, to keep their livestock healthy.

1.7.4 *Political*

This section draws heavily on a series of articles by Roy Burman (1992, 1995, 1996), which have demonstrated the political dimensions of SGs in the local and regional context.

Sontheimer (1989) showed linkages of forest deities of the Western Ghats with the pastoral nomads as a means of drawing their territorial affinity. Kosambi (1962) observed that SGs are usually found along the preagrarian trade routes and cross-roads. Sawant (1990) wrote that SG at Phondaghat in Sindhudurg district of Maharashtra was a resting place for traders and that the troops of Shivaji passed through it while depredating the coastal townships. Roy Burman (1996) described that at Jhinji mahal sacred grove in Kolhapur district, Shivaji had taken shelter before attacking Shayasta Khan in Pune. This grove has been a hiding place for the troops and also their training centre. Sacred groves have often been supported by the local rulers. Shau Chattrapati, the king of Kolhapur, use to support a sacred grove dedicated to Amba Devi (Roy Burman, 1992). Kalam (1996) has written about the State patronage of sacred groves in Kodagu district of Karnataka.

Roy Burman (1992) mentions the strategic location of SGs along the trade routes in Meghalaya where the moral authority of the priests-chiefs facilitated the flow of commodity. As

noted earlier, village membership among the Santhal and the geographical boundary of their village are defined by the SG (Troisi, 1978).

Hemram (1983) states that *sarna dharma* (religion) brought together discrete ethnic groups of Chhotanagpur in to a common platform for asserting their rights to self-determination. The *sarna dharma*, in fact, helped them in consolidating their common identity and solidarity between the Christian and non-Christian tribes of the region. Mitra and Pal (1994) observed that *sarana* was one of the basic factors that stalled the Koel-Karo dam project in Bihar a decade ago.

Roy Burman (1995) has also highlighted this aspect of self-assertion among the Gonds of Gadchiroli district of Maharashtra. The Gonds have revived the Danteshwari sacred grove to assert their identity and right of self-determination. Self-assertion of the tribes through sacred groves is not always strong. D.N. (1990) interprets the construction of temples in the groves or replacement of local deities by the idol of Hanuman as reflecting subjugation and marginalisation of the tribal communities by the mainstream Hindu culture.

2. Biological and Ecological Dimensions

A number of scholars have studied biological and ecological value of SGs in the country. The literature is too vast to be described here. We shall, therefore, mention only some of the main findings as illustration. The materials are described under the following heads:

- 2.1 Biological Value
- 2.2 Ecological Services
 - 2.2.1 Recharge of aquifers
 - 2.2.2 Soil conservation and nutrient cycling.

2.1 Biological Value

As noted in section 1.1, the institution of SGs is very ancient in the country. Access to and interference with SGs has been culturally restricted and, thereby, reduced the human impact in terms of harvesting of natural resources. The consequence of such restriction has been that SGs have evolved as important reservoirs of biological diversity and permitted. the complex and diverse array of ecological processes to continue uninterruptedly over long period of time.

Many SGs constitute pristine vegetation, and are particularly rich in trees and associate groups of organisms, like epiphytes, amphibia, reptiles, birds, butterflies etc.

A number of studies have emphasized that many SGs are climax forests, and probably constitute the only representative of near-natural vegetation in many parts of India. Such island of climax vegetation amidst a degraded landscape can be seen in many parts of the Western Ghats, Koraput and Kalahandi districts of Orissa and South-west Bengal. Several studies have shown that many groves in Meghalaya (Tiwari et al., 1998), Kerala (Chandrashekara and Sankar,

1998), Maharashtra (Gadgil and Vartak, 1976) and Himachal Pradesh (Singh et al., 1998) harbour rich floral and faunal biodiversity. Pushpangadan et al (1998) demonstrated that the biological spectrum of groves in Kerala closely resembles the typical spectrum of tropical forest biodiversity. For example, the SGs occupying only 1.4 sq. km contained 722 species of angiosperm, compared with 960 species occurring in 90 sq. km of the Silent Valley forest.

With the continuing destruction of forest all around them, the SGs have become fragmented habitats housing a variety of genetic pools and became the last refuge for many threatened endangered and endemic plant and animal species. Tree species like *Phoeba hainsiana* (vulnerable), *Rhus hookeri* (endangered) and *Flacourtia cataphracta* (endangered) have been found to be well represented in, two sacred groves in Manipur valley. *Syzygium travancoricum*, an endemic tree, reported from the low-level evergreen forests of Kulathupuzha (South Kerala has been totally eliminated from its type locality. Today, only a few plants are reported thriving in some sacred groves of Pathanamthitta district and in the marshlands of Quion-Asramam in the southern Western Ghats of India. Haridasan and Rao (1985) reported at least 50 endangered and rare species in SGs of Meghalaya. Sacred groves of Kerala are also found to harbour a number of plant species that are wild relatives of many crop species. These wild relatives are important for improving the cultivated varieties of plants.

Sacred groves, in general, act as a nursery and storehouse of many of the ayurvedic, tribal and folk medicines. Species not under any immediate risk of extinction, if preserved in SGs, may have great potential of diverse uses in the future. The SGs may also serve to preserve genotypes which may be useful in forest tree-breeding programmes.

The sacred forests are also of great forestry interest as indicators of the natural productivity of the region. Ecologically valuable species like *Albizia lebbeck* and *Ficus glomerata*, which conserve high amount of nitrogen, phosphorous, magnesium and calcium in their leaves, are found in several SGs of Manipur. Keystone species that contribute to the maintenance and enhancement of biodiversity, are also species that are socially valued by local communities for cultural or religious reasons, and often found in SGs. In' *orans* of Rajasthan, the khejari (*Prosopis cineraria*) is a keystone species, inseparably linked to the survival of many other species, and occupies a special position in Rajasthani culture.

Kunstleria keralensis, a climbing legume, reported from a sacred grove in southern Kerala, is a species found only in that SG (Mohanan and Nair 1981). *Belpharistemma membranifolia*, *Buchanania lanceolata* and *Syzygium travuncoricum* are rare species found only in some SGs of Kerala (Nair and Mohanan, 1981). Mohanan also discovered a rare species of *cinnamon*, *Cinnamomum quilonensis*, in some of the *kavus* of Alapuzha district in Kerala (Unnikrishnan, 1995). The Kallabbekan SG in Kumta taluk, Karnataka, over 50 ha in extent, despite being in the midst of arecanut-spice gardens of a populated village, is rich in endemics like wild nutmegs (*Myristica malabarica*), *cinnamon*, *Garcinia gummi-gutta* and wild pepper (Chandran et al., 1998). A new species of frog, *Philautus sanctisilvaticus*, has recently been reported from Amarkantak sacred grove, Madhya Pradesh (Das and Chanda, 1997).

Many animal species including birds that are otherwise threatened or becoming rare find a safe refuge in many a sacred groves. The *orans* in Rajasthan, managed by the Bishnoi community, provide protection to the Indian gazelle (*Gazella gazella*), blackbuck (*Antelope cervicapra*) and to the migratory bird Demoiselle crane (*Anthropoides virgo*). A similar study by Deb et al. (1997) has shown that a number of local bird species find refuge exclusively in relict SGs of West Bengal.

2.2 Ecological Services

Some of the important ecological services provided by the SGs that have been reported in the literature are summarized below.

2.2.1 Recharge of aquifers

Many SGs hold water resource in the form of springs, ponds, lakes, streams or rivers. Not only that, but the vegetative mass of the grove itself retains water, soaking it up like a sponge during wet periods and releasing it slowly in times of drought. It is evident that one of the important ecological roles of these groves is to provide a more dependable source of water for the organisms living in and around the SGs (Puspangadan et al., 1998). The ponds and streams adjoining the groves are often perennial and in some cases, act as the last resorts to many of the animals and birds for their water requirements, especially during dry seasons. Another function may be to reduce the incidence and intensity of forest fire, at least in some climates. In addition, transpiration from the SGs vegetation would increase atmospheric humidity and reduce temperature in the immediate vicinity and produce a more favourable microclimate for many organisms (Khiewtam and Ramakrishnan, 1989).

2.2.2 Soil conservation and in nutrient cycling

Sacred groves play a crucial role in soil and water conservation. The Mawsmi sacred groves in the Cherrapunji ecosystem receive very high rainfall. With a rapid litter decomposition rate, nutrient release in the soil of these groves is very high. The soil itself has little nutrients to support a large biomass of the sacred grove. The fine root mat developed on the surface layers of the soil is important for supporting the large above-ground biomass and for tight cycling of nutrients. Many microorganisms, invertebrates, fungi, etc. flourish and a vast array of species not hitherto indigenous to the groves may also colonise and thrive. The root mat prevents the nutrients from leaching out. The land surrounding the SGs in this area, which is devoid of necessary root mat and litter decomposition, can no longer sustain vegetation (Khiewtam and Ramakrishnan, 1989).

All of these factors indicate that the conservation of sacred groves is essential for maintaining local/regional biodiversity, the comprehensive health of a landscape, and preserving the socio-cultural integrity of local communities. The existing SGs thus provide far greater benefits than their small size would otherwise indicate.

3. Threats and Opportunities

This ancient and widespread institution, as revealed by several studies, shows signs of weakening in terms of both cultural and biological integrity in many parts of the country. The nature and extent of threats and pressures are often region and even grove-specific. The magnitude of these threats therefore varies from region to region as well as from one type of grove to another. In this section we summarize the nature of threats reported in the literature.

3.1. Threats

The reported threats can be grouped under the following heads, and contain only illustrative examples rather than complete enumeration.

Commercial forestry : Over the past two centuries, in many parts of the country the local people have lost their customary rights of forest management to the government. Many sacred groves were destroyed under commercial forestry operations.

Development projects: Some of the sacred groves that fell under government vested lands, were destroyed when townships grew. Railroads and highways have also taken their toll of many sacred groves. Others were flooded by big dam projects.

Shift in belief system: In some cases, conversion to other religions has resulted in the degradation of sacred groves.

Sanskritisation: In many places, local folk deities have been, and continue to be, replaced with Hindu gods and goddesses. This has resulted in the erection of a temple in the sacred grove.

Pilgrimage and tourism: The integrity of many groves with regional or pan-Indian character, has suffered due to the influx of large number of pilgrims and tourists.

Removal of biomass: In many sacred groves, removal of biomass and cattle grazing is permitted. Continuation of these practices over generations has resulted in the dwindling of the groves.

Encroachment: Many instances are reported where the groves have been encroached by local communities and/or by various government line departments as well as by people migrating from outside.

Modernisation and market forces: The most recent threat to sacred groves comes from the process of modernisation. Local traditions are being challenged by westernised urban cultures. Modern education system fails to instill respect for local traditions. As a result, the institution of sacred groves is losing its cultural importance for the younger generation of local people. The spread of market economy has resulted in the denial and erosion of separate identities of local communities. The lure of short-term commercial gains has prompted destruction of traditional

resource base, including the sacred groves.

Fragmentation and perforation : Many of the SGs are fragmented and perforated by roadways, extension of power lines, or reclaimed land for agriculture. Such fragmentation leads to loss of species, and disruption of ecological functions.

3.2 Opportunities

Despite all the threats described above, SGs are still alive in many parts of the country. Local people maintain these groves as a part of the culture. This fact indicates that there are ample opportunities for strengthening this institution.

In some areas especially Manipur, the institution has in recent years been revived. Elsewhere, especially in Rajasthan, West Bengal, Chhattisgarh and Jharkhand new groves have been established. The concept has been extended, especially in Karnataka to establish through plantations of pavitra vana (sacred forest); groves have also been established around temples and schools. In Kerala new partnerships have been developed among the grove trustees, NGOs and local people to protect the forest. In Madhya Pradesh, Forest Department, in collaboration with local people, has fenced sacred groves. In Ratnagiri district, Maharashtra and Semiliguda block of Koraput district in Orissa, through the efforts of NGOs, networks among functionaries of SGs are being created. An increasing number of scientists from different disciplines are studying various aspects of the groves. A lot more opportunities are being created to provide fora inside and outside the country in the form of workshops, conferences, publications for exchange of views among a wide range of people. International agencies like UNESCO, the World Bank and Ford Foundation have included SGs in their agenda. The media is currently devoting a lot more space to this institution than before. The level of awareness among different sections of the population regarding the cultural and biological importance of SGs is increasing.

Realizing the cultural, biological and ecological importance of the SGs in our country and the threats faced by this ancient institution, the Indira Gandhi Rashtriya Manav Sangrahalaya (IGRMS) Bhopal has undertaken a number of activities in collaboration with many academic institutions and NGOs like the Indian Statistical Institute, Calcutta; Centre for Interdisciplinary Studies, Barrackpore; Dept. of Anthropology, University of Pune; Indian Institute of Science, Bangalore; Kerala Institute for Research and Training in Anthropology and Development Studies, Kozhikode; St. Joseph's College, Thiruchirapalli; Applied Environmental Research Foundation, Pune; Indian Institute of Forest Management, Bhopal; North Eastern Hill University, Shillong; World Wide Fund for Nature-India and many others.. The museum has Installed in 1999, on its 200-acre campus at Bhopal, replicas of SGs from Arunachal Pradesh, Chhattisgarh, Kerala, Maharashtra, Manipur, Meghalaya, Rajasthan, Tamil Nadu and West Bengal. Plants from groves of these States were planted in their respected replicas on IGRMS campus, after a very careful selection, taking into consideration the geo-climatic condition of Bhopal. These groves were ritually established, accompanied by dances and ceremonies performed by the local communities of the respective States. These SG replicas are meant to serve as living nurseries of ancestral and community identity, purity and longevity in the community habitats.

An indoor exhibition has been developed on SGs, using photographs, maps and charts etc. depicting various aspects of SGs. A travelling exhibition has also been created during 1999-2000, using 67 panels of photographs and maps (Malhotra et al. 2000). The objective of this travelling exhibition is to interact with local people and different organizations to learn more about SGs of the country, and to strengthen the diverse SG-related local management practices and knowledge systems.

A three-day Sacred Grove Festival was organized in January 2000, involving 185 participants from 15 States. The Festival provided, for the first time, a platform to different stakeholders like grass-roots level functionaries associated with SGs, foresters, scientists and media people to discuss various aspects of the SGs including formation of a network of stakeholders, developing region/grove specific field based activities, publication of workshop proceedings, etc.

This initiative is a part of the IGRMS effort to put in place an ecological history exhibition at the museum in Bhopal; to demonstrate an important dimension of the natural resource management strategies adapted by different communities.

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