Sacred Forestry: The Case of Rajasthan, India

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Abstract

It is estimated that about 25,000 sacred groves and other sanctified ecosystems, varying in size between 0.1 ha. to 500 ha., are in existence in Rajasthan. This is based on the extrapolation of a study based on the ratio of 1027 recorded groves and number of villages of Rajasthan. This is a preliminary conservative estimate; the actual number may be substantially more than this number. This paper is a review of various studies of sacred landscapes conducted in Rajasthan.

Introduction

Sacred groves are known under various names in Rajasthan as sacred groves (*deora, malvan, deorai, rakhat bani, oran*, etc.), sacred corridors (*deo ghats*), temple forests (*mandir van*) and sacred gardens (*baugh*).

Even though we have few studies, sacred groves in particular, however, are among the most researched areas. Dietrich Brandis, as early as 1887, gave initial information on sacred groves of Aravallis. He wrote, 'though very few papers have been published on sacred groves, this does not mean that such areas do not abound in India'. Commenting on the sacred groves of Rajasthan, particularly Rajputana and Mewar area, he wrote that in Pratapgarh and Banswara such groves are common. Here trees of *Anogeissus pendula* abound. People do not cut wood for personal use. Only dead and fallen trees are removed for religious work such as the repair of the temple or funerals. Joshi (1995) writing on the ethnobotany of Rajasthan provided interesting insights on tribal traditions of maintaining sacred groves. We studied sacred groves of southern Aravallis between January 1991 and August 1994. Information on ecological, social, religious and economic aspects was collected in addition to various traditions of indigenous resource management. The available resources, biodiversity, social beliefs, threats and factors responsible for biodiversity depletion, economic status of village people, suggestions for conservation of sacred groves and joint forest management were studied in the context of the sacred in nature. We also carried out a study at Kota, Bundi, Jhalawar, Bhilwara, Chittaurgarh, Rajsamand and Tonk (Pandey 1996, 1997, 1998). AFC (1997) published a report on sacred groves of Ajmer and Udaipur Districts of Rajasthan. Recently two case studies of Orans in western Rajasthan were carried out by Jha et al. (1998) and Singh and Saxena (1998).

Sacred Groves

For this review, we have classified the sacred areas in to sacred groves, sacred corridors, temple forests, sacred gardens and inhabited groves.

Sacred groves in Aravallis and Vindhyas can be classified into three major groups. In the first group we classify groves located near the village and close to a water source. Such groves are also at the top of small hillocks in Aravallis, where people worship Bheruji, Bawsi and Mataji. Khanpa Bheruji, Kukawas Bheruji, Badi Roopan Mata etc. are the example of such sites in Udaipur. In the Vindhyan tract of Kota Bundi, Baran and Jhalawar such groves abound.

The second group of groves is dedicated to Lord Mahadeo. Vegetation of the entire watershed is often protected as groves. Sometimes part of the vegetation in a watershed is protected. Large trees and a water source

Figure 1
Sacred corridor

are the main characteristics of these groves. Water sources developed as open and step wells (Bawdi) may be seen at Ubeshwarji, Kamalnath, Gautmeshwasji, Taneshwarji and Jhameshwarji. Sometimes both groups can also be found in the same village.

The third type may be as a single tree. In Kotra forest range several large trees of *Ficus benghalensis* are seen. Because of development of aerial and prop roots these trees look like a grove. The tradition of protecting Peepal, Gular and Bargad trees is not only found in Rajasthan but also in other states of India. The tradition is also reported from other Asian and African countries.

In northern parts of Aravallis various forms of sacred groves are maintained. These are known as *kankar bani, rakhat bani, dev ouranya, vall* and *dev bani*.

Large tracts of tree-bearing land in otherwise desertified western Rajasthan are called *Orans*. These *Orans* are identical to sacred groves in Aravallis and they offer similar advantages. One of the finest examples of *Oran* is Ramdeora in the Jaisalmer District in Rajasthan. Species in most of the *Orans* are *Prosopis cineraria*, *Zizyphus mauritiana* and *Salvadora* sp. In Jaisalmer District most of the *Orans* support *Caparris aphylla*. Shrubs include *Calotropis procera* in Jaisalmer and *Zizyphus* sp. in Jodhpur Districts. However, comparatively sacred groves in Aravallis and Vindhyas are larger in area coverage.

Important *Orans* in Sirohi, a semi-desert district in Rajasthan, include Pichheshwar Mahadeo near Pindwara, Voreshwar Mahadeo in Sheoganj, Sarneshwar Mahadeo near Sirohi (famous for its step-well), Mochal Mataji in Sheoganj (particularly famous for animals like Chinkara and Neelgai), Baleshwari Mataji Oran in Pesua village (famous for a very large Rayan tree) and Varada Hanuman ji which supports several old *Prosopis cineraria* trees.

Figure 2
Sacred garden

Origin

Scholars are not unanimous about the origin of sacred groves. It is often believed that during shifting cultivation a part of the forest is left undisturbed. Here all the species found in the area are protected. These areas might have developed as sacred groves (Hazra, 1974 & 1980, Gadgil & Vartak, 1976). Such sacred groves often protect watersheds and water sources. There is a popular theory that sacred groves that protect a watershed or water source might have originated because of the people's belief that a deity located near the grove yields water for agriculture. However, it is also possible that groves are the result of the reasoned assertion rather than the instinctive behaviour of the communities. As an editorial in Down to Earth (1994) points out, 'To use sacred groves as an assertion that people in India and other tropical countries have been aware, from very early times, that their forests are ecologically fragile is a statement of the obvious. The decline of forest cover has undoubtedly grave consequences. Denuded of tree cover, tropical lands move quickly towards infertility and erosion. Sacred groves uphold the notion that nature must be harnessed or used only within limits.'

In a state like Rajasthan, where water is scarce for farming, animal husbandry and drinking purposes, it is understandable. Forests in hills reduce the runoff and help in ground water recharge. The water thus becomes available in the Bawdi (step-well) or pool located within the sacred grove during the lean months. Water also brings minerals and fertilisers in rich quantities. It is then logical that such resources are protected and conserved by the people. People might have institutionalised these arrangements during the course of time by attaching sacred value to it, to make collective management easy and long-lasting. Sacred groves are the result of a complex ethno-scientific thinking of the local communities (Pandey, 1996).

Biodiversity and resource use

Floral biodiversity in scared groves is very rich. Sacred groves not only yield several non-timber forest products, they also harbour multiple-use livelihood goods. Resources that are traditionally obtained from trees and plants located in sacred groves include fodder, fruits, dry fallen wood, seeds and ethno-medicine. Sacred groves are the important source of water for traditional irrigation systems in Aravallis.

These areas also provide habitat, water and nest-sites for wildlife and birds. Several species of honey-bees nest in large trees in sacred groves. Honey not only provides livelihood to the people who collect and sell it in the local market, it also saves bees from local extinction. Thus Peeple (*Ficus religiosa*), Bargad (*Ficus benghalensis*) and Gular (*Ficus glomerata*) trees are important for sustainability of the honey industry and local employment. Important trees like Neem (*Azadirachta indica*) abound in sacred groves. Neem is an important ethno-botanical tree. Khajjur (*Phoenis* sp.) trees provide carbohydrate in the form of dry fruits to the local people. It also gives them employment through the collection and sale of leaves used for broom-making.

Khajjur groves located near Deola and Zhed are some important roosting places for fruit-bats. Several cavity-nesting birds excavate their nest in these trees. Large trees in forest areas in Aravallis are becoming rare. Trees in groves provide nest and roost-sites for birds that help farmers by eliminating insect pests. One of the studies found that sacred groves of Aravallis provide cavity nest-sites to three species of parakeets, seven species of owl, one species of kingfisher, five species of woodpeckers, two species of barbets, two species of mynas and two species of tits. It also offers nest sites for one species of roller, tree creeper and hoopoe. It is also believed that seven other species could be breeding in these areas; however, no substantial evidence was available during this study.

Some sacred groves support only one species of trees. e.g. Malpur, Rama Rathore, Valiakheda and Dhaikhera harbour teak trees (*Tectona grandis*), while Zed and Devla groves support *Khajjur* trees. Sacred groves in Vindhyas mainly consist of Dhok (*Annogeissus pendula*), Khakhra (*Butea monosperma*) in the hills and undulating plains. However, sacred groves along the water streams mainly consist of Arjun (*Terminalia arjuna*), Jamun (*Syzygium cuminii*).

Karneshwar Sacred, located in the outskirts of Kota, is one of the finest examples of agrove located along the stream. It supports at least 53 species of birds and several other species of animals. It has a water pool where several species of fish, water birds and waders reside. Species of trees include *Terminalia arjuna, Anogeissus pendula, Diospyros nelanoxylon, Syzygium cuminii, Mangifera indica, Ficus religiosa, Ficus benghalensis, Ficus glomerata* etc. Several species of cavity-nesting birds excavate nests.

The Dardevi sacred grove in Kota supports lofty trees of *Terminalia arjuna, Mitragyna parvifolia, Diospyros melanoxylon* and *Syzygium cuminii*. The presiding deity is the Dardevi Mata, the family goddess of the erstwhile ruling family of Kota. Now, it is the only known natural habitat of *Pandanus* species in Kota District.

Jharan Mahadeo sacred grove in Jhalawar is situated along the stream leading to a large tank that ensures round the year supply of water to the city of Jhalawar. This is the only green patch in the area. It is important because it protects catchment that might otherwise be silted very quickly in the absence of vegetation. Rare plants include *Bambusa hamiltonii* and *Scleichera oleosa*. It is also important because it is a de facto *sanctum sanctorum* of threatened plants, all of which have become extinct in the adjoining area outside the grove. The Jharan Sacred Grove is also an indicator and benchmark of forests that might have existed in the region. Today, it is a natural laboratory, a habitat island, a genebank, and a store-house of ethno-medicine. There is a perennial water spring. The Forest Department has run a forest nursery inside the groves for the last 50 years for the production of seedlings for plantations and distribution. This ensures the survival of the grove in its original condition.

Management and religious belief

People do not harm sacred groves mainly because of socio-religious traditions and fear of the unknown, believing that those who cut or use an axe in a sacred grove may be harmed by the presiding deity. There is a legend about Ekpaniya Bavsi sacred grove in the Madar village in Udaipur. About 100 years ago somebody wanted to cut a Haldu (*Haldina cordifolia*) tree from the forest. From the first cut, milk flowed down, and water in the second cut. The third cut yielded blood and the axe-man lost his sight. Sight could only be regained when the axe-man promised to construct a new temple for Ekpaniya Bavsi. These beliefs might have strongly influenced conservation of sacred groves.

Continuous community protection of sacred groves has resulted in several large sized trees. For example, there is a large tree of Churail (*Holoptelia integrifolia*) growing in Amrakji sacred grove. This is the largest tree of this species in India, having a height more than 33 metres, and its girth is 6.91 metres.

Usually, only fallen and ripe fruits are collected from the grove. Wood from mature trees is used to repair religious places. Dead and fallen wood is also used for religious functions such as *Annakut* i.e. a religious community feast. Wood is also used for funerals. Trees are not cut or removed for other uses. However, forest products including wood are harvested from temple forests dedicated to Lord *Shrinath ji* in Ghasiar. It is possible that during severe drought some species may be lopped for fodder. Such species are Khakhra (*Butea monosperma*), Neem (*Azadirachta indica*), Godal (*Lannea coromandelica*), Ber (*Zizyphus mauritiana*), Salar (*Boswellia serrata*), Khejadi (*Prospis cineraria*), Ronjh (*Acacia leucophloea*), Bargad (*Ficus benghalensis*) etc.

Pipal (*Ficus religiosa*) trees growing on the bunds of *Johad* (sacred ponds) in Alwar district are lopped for fodder. Water from *Johad* is used for limited irrigation and for drinking purposes for livestock. Other sacred groves provide water for drinking and limited irrigation.

There is an important sacred grove near Udaipur. Ubeshwar Mahadeo has a temple dedicated to Lord Shiva. It is situated close to a water stream and thus serves as a watering and resting place for people and livestock. Kishore Saint (1994) points out that, by custom, no cowdung is removed from the area, and is allowed to decay or dry. The dried dung cakes are used to cook *bati* (ball-like local bread) by villagers and pilgrims who visit the temple. The arrangement ensures the sanctity of the grove and provides ample stock of fuel to all.

Sacred groves also provide meeting places for the community to discuss socio-religious and economic issues and to resolve their personal grievances.

Figure 3
Plants and people

THE BAUG: SACRED GARDENS

The Baug is a ethno-silvihorticultural garden planted near settlements for fruit, fodder, fuelwood, medicine, NTFPs and shade. They are the backbone of indigenous methods of drought prevention, acquisition of entitlements and food security. Probably no other landscape is as productive and valuable as the Baug. The biodiversity consists of utility trees such as *Mangifera indica, Madhuca latifolia, Feronia limonia, Syzygium cuminii* etc. We were able to find Baug in Udaipur, Kota, Bundi, Baran and Jhalawar districts in Rajasthan. An excellent Baug exists near a village inside the Darrah Wildlife Sanctuary in Kota. Surrounded by cultivation, it has *Mangifera indica, Tamarindus indica, Phoenix* sp. and other important species. It was supposed to have been planted by local rulers. These gardens are similar to the Baugh found in the Bundelkhand region (Panna, Chhatarpur, Sagar, Damoh of M.P. and Jhansi in U.P.) and Baghelkhand (Satna, Rewa, Sidhi and Shahdol in M.P.).

Sacred gardens are cultivated counterparts of sacred groves. Every garden has a sacred place dedicated to a village deity. Green felling is totally banned by the community, only dead and fallen wood is removed by the owner (Kapoor and Pandey, 1998).

TEMPLE FORESTS

Temple forests, by virtue of their size and visible locations, are comparatively studied more than other forms of traditional forest management. Some studies are

Figure 4
Sacred water and sanctified trees

available on temple forests of India, China, Nepal and Thailand (see for example, Menzies, 1988; Ingles; 1990, Chandrakanth et al., 1990; Karnataka Forest Department in India, 1988, among others).

Temple forests are managed and maintained to serve the temple. This may include economic, ecological, social and religious functions. In Rajasthan many forests are managed to meet the requirement of temples, which in turn support religious and social functions. Shri Nath ji temple in Rajasthan, India, has a large temple forest owned by the Temple Trust, and a sacred grove located in *Gautameshwar* forest block. Temple Trust management does not derive authority from state forest regulations. Management includes protection against grazing, fire, illicit felling, and fencewall breach. Similarly, Karnataka Forest Department has a programme for development of sacred groves and temple forests (Chandrakanth and Romm, 1991).

SACRED CORRIDORS

Sacred Corridors are locally protected riverbanks by villagers in the name of Lord Shiva. Long stretches of *Karai van* or riparian forests are protected in several places along the river Chambal. Examples of such sacred corridors in Kota are Gaipernath and Garadia Mahadeo in Kota. Sacred corridors along the river Chambal attract hundreds of visitors during the annual religious fair dedicated to Lord Shiva.

CREATING GROVES: PLANTING AND DEIFICATION OF NEEM BY GUJJARS

The Gujjar people of Rajasthan have a unique practice of neem (*Azadirachta indica*) planting and worshipping as *neem narayan* or neem-god. A Gujjar settlement normally starts near a water source, stream or river. Initially few huts are constructed, and neem saplings, brought either from other settlements or from the wild, are planted in the enclosure around the hut. Gujjars worship Neem as the abode of God Deonarayan. In a few years these trees start producing viable seeds that germinate naturally amidst home-enclosures. Some of these seedlings attain tree form as Gujjars take every care to nurse the wild seedlings.

This pattern is replicated around all huts in the settlement simultaneously. Thus, a Gujjar settlement appears like a human-inhabited sacred grove. For example, Kalyakui settlement, a sub village, or Dhani as they are called locally in Kota district in Rajasthan, has about 50 houses. Every house has a large enclosure, chiefly made of random rubble or brushwood, for livestock rearing. Gujjars being a pastoral community, they keep livestock in the same enclosure around the dwelling house. Thus, neem trees provide shade and air-conditioning for the livestock. Summers are particularly intense and difficult for buffalos in Rajasthan. Neem shade gives respite in the intense summer noons. Neem is also used as a veterinary medicine. Leaves are used for wound dressing and decoction is given orally for deworming.

Size and frequency of neem trees can be a fairly reliable indicator of the age and history of the settlement. The larger the girth and crown, the older the tree. Similarly, older settlements have more neem trees than the recent ones.

Neem trees are also planted, or naturally growing seedlings assisted to develop, in the outskirts of settlements in the form of a *Deonarayan Sacred Grove*, believed to be the abode of village deity God Deonarayan. Sometimes, the tree itself is called *neem narayan*. Kota district in Rajasthan, India, has about 600 Gujjar settlements, where an estimated 70,000 trees of various age and dimensions are thriving.

This has far-reaching advantages for the Forest Department. Plantations near Gujjar settlements should have a predominance of neem saplings. Planting neem will not only meet the fodder requirements during scarcity, but will not be removed by people.

Neem seeds can be a sustainable source of income, and thereby become a source of entitlement to the people. We need to establish market links for seeds. Either Forest Departments or traders can procure seeds from collectors and households. Similarly, neem seedlings can be distributed through Gujjar dominated Village Forest Protection and Management Committees. These seedlings will have better chances of survival. Additional income thus provides entitlement security and access to money.

THREATS TO THE SACRED SITES

Sacred groves currently face various threats like submergence, clear felling, mining, quarry, encroachment and other depletive factors. For example, a part of *Ubeshwarji* sacred grove was destroyed by submergence because of construction of an anicut across the stream flowing through the grove. *Taneshwarji* sacred grove is threatened by mining and stone quarrying. *Amrakji* sacred grove, that protects a large specimen of *Holoptelia integrifolia*, was threatened by encroachers who wanted to set up industries around the grove. *Amrakji* sacred grove provides drinking water to livestock reared by people in a nearby village. *Malpur* sacred grove, in a private land holding, was clear felled because it contains valuable teak-wood. No sufficient regeneration effort was made to restore the groves by the owners who gave consent to fell the groves. Felling in other groves has been stopped only after the intervention of the Forest Department.

Orans are threatened because of increasing pressure from population and livestock. Several encroachments have taken place, and worse, they have been regularised by the Governments. Area and legal status of several *Orans* has not been clearly defined. Unfortunately, these lands have not even been declared as forest lands, hence effective legislation is not applied in the case of offenders.

Eroding community values have made the matter

worse. Lack of faith in the younger generation is a problem. This situation is similar throughout the country. For example a well researched study on social and anthropological aspects of *sarana* (sacred groves) in Madhya Pradesh by Drs Patnaik and Pandey (1998) concludes that saranas are fairly degraded landscapes with over-mature *Shorea robusta* trees with hardly any regeneration because of open grazing, non-timber forest produce collection, and various other biotic pressures. We need to reverse this trend.

SACRED GROVE CONSERVATION

Aravalli deovan conservation

To restore the sacred groves of Aravallis a programme *Aravalli Deovan Sanrakshan Abhiyan* (Aravalli Sacred Grove Conservation) was launched in 1992. This programme includes protection of groves, planting of indigenous species, soil and water conservation and participatory approach to restoration. Some of the restored groves include *Moria Ka Khuna, Jhameshwarji, Amrakji, Ubeshwarji, Dhinkli, Haldu Ghati, Banki, Khokhariya Ki Nal,* and *Ambua* sacred groves (Pandey and Singh, 1995a & b). *Moria Ka Khuna* sacred grove is located inside the forest in Udaipur. It has the best bamboo clumps in Aravallis, in terms of culm dimensions and clump area. A bamboo plantation has been raised in the adjoining 50 ha. of land to extend the area of the grove.

Large tracts of tree-bearing land in otherwise desolate districts in western Rajasthan are called *Orans*. These *Orans* are identical to sacred groves in Aravallis and they offer similar advantages.

Important technical inputs being addressed are the constitution of Village Forest Protection and Management Committees, training on sacred groves conservation for people, NGOs and foresters, documentation of sacred groves and bio-diversity, participatory planting and seed sowing of local species, soil and water conservation, restoration, planting of ethno-silvicultural refugia, seed collection from species growing in sacred groves, and afforestation of local, rare and threatened trees around the sacred groves located in forest lands.

Societal and legal issues being addressed include public education, awareness and legal action against those who violate the community and legal protection norms.

This programme has only been launched in the Udaipur district by Udaipur South Forest Division. It needs to be replicated in Dungarpur, Banswara, Sirohi, Chittorgarh, Rajsamand and other areas in Rajasthan, and the country. There is an urgent need to address this problem for the following reasons:

1. Threats to sacred groves are high and on the increase.
2. Documentation of the practice is required to effectively restore, manage and conserve the threatened groves.
3. Traditional resource management practices can provide a clue to the modern scientific forestry and participatory forestry. It will help in management, regeneration, conservation and sustainable use of forest resources.
4. Success gained in the programme at Udaipur should be replicated elsewhere.

Ethno-silvicultural refugia

In order to develop a sustainable cluster of forest plantation, foresters need to establish a temporary nursery to obtain saplings for planting and distribution. These temporary nurseries have been developed by an internationally funded forestry project, Aravalli Afforestation Project, into *Ethno-silvicultural Refugia* by planting the local trees for prudent and sustainable use by local communities. Species planted are multiple-use trees such as Mahua (*Madhuca indica*), Aam (*Mangifera indica*), Khajjur (*Phoenix sylvestris*), Khakhra (*Butea monosperma*), Imli (*Tamarindus indica*), Jamun (*Syzygium cuminii*), Neem (*Azadirachta indica*) etc. These are the most frequently used trees to obtain food, fodder, fuelwood, small timber, fibre and medicine. In addition, they serve ecological functions in offering nest, forage and roost sites for wild animals. These species not only yield multiple resources but also can grow on a variety of edaphic and climatic conditions (Pandey 1993).

These *Ethno-silvicultural Refugia* are comparable to the traditional sacred groves. The objects of the management of such groves are: to provide traditional non-timber forest products and subsistence goods to the people; nesting, roosting and foraging sites to the pest-controlling cavity nesting birds and other wild animals; protecting the species that offer sites for beehives and enhance the availability of honey; developing seedling orchards and seed production areas of ethno-silvicultural species and sustaining the essential ecological processes and life support systems. In Udaipur South Forest Division such groves have been developed in several forest plantations.

We have discussed planting of ethno-silvicultural refugia and the Aravalli Deovan Conservation Programme in southern Aravallis. We shall now address some issues to bear in mind while implementing the programme.

1. Sacred groves are community protection areas. Though they yield several direct benefits to the community, harvest of resources is restrained. People would definitely benefit from restoration of sacred groves as ethnomedicines, dead and fallen wood, seed collection for local afforestation programmes and limited irrigation from the water source near the grove.

It is the local community organised and registered as village forest protection and management committee that will ultimately carry out the restoration work of the groves. Their aspiration and vision would be a major guiding factor to restore the groves.

Studies should be carried out by the researchers in active collaboration with the community. We have already pointed out the lack of documentation and inventorisation. It becomes necessary to explore various issues in detail. It will help with protection.

2. The role of grassroot organisations in actual implementation is manifold. Organisations involved are primarily village forest protection and management committees and small NGOs. Village forest protection and management committees are constituted under an enabling resolution passed by the Government. Every household from a village is a member of VFPMC. An executive body constituted and elected by the villagers attends to day to day functioning. The village forest protection and management committee maintains a bank account. Every committee has a registration certificate and number. The VFPMCs in Aravallis have excelled in participatory forestry in collaboration with the Forest Department in Rajasthan. The efforts are of a pioneering nature.

Local non-governmental organisations located in the district headquarters will be of help in training, study and assistance to VFPMC in actual implementation. NGOs in Rajasthan helped in several biodiversity conservation programmes. Their collaboration with the Forest Department and communities has produced a significant results.

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REFERENCES AND BIBLIOGRAPHY

AFC (1997). Sacred groves of Rajasthan. AFC New Delhi.

Brandis, D. (1897). Indian Forestry. Oriental University Institute.

Chandrakanth, M.G., Gilless, Gowramma and Nagaraja (1990). Temple Forests in India's Forest Development, Agroforestry Systems, 11: 199-211.

Chandrakanth, M.G. and Romm, Jeff (1991). Sacred Forests, Secular Forest Policies and People's Actions. Natural Resources Journal 31: 741-756.

Down to Earth (1994). Relics of Reason. Down to Earth, 2(17): 4

Down to Earth (1994). The Spirit of the Sanctuary: Sacred Groves. Down to Earth 2(17): 21-36

Gadgil, Madhav and Vartak, V.D. (1976a). Sacred Groves in India: A plea for continuous conservation. Journal of the Bombay Natural History Society 72: 314-320.

Gadgil, Madhav and Vartak, V.D. (1976b), Sacred Groves of the Western Ghats in India. Economic Botany 30: 152-160.

Jha, M., Vardhan, H. Chatterjee, S. Kumar, K. and Sastry, A.R.K. (1998). Status of Orans (Sacred Groves) in Peepasar and Khejarli Villages in Rajasthan. In: Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. (Eds) Conserving the Sacred for Biodiversity Management.Oxford & IBH, New Delhi/ Calcutta, pp. 263-275.

Joshi, Prabhakar (1995). Ethnobotany of the Primitive Tribes in Rajasthan. Printwell, Jaipur.

Kapoor, R.P and Pandey, Deep N. (1998). Indigenous Knowledge on Silvicultural Enrichment in Rajasthan, Paper sent for publication in Wastelands News.

Meena, R.C.L and Pandey, Deep N. (1999). Van Ka Viraat Roop. Himanshu, Udaipur and New Delhi.

Meena,Vela Ram (1992). Aadivasi Sanskrati evam Dham-dhunia.(in Hindi), MLV TRI Udaipur.

Pandey, Deep N. (1993). Developing Ethnosilvicultural Refugia in southern Aravallis. Wastelands News 8(3): 78.

Pandey, Deep N. (1996). Beyond Vanishing Woods: Participatory Survival Options for Wildlife, Forests and People. CSD and Himanshu, Mussoorie/New Delhi/Udaipur, pp.222.

Pandey, Deep N. (1997). Ethnoforestry by Indigenous People. Paper presented at XI World Forestry Congress, Antalya, Turkey.

Pandey, Deep N. (1998a). Ethnoforestry: Local Knowledge for Sustainable Forestry and Livelihood Security. Asia Forest Network/Himanshu, New Delhi, pp. 91.

Pandey, Deep N. (1998b). Sacred Groves, Sacred Corridors, Sacred Gardens and Temple Forests of Rajasthan. Paper presented in The National Workshop on Sacred Groves at CPR Environmental Education Centre, Chennai, 1998.

Pandey, Deep N. and Samar Singh (1995a). Aravalli Ke Deovan. Rajasthan Patrika, 21 May, 1995.

Pandey, Deep N. and Samar Singh (1995b). Traditions of Sacred Groves in Aravallis. Wastelands News, (Hindi), April-June 1995. pp3-6.

Patnaik, S. and Pandey, A. (1998). A study of indigenous community based forest management system: Sarana (sacred grove). In: Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. (Eds) Conserving the Sacred for Biodiversity Management.Oxford & IBH, New Delhi/Calcutta, pp. 315-321.

Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. (1998) (Eds). Conserving the Sacred for Biodiversity Management.Oxford & IBH, New Delhi/Calcutta, pp.480.

Saint, Kishore (1994). Sacred Groves: The Common Root. Down to Earth, 2(17): 45-46.

Singh, G.S. and Saxena, K.G. (1998) Sacred Groves in the Rural Landscape: A Case Study of Shekhala Village in Rajasthan. In: Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. (Eds) Conserving the Sacred for Biodiversity Management.Oxford & IBH, New Delhi/Calcutta, pp. 277-288.

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