



Sacred Grove in Jharkhand
Dr. T. Pal
Postdoc in NEHU, Meghalaya

Abstract:

Nature is the nurse of all cultures where human-being and their portrait civilizations are the fen of those cultures. The deterministic perception of man is the core of nature oriented culture. Though the nano-science to meta-physics deals with everything in our life, sometimes they fail to fulfill the perception of populace and the restoration of the eco-health of environment. More than dozen of conferences and world summits have held but they have failed to restore the traditional cultures as well as the health of environment. Cultural clash and mixed culture have reduced the folk traditions, nature oriented cultures and tribal worshippings. And in this situation we are losing and have lost most parts of our age-old folk traditional cultures. Thus in this situation we have to conserve our folk-traditions like Sacred Groves tradition; to maintain our environmental status and to reduce the diseases of the environment.

Key words: Nano-science, Cultural clash, folk-traditions

.....

I. PREAMBLE:

The word 'Sacred' considered to be holy or connected with a Gods and Goddess and the word 'Groves' means small area of land with trees/tree of particular types grown on it. Sacred Groves are age-old traditional practices of our geographical territory and it has great ecological and non-ecological value (social, tribal culture, traditional, economical, and therapeutic) to conserve our environment of Meghalaya in fruitful way. Over the past one decade or so, a considerable amount of interest has been generated in the studies of sacred groves among the ecologists, taxonomists, foresters, environmentalists and anthropologists. We have documented as many as 21 sacred groves in Jharkhand alone. These sacred groves (*Sarna* more than 500 "Jaherthan" in Godda of Jharkhand) are owned by individuals, clans or communities, and are under direct control of the clan councils or local village Dorbars/Syiemships/ Dolloiships/ Nokmaships (Marine, 2000). With the canopy of Sacred Groves, the researcher would like to search its geo-environmental and importance also try to wake up about the thought of conserving our nature oriented traditional cultures, the culture of nature or related environmental cultures in the geographical territory of Jharkhand. But the present status of Sacred Groves everywhere is a matter of deep concern as they are gradually being moribund and disappearing from the countryside. Their presence in agricultural lands, grazing, fragmentation of grove-owning families, and erosion of cultural and religious beliefs are the major reasons. In view of this, and due to failure of pure legal protective measures in guaranteeing conservation, it has become imperative to search for alternative solutions based on indigenous knowledge of the tribal people in Jharkhand. Therefore, there is an urgent need not only to protect Sacred Groves, but also to revive and reinvent such traditional cultures of nature conservation and environmental management.



II. OBJECTIVE:

1. To illustrate the concept, classification and history of the development of Sacred Groves in Jharkhand.
2. To search out the present geographical distribution (Religions, Tribes, Settlements and Landforms wise) of Sacred Groves in Jharkhand.
3. To define the geo-environmental importance and traditional tribal cultures related to Sacred Groves in Jharkhand.
4. To find out the present emerging environmental issues and tribal perception associated with Sacred Groves in Jharkhand.
5. To give some ameliorative measures and policy making opinion to conserve the Sacred Groves in Jharkhand.

III. METHODOLOGY:

To fulfill these objectives, a popularly accepted methodology has been followed as follows:

Pre-field: It aims towards the collection of sporadic secondary writings before going to field. The relevant write-ups have been collected from various literature, journals, magazines, published reports, articles, leaflets (hard copy), internet, etc. and those information help to pre-visualize and create a pre-mental image about all the aspects on this topic. Researcher study several articles like “Sacred Groves-the virgin forests” of A. Bijukumar; ‘Studies on Sacred Groves and Taboos in Puruliya District of West Bengal” of R. Basu; “Traditional medicine and healthcare in Africa” of W. Bickmann; “Sacred Groves of Western Ghats of India” of M. Gadgil and V. D. Vartak (1997); “Sacred Grove in India” of K. C. Malhotra and Y. Chattarjee, “Protecting Sacred natural site of indigenous and traditional peoples” of G. Oviedo and M. Otegui; “The institution of Sacred Groves” of S. Burman (1992); “Dev Rahati: An ethnobotanical study of the forests preserved on grounds of religious beliefs” of M. Gadgil and V.D.Vartak (1973); “Sacred Groves” of Geeti Sen (ed.); “Indigenous Vision, Peoples of India Attitudes to the Environment” of M. Gadgil and M. Chandran (1992); “Indian Agriculture and Climate Change Sensitivity, Global Environmental Change” of K. Kumar and J. Parikh (2001); “Causes and Consequence of Global Environmental Change” of Ted Mun (ed., 2002) needs highlighted mentioned. Researcher should have to visit at in Ranchi University to search out the objectives related photography, writings, maps and documentary achieves. Before going to study-area researcher prepared a specific questionnaire for digging out data (table 1):

District	Name of the Village	Name of the Sacred Grove	Tribal Tale /Myth	Age and size(Approx.)	Identity	Time of Worshipping	Sacrifice Associated or not	Traditional cultures (Rock/Tree/Tila/Soil/Jungle/tribal-Gods/Water worshipping)	Name of the tribe	Traditional use of Sacred Groves
A...										
										...X



During field:

The primary data to be collected through an extensive Random Sampling method. To get the opinion of age old persons of Aboriginal Tribes (Khorta, Binjhia, Gond, Ho, Kharia, Kharwar, Khond, Kisan, Korwa, Mal Paharia, Munda, Oraon, Santhal, Sauria Paharia, Savar, Bhumij, Birhor and Chero) and nontribes; researcher must be used specific questionnaires. Suggestions from local people towards the improvement of the social status of the Sacred Groves will be recorded. Digital camera (14x), physical and political Maps of Jharkhand will be used during the survey. Hunters and local people (more than 40 aged people, especially most elder persons of the villages) will be interviewed for additional information on present and past occurrence of all events related to the observed Sacred Groves.

Post field:

Accruing all information from field cum literature review researcher will be followed the way of 'DEPI' (means Description, Evaluation, Prescription, and Implementation to fulfill the objectives) and generate tables, diagrams, models through cartographic, statistical and recent Remote Sensing & GIS, GPS techniques for representation.

IV. DISCUSSION:

The topic is extremely timely, particularly with all focus on global warming and the efforts to manage and maintain Mother Nature for a prospective future. No doubt that the age-old knowledge of the indigenous people is appearing as the key solution to counter the damage done by the so called modern and developed nations. My proposed work will be worthy of this attempt.

Due to excessive changes of human demand and behavior our dear Earth suffers a toxic as well as polluted touch through environmental degradation. On the other hand though we have covered more than 22 International Conventions and Summits after 1972, we forget the matter of traditional culture through which we can see *A Healthy Earth*. So it is quite relevant to focus the human perception on Sacred Groves to conserve our green planet with its naturality and traditionality, particularly in West Bengal. The degradation of tropical forests and destruction of habitats due to anthropogenic activities are the major causes of declination of in the global biodiversity. Therefore, in many areas the reconstruction of a disturbed ecosystem is being taken up on a priority basis, both for biodiversity conservation and for maintaining landscape productivity (Solbrig, 1991, p.57). "One of the challenging tasks before the ecologists is to understand the relationship between biodiversity and the functioning of ecosystems" (Younes, 1992, p.16-21). "The high rate of extinction of tropical species is aggravated by the conversion of forest land for agriculture, harvesting non-timber forest products, extraction of mature trees, collecting fuel woods and plantations which threaten to erode the biodiversity seriously" (Mishra et al., 2004, p. 421-436). In this context, "conservation of biodiversity calls for reorientation of strategies where cultural traditions are also incorporated" (Ramakrishnan et al., 1998, p.34). Conservation of biological diversity is among society's most daunting challenges, and one that can only be met through interdisciplinary effort. Strong science will underpin sustainable policies, yet scientific uncertainty abounds in our understanding of complex ecological dynamics operating across multiple spatial and temporal scales from sub-



cellular to landscape, seasonal to epochal. Such uncertainty reaches beyond boundaries of traditional disciplinary thinking, necessitating shared insight from ecologists, evolutionary biologists, taxonomists and conservation biologists (among many others). How will species and communities respond to a changing climate? Which species are most vulnerable to extinction, and how can the damaged ecosystems be restored? Tackling these and other pressing questions will undoubtedly require a thriving and interdisciplinary community of biodiversity scientists. "It has been estimated that over 40% of all living species on the Earth are at risk of getting extinct" (Conservation and Wildlife, 2012). Internationally, 199 countries have signed an accord agreeing to create Biodiversity Action Plan to protect endangered and other threatened species. That means 199 countries are feeling about the matter of biodiversity loss. "Habitat Loss is the most widespread cause of species endangerment in the U.S., affecting 85% of imperiled species" (Wilcove and Master, 2008, p.414-420). So we have to revive the habitat of species and Sacred Groves are the glitter huts to do it. Present researcher wants to revamp the environmental traditionality on the light of Sacred Groves at locally and would like to recommend some measures to restore these Sacred Groves in West Bengal, where the biodiversity, traditional practices with its geo-socio-economic and cultural importance will be directly as well as also indirectly being conserved and in respect of sustainable point of view it is very fruitful because these pockets of *Sacred Islands* can only nourish environment without creating any degradation. On the other side in a developing and densely populated country like India, climate change puts additional burden on an already overstressed ecological and socio-economic dimension. A citizen of a developing nation emits approximately 5.5 tons of carbon per year, against the rate of 0.25 tons by that of an Indian. "If a one-meter sea level rises, it would displace 7 million persons in India" (Kumar and Parikh, 2001, p.147-154). Kumar and Parikh (2001, p.147-154) examined that "without considering the carbon dioxide fertilization effects yield losses for rice and wheat vary between 32% to 40%, and 41% to 52%, respectively; on the other side, GDP (Gross Domestic Product) would drop by between 1.8% to 3.4%." They have also estimated that with a temperature change of +2 degree celsius and an accompanying precipitation changes of +7%, farm level total net revenue would fall by 9%, whereas with a temperature increase of +3.5 degree celsius and precipitation changes of +15%, the fall in farm level total net-revenue would be nearly 2.5%. A curtailed crop cycle amount to a lower yield per unit area that overpopulated countries like India can't afford. "Surface air temperature is rising alarmingly at a rate of 0.4 degree celsius per century and the most worrying part of the prediction is that the estimated increase in Winter and Summer temperatures by 3.2 degree and 2.2 degree celsius respectively by 2050. People think that, how it is possible? Simple relation, if one meter sea water rises then 35% land of Bangladesh would be submerged under sea water" (Kumar and Parikh, 2001, p.147-154) and which ultimately generates a huge refugees and many of them could spill over into interior of India. On the other side, coastal ecology would be highly changed. Deltas like the unique Sundarbans will be threatened with flood, erosion and salt intrusion. Loss of coastal mangroves will not only endanger fisheries but also expose the inland areas to the onslaught of cyclones and tsunamis. Thus, a huge population reliant on riparian resources will be affected by the alteration of water regimes, saltwater intrusions and land erosion. In last 15 years, India experienced several devastations like: unexpected splash floods (for example - Baghmundi in 2004, Rajasthan in 2008, Mumbai in 2009 and Leh in 2010), super cyclone (for example- Andhra Pradesh in 1996, Orissa in 1999, Jammu, Kashmir in 2004 and Aila and Lyla in 2010). These all are the results of climatic modification. After experiencing these extremities, India has realized the loss scenario in respect of wealth and resources. For instance, "in the super cyclone in Andhra Pradesh in 1996, more the 1000 people died and there was huge



property loss” (Kumar and Parikh, 2001, p.147-154). Now, our planet is facing in a deep unhealthy environmental condition due to its unfruitful climatic modification. Greenery-perception of human-being and civilizations are being moved to concrete unscientific norm. With a round table, all the geographers are busy thinking how they would cope and restrain the harsh nature of climatic alternation. Though this might prove to be a boon in a curse with this comes to enlightenment and thus the revival i.e. in India as elsewhere in many parts of the world, a number of communities are practicing forms of nature worshipping; “one such significant tradition is Sacred Grove and which is a natural hospitable patches of forests dedicated to deities and or ancestral spirits. The estimated number of Sacred Groves in India is about two lakhs” (Malhotra, Chatterjee and Gokhall, 2007, p. 10-11). These lungs of climate are protected by local communities as the abode of Gods and Goddess. On the basis of this eco-wisdom belief, practically we; specially the geo-environmentalists can refine our eco-climatic domain, understand the climatic-alternation and restrain the rigid status in recent time. Climatic change is a natural predictable phenomenon i.e. the glaciations and pre-glaciations cyclic rhythm respectively. Climatic change is not the only important view point but the rate of its modification and climatic extremity is being directed to most extreme which is the result of human’s unscientific vision, mission and implementation of planning on the Earth. So, in recent, the Holocene climate period and its characteristics are unpredictable and it is becoming an emerging issue, we are worried about. At the onset of 21st century, we are feeling that, our mother is sick, she is not tolerating with our obnoxious activities and rampantly, she needs to avenge through changing climatic status, extreme climatic condition vis-a-vis ecological disaster. So our all *eco-doors* are closing, moreover we have to survive on the Earth. The theme is too hard but not impossible when we will revive the condition with the inviting of *green-gate* i.e. Sacred Groves.

The kaleidoscopic view of Jharkhand in respect to its physical, social, ecological and tribal cultural environment attracts the researcher. Jharkhand is the tribal dominant states (the population consists of 28% tribal peoples) of India by its strategic location, history and traditional cultural diversity. The tribal rulers, some of whom continue to thrive till today were known as the *Munda Rajas*, who basically had ownership rights to large farmlands. 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. It is now that, we are realizing a changing film in our geographical vis-a-vis socio-cultural and traditional environment, which ultimately is being moved to a degraded erratic feature. Declaring a patch of forest near the villages as sacred and protecting it on the grounds of religious and cultural beliefs is an age-old practice with the tribal communities in Jharkhand. These sacred groves in existence in the region since time immemorial and are considered to be the relic of the original forest vegetation of the region. Tribal traditional belief has modified with time-space. These traditional cultures and practices have a great role towards environmental renewal. Sacred Grove is one of its glittering wings.

Census data since 1881 has shown a gradual decline of tribal population in Jharkhand as against the gradual increase of non-tribal population in the region. So time has knocking the door to give the importance of tribes and their culture for our environmental conservation.



As per 2011 Census of India, Hinduism is the major religion in the state with 67.8% adherents followed by Islam (14.5%) and Christianity (4.3%). Other religions constitute 12.8% of state population (*The Times of India. Retrieved 20 July 2015.*), which is primarily Sarnaism (Sarnaism or Sarna or *Sarna Dhorom*, meaning "Religion of the Holy Woods" defines the indigenous religions of the Adivasi populations, such as the Munda, the Ho, the Santali, and the Khuruk) (Malini, 2007 and James, 2012). So diverse religion based sacred groves must be found here.

During the first census of 1872 the following 18 tribal communities were listed as the Aboriginal Tribes in Jharkhand: (1)Khorta (2) Binjhia, (3) Gond, (4) Ho, (5) Kharia, (6) Kharwar, (7) Khond, (8) Kisan, (9) Korwa, (10) Mal Paharia, (11) Munda, (12) Oraon, (13) Santhal, (14) Sauria Paharia, (15) Savar, (16) Bhumij, (17) Birhor Chero. So, the chance of good research on sacred groves and related traditions to conserve e our environment is better here.

Moreover, on the basic of internet survey only 21 Sacred groves¹ are found in Jharkhand but it has no detailed study or any list of 21 sacred groves (more than 500 " Jaherthan" in Godda of Jharkhand)with proper associated traditional cultural lists, list of biodiversity conservation, historical overviews are not studied extensively.

Diverse landforms and cultures are prevailing in the lap of Jharkhand i.e. hill, plateau, and plain. Like diverse physio-geographical formation, sporadic cultural (tribal and non-tribal) identities and diverse human perceptions are also found in Jharkhand and all these are the area of interest to select the study area in respect of research topic.

A broad research archives on Sacred groves in Jharkhand not avail in movement of nature conservation especially there are no distinct research is found on tribal traditional cultures related to sacred groves of Jharkhand. There have some sacred groves in Jharkhand We have documented as many as 21 sacred groves in Jharkhand alone (Malhotra et. al. 2007) but we know this just literary, we don't have any broad description with documentary about this. The newly formed State is extensively dotted with sacred groves. The townships like Ranchi which were earlier tribal settlements, even today harbour SGs (Malhotra et. al. 2007). But we don't have any extensive histo-geographical causes of changes and related perception study of tribes about their indigenous sacred groves and related tribal tradition.





Sacred grove at Bhandro, Bokaro district, Jharkhand

The tribals of Jharkhand worship their sacred groves which are known as Sarnas. 29 sacred groves have been documented in the state.

A Sarna is a cluster of trees where the adivasis worship on various occasions. Such a grove (among many others) must have at least five Sal (*shorea robusta*) trees (also known as sorjum), held very sacred by the tribals.





Praying the nature by singing song for flowering - Tusu geet

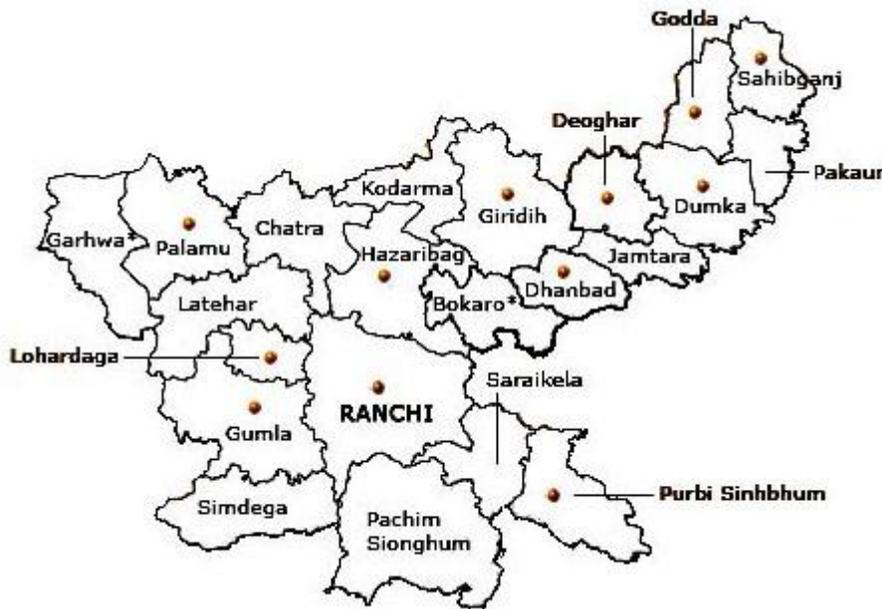
Non-tribal Hindus also worship in such Sarnas in many villages of Jharkhand. They call them Mandar.

Indian black plum, Indian plum, White marudah, Tulasi, Indian gooseberry, Neem, Mango, Malabar nut, Thorn apple, Sal and Champak are among the most commonly found plant species in the sacred groves.

The sarhul festival is celebrated in the sarhul sarana when the sal trees start flowering.



List of Sacred Groves in Jharkhand



(Map courtesy: <http://www.india.gov.in/maps/>)

Sl.No.	Sacred Grove Name	Sacred Grove Location	Area (Hectares)
District - Palamu			
1	Sarhuli Mander	Bariband	2.00
2	Sarhuli Mander	Kabri	1.00
3	Sarhuli Mander	Danarchampar	2.50
4	Sarhuli Mander	Mahandbar	1.50
5	Sarhuli Mander	Chiraiyah	3.00
6	Sarhuli Mander	Champi	2.00
7	Sarhuli Mander	Simakhas	1.50
8	Sarhuli Mander	Korwtola	2.30
9	Sarhuli Mander	Lat	1.20
10	Sarhuli Mander	Bandhuwa Karchha Gothaga	2.00
11	Sarhuli Mander	Rol	1.00
12	Sarhuli Mander	Sonwar Tola	1.50



13	Sarhuli Mander	Ghasegara	3.00
14	Sarhuli Mander	Mkanpur	3.50
15	Sarhuli Mander	Baghmrawa	2.50
16	Sarhuli Mander	Ghansee Tola	1.30
17	Sarhuli Mander	Chhanchu	2.00
18	Sarhuli Mander	Pathratu	3.50
19	Sarhuli Mander	Cheerodih	3.00
20	Sarhuli Mander	Bahertola	1.50
21	Sarhuli Mander	Hanthtola	2.00
22	Sarhuli Mander	Kotam	1.00
23	Sarhuli Mander	Siram	1.50
24	Sarhuli Mander	Hendehas	1.00
25	Sarhuli Mander	Baigatola	2.00
26	Sarhuli Mander	Jangharia	1.50
27	Sarhuli Mander	Salwe	3.00
28	Sarhuli Mander	Surkunni	2.00
29	Sarhuli Mander	Maromar	3.00

“Sacred Groves represent an ancient Indian conservation tradition, protected by lot of reverence and respect, fear and sentiments” (Swain et al., 2008, p.3). Sacred Groves or “Gardens of the Gods” (Reddy, 2009) also grow on the basis of temples, mosques or churches or associated with temples/monasteries/shrines or with burial grounds (Swain et al., 2008, p.3). For example, in Britain Sacred Groves are nourished in way of *Green Burial*. The relationship between man and trees is based on religion; there is a long list of plant species, which are associated with the Hindu and other religions. It is also believed that trees are blessed with spirits of good and bad. “The bad spirit causes disasters. Trees are popularly regarded as a sign of future. Also they are considered to ward off evils. Therefore, these beliefs led to worship them by the people” (Rajandran, 2004). The concept of biodiversity and conservation is incorporated as sacred groves are considered repository of local biodiversity. If the tribal beliefs associated with the sacred groves, and traditional cultural wisdom contributing to biodiversity protection could be suitably integrated with the modern scientific environment and nature management practices, these tribal sacred groves of Jharkhand could become a very caring model for environment conservation, traditional cultural conservation in the region. Obviously, there is a strong need to perpetuate and promote the concept of sacred groves, and to evolve a mechanism whereby the forest and environment departments could provide traditional and indigenous technical and policy inputs to improve the environmentalism. Comprehensive studies of sacred groves throughout India are still needed. Khan et al. (1997) advocate for an inventory of the number, size, and distribution of sacred groves as well as systematic botanical surveys of sacred groves, predicting that this would lead to the discovery of new species. If local management systems are supported, the community tradition of protecting sacred forests can provide a model way of achieving landscape-level conservation that is



implemented and maintained at a local level (Ormsby A., 2013). They have been protected by communities around the world for a variety of reasons, including religious practices, burial grounds, and watershed value (Lebbie and Freudenberg 1996; Chandran and Hughes 1997; Malhotra et al. 2007; Sheridan and Nyamweru 2007; Ormsby and Bhagwat 2010; Ormsby and Edelman 2010). India has the highest concentration of sacred groves in the world-estimated to be over 100,000 sacred groves (Malhotra et al. 2007)-yet these are disappearing due to cultural change and pressure to use the natural resources that they contain (Chandrakanth et al. 2004). The size of the sacred groves varies greatly from small plots less than one hectare to larger tracts of hundreds of hectares (Ntiama-Baidu 1995; Malhotra et al. 2007). In some cases, these fragments represent the sole remaining natural forests outside of protected areas and may be key reservoirs of biodiversity. Sacred forests are known to conserve habitats that are not represented in the current protected area system (Bhagwat and Rutte 2006), and serve as refugia for endemic species (Jamir and Pandey 2003). These have been reported to be relict forests and may be the only remaining climax vegetation of an area, although many are now disturbed as a result of human actions (Gadgil and Vartak 1976; Khiewtam and Ramakrishnan 1989; Kalam 1998; Tiwari et al. 1998; Upadhaya et al. 2008). Traditional rules support conservation by limiting activities within sacred forests. Sacred groves also provide ecosystem services, such as erosion control and maintenance of water quality (Tiwari et al. 1998).

CONCLUSION:

Around 30 trees were felled on a one-acre plot, located just 300 metres from the Mangar police station, on Wednesday. This comes a day after the forest department lodged an FIR against a land owner in Mangar village for chopping nearly 25 trees in the protected zone on Sunday. The plots are part of the protected Aravallis area, as notified by the Ministry of environment and forests, and cutting of trees here without permission is prohibited. Although the forest department confirmed that violators tried to fence the area which had holes dug in it, possibly to install poles, they refuted claims that trees were pruned or cut. Environment activists said pruning of trees was the first step in clearing up an area for construction activities. This is the fourth such incident in the Mangar area in the last two months. On Tuesday, the forest department registered an FIR against a land owner in Mangar village for axing 20-25 trees in the area on Sunday (January 10). However, no arrest has been made yet. The accused, identified as Devraj Kamboj, was also booked for cutting around 500 trees in the same area in December 2015. According to villagers, the trees pruned and axed were mostly thick vilayati kikar or *prosopis juliflora*. "The police and the district town planner (enforcement) have to support the forest department in their initiatives to protect the forest. The district administration should also make it a priority that activities like these do not happen in protected zones," Col SS Oberoi, an environment activist, said. Conservator of forest of (Gurgaon circle) MD Sinha said the series of incidents indicated that there was a planned attempt to clear the area and mark out a plot for construction activity.

<http://www.hindustantimes.com/gurgaon/axe-falls-on-30-more-trees-in-the-sacred-groves-of-mangar/story-DeVKz03I35hxGDrCjpCOMJ.html>

References:



- Basu, R. (2000). Studies on Sacred Groves and Taboos in Puruliya District of West Bengal. *Indian Forester*.
- Bhakat, R.K. and Sen, U. K. (2008). Ethnomedicinal plant conservations through Sacred Groves. *Tribes and Tribals*. New Delhi: Kamla-Raj Enterprises.
- Bhagwat, S.A. and C. Rutte. 2006. Sacred groves: Potential for biodiversity management. *Frontiers in Ecology and the Environment* 4: 519-524.
- Gadgil, M. and V.D. Vartak. 1976. The sacred groves of Western Ghats in India. *Economic Botany* 30: 152-160. Jamir, S.A. and H.N. Pandey. 2003. Vascular plant diversity in the sacred groves of Jaintia Hills in northeast India. *Biodiversity and Conservation* 12: 1497-1510.
- "In Jharkhand's Singhbhum, religion census deepens divide among tribals". *The Times of India*. Retrieved 20 July 2015.
- Khan, M.L., S. Menon, and K.S. Bawa. 1997. Effectiveness of the protected area network in biodiversity conservation: A case-study of Meghalaya state. *Biodiversity and Conservation* 6: 853-868.
- Lebbie, A.R. and M.S. Freudenberger. 1996. *Sacred groves in Africa: Forest patches in transition*. In: Forest patches in tropical landscapes (eds. Schelhas, J. and R. Greenberg). Pp. 300-324. Washington, DC: Island Press.
- Marine, Carrin. (2000). Santal autonomy as a social ecology, 16th European Conference on Modern South Asian Studies, Edinburgh.
- Malhotra, K.C., Y. Gokhale, S. Chatterjee, and S. Srivastava. 2007. *Sacred groves in India*. New Delhi: Aryan Books International.
- Minahan, James.(2012). *Ethnic Groups of South Asia and the Pacific: An Encyclopedia*. Series: *Ethnic Groups of the World*. ABC-CLIO, ISBN 1598846590
- Ntiamoa-Baidu, Y. 1995. *Indigenous vs. introduced biodiversity conservation strategies: The case of protected area systems in Ghana*. Washington, DC: WWF Biodiversity Support Program Volume 1. African Biodiversity Series.
- Ormsby A. Analysis of Local Attitudes Toward the Sacred Groves of Meghalaya and Karnataka, India. *Conservat Soc* 2013;11:187-97 Rajendaran, K. and Krishnan, C. (2004). Common Sacred Tree in Alagar Kovil Sacred Grove of Western Ghats Region of Madurai District, Tamil Nadu, In: C. Kunhi Kannan and B. Gurudev Singh (ed.). *Strategy for Conservation of Sacred Groves*. Coimbatore: Institute of Forests Genetics and Tree Breeding.
- Ray, R., Chanclran, M.D.S. and Rarnachandra, T.V. (2010). Hydrological importance of Sacred Groves of Western Ghats. *First Indian Biodiversity Congress 2010: Book of Abstracts*. Bangalore: Indian Institute of Ecology.
- Srivastava, Malini.(2007). *The Sacred Complex of Munda Tribe*. Department of Anthropology, University of Allahabad, Allahabad 211 002, Uttar Pradesh, India. *Anthropologist*, 9(4): 327-330
- Tiwari, B.K., S.K. Barik, and R.S. Tripathi. 1998. Biodiversity value, status, and strategies for conservation of sacred groves of Meghalaya, India. *Ecosystem Health* 4: 20-32.



Bibliography:

Bhattacharjee, S.K. (1993). *Chiranjibi Banaushodhi*. Kolkata Adittyia Prakash.

Webliography:

¹https://en.wikipedia.org/wiki/Sacred_groves_of_India

Reddy, U.S. (2009). Sacred Groves: *Land sharks encroach Gods' gardens*. Retrieved November 2, 2009 from <http://udumulasudhakarreddy.blogspot.in/2009/11/sacred-groves-land-sharks-encroach-gods.html>

