

Community linked Biodiversity Conservation: Sacred Groves of Kodagu, Karnataka; India.

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Abstract - Indigenous communities in many parts of the world have protected forests and worshiped as local deities to protect them from different calamities. These forests patches are sacred forests or groves based on spiritual and cultural values. Kodagu district in Karnataka, India has over 1214 sacred groves locally called as Devarakadu and is located in the Western Ghats-a Biodiversity hotspot. These groves are unique and rich in biodiversity and every village has at least one sacred grove. Today, due to changes in forest structure, religious beliefs, and perception towards the groves, sacred groves face many threats. Realizing the importance of community participation and a more holistic view towards the

protection of ten selected grove in Kodagu, Forest Department in collaboration with Centre for Environment Education (CEE), Forestry College, Kodagu Model Forest Trust initiated a project “Conservation Education Programme for Sacred Groves”.

Scientific inventory of flora and fauna along with the history, belief and myths of 10 selected groves in Kodagu are documented and published. Oriented teachers, students and youths residing around the groves experienced and realized the sacred grove importance. Posters and wayside informative panels helped to spread the message of sacred

grove protection among the community. Trail path, signages created inside the groves enables tourist to enrich their experiences. Sensitized students compiled interesting stories and facts from their grand-parents and parents about their nearby groves. This initiative helps the forest department to draw effective grove management plan, to mitigate the loss of biodiversity and manage forest sustainably and thereby addressing SDG Goal 15.

Key Words - Biodiversity, community conservation, scared groves of Kodagu, Sustainable development goals.

I. INTRODUCTION

Sacred forests, often referred to as sacred groves, are sites that have cultural and religious beliefs. Since time immemorial indigenous communities all over the world have always worshiped nature and inherited from their ancestors. These patches or sections of a forest were believed to have spiritual beings residing there, and where everyday activities such as tree felling, gathering of wood, plants and leaves, hunting fishing, grazing of domestic animals, lowing or harvesting of crops, and building ordinary dwellings were prohibited (*Hughes and Swan 1986*). Sacred groves are distributed across many countries extending from Asia, Africa, Europe and America, but the present occurrence is mostly restricted in Africa and Asia. In India, sacred groves are recorded from North-east Himalayan region, Western Ghats, Eastern Ghats, Coastal region; Central Indian Plateau and Western desert (*Rajasri Ray*). A diverse range of

ecosystem is preserved in grove tradition along with its regional and local identities as represented in name, practices and management of groves.

Sacred groves of India have Pre-Vedic origin. This age old tradition is still prevalent today and plays a vital role in the conservation of resources. They not only have cultural and spiritual value, but also act as reservoirs of the local diversity preserving unique flora and fauna. The level of disturbance varies across many sacred groves and from their proximity to villages. These groves also act as corridors and can reduce human wildlife interaction. The groves play an important role in water and soil conservation as well.

The earliest documentation in India on sacred groves is that of Brandis (1897), the first Inspector General of Forest. His observation on scared groves is more of a travelogue. The Scared Groves are known locally by many names in each state across India. In Kodagu, located in Karnataka, India the sacred groves are known as “Devarakadu” (Gods forest). Kodugu district in Karnataka has 1214 sacred groves covering an area of 2250 (hha) with every village in Kodugu having at least one devarakadu or more than one in some cases (*Kushalappa & Kushalappa 1996*). In terms of density there is one Devarakadu for every 300 acres, possibly the highest in the world. The uniqueness of the grove is that each devarakadu has its own traditions and culture showcasing the cultural diversity. According to a study done, Kodagu can be regarded as a ‘Hotspot’ of sacred grove

tradition in the world (*Kushallappa and Bhagwat, 2001.*) All communities come together, offer their prayers and participate in the annual activities. This community participation symbolizes unity and harmony. Today, the sacred groves face many threats such as change in religious beliefs, forest structure, landscape and attitudes towards the groves. Hence, it is vital to motivate and include the community in preserving the sacred groves as common property resources (*Kushalappa & S. Raghavendra, 2012.*)

In Kodagu the sacred groves are declared as Protected Forests and owned by the Forest Department. The groves are managed by the local communities. Incorporating the groves into conservation networks could help in the effectiveness of protected areas by covering a wider variety of habitats and by harnessing the support of local people. (*Shonil A. Bhagwat, 1996.*)

II. METHODOLOGY

A. Inventory

The Sacred groves of Virajpet taluk of Kodagu were selected for the study and to execute the conservation education program. Ten sacred groves were selected from the Virajpet Taluk which was at variable distances from the protected area and from one another.

Coffee plantations are predominating, from the perimeter of the protected area to the landscape between sacred groves. These ten sacred groves were sampled for their biodiversity. Inventories were done for each grove by doing a rapid assessment of biodiversity in more than one taxon. The

selected groves sampled were very variable in size and each grove had variations from the level of disturbance from high to low; some sacred groves were patchy. In each grove the forest structural studies were done. Four transects of 25 X 4 meters were laid and all trees above 30cm girth at breast were recorded. The dominant species were recorded. Regeneration studies were done at each grove. The flora included trees, shrubs, herbs and climbers. Birds, butterflies and mammals (mostly indirect evidence) were recorded. The forestry college, Ponnampete undertook the primary research for the project. To calculate species richness, the shannon diversity index was used.

B. Questionnaires

Semi structured interviews were conducted to assess the cultural and management approach for each of the selected sacred groves. In each grove the head/ Committee leader was approached to carry out the questioning, seek permission for research and other devarakadu related activities.

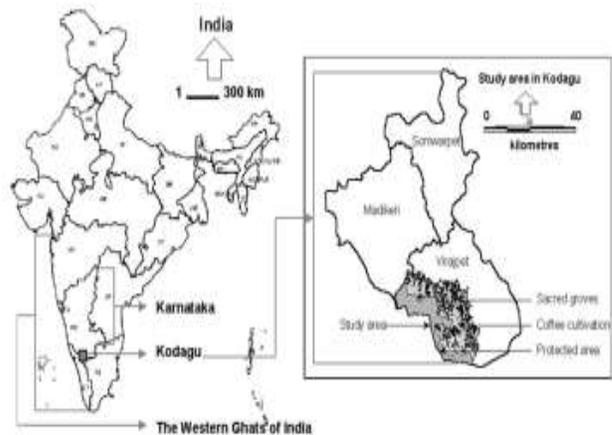


Figure 1 – The study area in the southern part of Kodagu district, Virajpet taluk, in the Western Ghats of India.

Fig 1 Map of Kodagu and study area.



Image 1 Enumeration of Species

Below info graphic indicate the flow of activities executed as part of this initiative resulting into collective efforts to document, protect and make sacred groves a learning centre for rural students.



Fig 2 The flowchart of collective activities between multi stakeholders.

C. Capacity Building

This approach was used to impart the knowledge and awareness of sacred groves such as its importance, biodiversity, ecological services, and ethical services to various stakeholders – forest department officials, teachers, students, and the community. The duration of the capacity building ranged from 3 hours to 8 hours and specific modules for each target group was developed and followed for the same.

D. Communication Materials

These materials act as triggers for people to understand the concepts and issues and are essential for awareness. As part of this initiative, set of four posters were developed highlighting the importance of and need for protection of forest were developed and distributed to schools.

E. Outreach

Unless the community or the general public is made aware of the importance and relevance of groves, any conservation or protection efforts of sacred groves may not succeed. Thus, straightforward community outreach activities were initiated that included outdoor signage's appreciating the groves and informative signage's on selected trees within each grove.

Discussions with community members who manage sacred groves were held for cross learning. School children collected interesting stories pertaining to local groves from their parents with the help of teachers.

Outdoor camp for school children at their nearby sacred groves provided better

insights among the children about the ecological, ethical, social, biological diversity and cultural aspects of these groves. These learning's by the student were linked to their curriculum in the camps.

Trail laid out within the groves enable visitors to explore and experience sacred groves. News coverage of the activities in newspapers and fortnightly magazine helped to spread the message among the mass.

III. RESULTS

Sacred groves assist as tools that document the management of biotic resources through people's participation. (*Hashish Antheil et. al, 2015*). It is vital to involve the different stakeholders of the community for developing new strategies and preservation of the sacred groves. The study shows that each sacred grove is unique in its forest structure with rich biological diversity and home to many endemic species. The below graph below depicts the rich diversity in 10 selected groves.

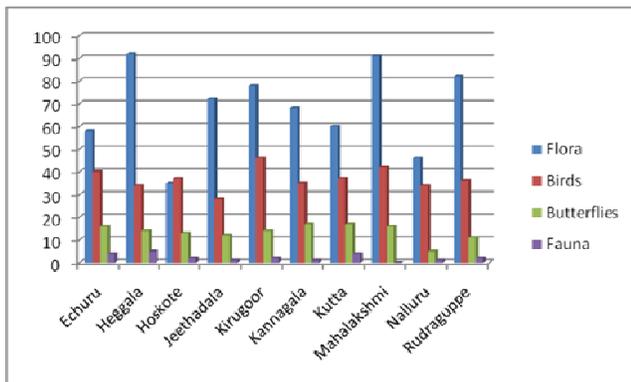


Fig 3 Number of species recorded in 10 Sacred Groves

Analysis from the survey indicates that teachers can play a vital role in spreading the message on importance of sacred among community through children. Teachers 'are able to make their school children understand the science aspect of the sacred groves and link it to the curriculum. Hence, strengthens the communication approach tool of TCCPC (Teacher to Child, Child to Child, Child to Parent and Parents to Community). Teachers can promote awareness by informing students about issues, problems by informing students about effective problem strategies and discussing cognitive and motivation characteristics of thinking. The twin benefits of this "consciousness raising are: a) it transfers responsibility for monitoring learning from teachers to students themselves and b) it promotes positive self-perceptions effects and motivation among motivation among students (*Scott G. Paris and Peter Winograd*). The inquisitive learning among children about sacred groves has further increased and they are able to identify and tell about at least 10 floral and faunal species found in their neighbourhood groves. Of 301 students involved in this initiative, 53% were boys and the remaining 47% were girls.

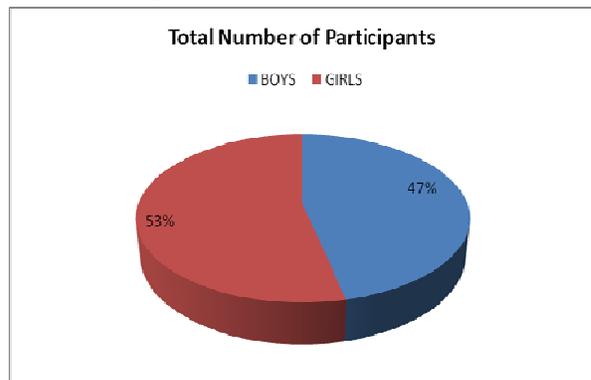


Fig 4 Total number of school children (301)

Impressive outdoor signage's on sacred groves make lasting impression among the community and more particularly tourist visitors. The signage's developed and displayed near groves has reached to hundreds of people.

IV. CONCLUSION

Conservation of any resources especially the sacred groves that are importance from ecological, cultural, environmental services and that are managed by the community and owned legally by the forest department is an uphill task. This is also more from the anthropogenic pressures on these groves such as encroachment and cultivation, habitation, land fragmentation. The results from this project strongly advocate that improving knowledge and awareness about the importance of sacred grove among multi-stakeholders is vital for sacred groves conservation. It also helps active participation of people and thus helping cross learning. The inventory developed in the process brings a scientific and academic temper; documentation from the community about social aspects supports cultural dimension; outreach and communication tools developed supports the critical pedagogy; self-initiative by the forest department highlights their endeavour in engaging multi-stakeholders in protecting sacred groves. Probably it's a first of kind initiative where multi stakeholders are engaged in promoting conservation education on sacred groves. Such a unique initiative is showing positive results in strengthening the sacred groves conservation.

ACKNOWLEDGMENT

We are highly grateful to the Forest department of Kodagu, especially the DCF Mr. P Shankar for funding the entire project. We thank the Forestry College, Ponnampette students for the research carried out at each grove. Mr. C.G Kushallapa and Dr. Satish for their expertise on the subject. We are thankful to KMFT for the logistical support and human resources. We thank CEE team for executing the education program.

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