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# Sustainable Future Through Sacred Groves: A Study of Challenges

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# Abstract

This study investigates the challenges faced by sacred groves, valuable ecosystems conserved by local communities for their spiritual significance, particularly focusing on four sacred groves (Kaavus) in Kerala, South India. Despite their rich biodiversity and ecological benefits, these groves are increasingly threatened by urbanization, deforestation, climate change, and social changes that lead to the erosion of traditional knowledge and community values. Through empirical field visits and qualitative interviews with community members, the research identifies a pattern of human-induced threats, social and cultural challenges, economic pressures, and inadequate policy frameworks that hinder effective management. The findings underscore the necessity of engaging local communities in conservation efforts while recognizing the cultural and ecological significance of sacred groves. The study emphasizes collaborative initiatives among government bodies, NGOs, and local communities to ensure the sustainability of these critical ecosystems, positioning them as vital components in the pursuit of a sustainable future.

Keywords: Biodiversity, Conservation, Sacred Groves, Sustainability, Urbanization

"Unlike a botanical garden, where a wide range of trees and plants are collected and cultivated for the purpose of our education and enjoyment, the sacred groves are one method of expressing the gratitude of human beings to the trees which sustain and support life under a given agroecological condition". -Dr. M.S. Swaminathan

# Introduction

Sacred groves are tracts of forest protected by local communities due to their spiritual significance. These ecosystems have been conserved for centuries, providing numerous ecological and socioeconomic benefits. As the world grapples with environmental degradation, climate change, and biodiversity loss, sacred groves offer valuable lessons in building a sustainable future.

# Background

Kerala State in South India is noted for its lush green landscape and is a hot spot for Indian and foreign tourists. During a field visit as part of a project on Indian Knowledge Systems, the group of investigators came across Kaavus in remote parts of Kerala. These sacred groves were found to harbour rich biodiversity, often surpassing that of surrounding landscapes.



# The problem

The sacred groves visited by the investigators were providing a habitat for endemic and endangered species. But they also noted that many sacred groves are in a state of extinction even though the local community members know that preservation of these ecosystems is crucial for maintaining ecological balance and supporting human well-being. What has led to such a state of affairs is not fully known.

#### **Research questions**

The investigators who grew up in urban settings were quick to notice the change in temperature of the areas surrounding the sacred groves. But they also noted that the sacred groves that they visited were facing numerous threats both from urbanization, and conversion of sacred groves into tourist spots. So to study the challenges which the sacred groves were facing, the following research questions were framed.

i)In what ways are the existence of sacred groves being threatened?

i)What can be done to face the challenges faced by sacred groves?

# Methodology

The population for the study comprised Kaavu's or sacred groves in Kerala. The sample comprised Valliyoorkkavu in Mananthavady in Wyanad district, the sacred grove adjacent to Eravat Kandi Dharmabhagavathy Temple in Kozhikkode district, Kavanur Kizhakkepurakkal Kaavu in Malappuram district and Iringole Kavu in Ernakulam district. This empirical, analytical and qualitative study is proposed to be conducted through field visits and interviews with local community members.

#### **Brief review of studies**

Both during the previous century and the last two decades of the present millennium several agencies have attempted to study the current status of sacred groves in India and Kerala in particular. Many have found that sacred groves play an important role in environmental conservation and its biodiversity elements since ancient times. However with the growth if urbanization and increasing community needs many are facing encroachments and are slowly dying out.

Rajendraprasad (1995) studied the sacred groves of Kerala and found that they have many wild relatives of cultivated plants besides distinct tiers of trees, shrubs and herbs, climbers and stranglers. As per a doctoral study, Induchoodan (1996) reported that out of the 761 sacred grove in Kerala, 399 (32.17 %) were of less than 0.02 ha in extent and only 362 groves were larger than 0.02 ha. Amrithalingam's (2016) study on sacred groves of India found that they provide various ecosystem services such as biodiversity, medicinal plants; regulating services and the range of functions carried out by ecosystems.

Chandrasekara and Sankar (1998) studied the sacred groves of Kerala which are constantly facing threats like encroachment and habitat destruction. So they proposed that in view of possible threats, stakeholder groups inhabiting the precincts of sacred groves like municipalities and panchayats may jointly chalk out plans to manage and conserve the existing sacred groves. Sinha and Maikhuri (1998) explored traditional resource management and concluded that it fast becoming non-functional owing to the direct conflict between ever increasing human population and limited natural resources.

Khan and Tripathi (2008) who studied sacred groves concluded their study by highlighting the ecological services rendered by sacred groves. They also opined that the local community should be made to realize that the e conservation of groves is crucial for their own sustenance. A study by Kandari et al.(2014)



found that changes in modernization, social belief and erosion of cultural practices as factors that led to degradation of sacred groves.

#### **Discussion and findings**

The specific challenges faced by Sacred Groves varied from grove to grove but a review of the data collected from the spot and interviews with local community members led to the emergence of a pattern and they are as follows:

#### **Human-Induced Threats**

**Deforestation and Land Conversion:** Sacred groves are increasingly under threat from deforestation and the conversion of land for various purposes such as agriculture, urbanization, and infrastructure development. Agricultural expansion often encroaches on these ecologically sensitive areas, leading to the removal of native vegetation that is crucial for biodiversity. Urban development brings about the construction of roads, buildings, and other infrastructures, further fragmenting these valuable ecosystems. This loss of habitat not only endangers the flora and fauna that depend on sacred groves but also disrupts the cultural and spiritual ties communities have with these natural spaces. Restoring these areas becomes exceptionally challenging once native species are removed and ecosystems are altered, highlighting the need for sustainable land-use policies that prioritize the conservation of sacred groves.

**Over-Exploitation of Resources:** Sacred groves are often exploited for their resources, which include timber, fuelwood, and non-timber forest products like herbs and medicinal plants. The over-harvesting of these resources poses a significant threat to the sustainability of these ecosystems. The delicate balance that exists within sacred groves is disrupted when species are removed faster than they can regenerate. This unsustainable extraction not only depletes important resources but can also lead to soil degradation, loss of biodiversity, and the destabilization of local ecosystems. Local communities heavily reliant on these resources for their livelihoods may find themselves trapped in a cycle of depletion, where short-term economic gains compromise the long-term health of their sacred spaces.

**Pollution:** Pollution from industrial activities, agricultural practices, and urban runoff poses a severe risk to the environmental health of sacred groves. Chemicals from agricultural pesticides and fertilizers can leach into the soil and water systems, affecting the flora and fauna within the groves. Air pollution from nearby industrial activities can harm the delicate balance of these ecosystems, potentially leading to reduced plant growth and altered animal behaviour. The introduction of invasive species, often a byproduct of human activity, can lead to the displacement of native species. The cumulative effects of pollution can degrade the integrity of sacred groves, making them less hospitable for the species that rely on them and undermining the connection between these spaces and the local communities.

# **Climate Change**

**Rising Temperatures:** Climate change is causing rising temperatures, which significantly affects the intricacies of ecosystems within sacred groves. Many plant and animal species have specific temperature ranges that are optimal for their growth and survival. As temperatures increase, species that cannot adapt or migrate may face local extinction. Additionally, shifts in temperature can lead to altered flowering times, disrupting pollination cycles vital for reproductive success in various plant species. These changes not only jeopardize biodiversity but can also impact local communities that rely on specific plants for food, medicine, and cultural practices, thereby disrupt ting traditional lifestyles and knowledge systems.



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**Changing Precipitation Patterns:** Alterations in precipitation patterns due to climate change can disrupt the hydrological cycles crucial for maintaining the health of ecosystems in sacred groves. Changes in rainfall intensity and frequency can lead to droughts or flooding, both of which negatively impact soil moisture levels, water tables, and species diversity. For example, decreased rainfall can hinder the growth of key plant species, while flooding can wash away soil and seeds, leading to loss of vegetation. Consequently, the disrupted water supply can affect not only the plants but also the various animal species that depend on these plants for food. This cyclical effect can severely compromise the ecological integrity of sacred groves, ultimately negatively influencing the cultural practices and traditional livelihoods tied to these natural spaces.

# Social and Cultural Challenges

Loss of Traditional Knowledge: As modernity progresses and urban lifestyles become more prevalent, there is a growing erosion of traditional knowledge related to sacred groves. Elders and traditional custodians who hold valuable wisdom about sustainable practices and the medicinal properties of various plants are increasingly becoming few in number. This generational gap threatens the transmission of crucial ecological knowledge that has been developed over centuries. Without this understanding, community members may engage in practices that conflict with the conservation of sacred groves, leading to degradation of the environment. Preserving traditional knowledge is essential not only for the sustainable management of these ecosystems but also to maintain cultural identity and heritage.

**Changing Community Values:** Economic development and globalization can lead to shifts in community values that prioritize material wealth over spiritual and ecological values. As younger generations gravitate towards urban centres for education and employment opportunities, the importance of sacred groves may diminish in their eyes. This shift often results in neglect and a lack of active participation in the stewardship of these groves. When communities no longer see their cultural significance, they may be more willing to support activities such as land conversion or resource extraction. Reinforcing the connection between local values and the conservation of sacred groves becomes essential to ensure these communal landscapes are respected and preserved for future generations.

Lack of Community Involvement: Insufficient community involvement in the conservation and management of sacred groves is a significant concern that can lead to neglect and degradation. When local communities are not engaged or empowered in decision-making processes, the management strategies implemented may overlook their traditional knowledge and cultural perspectives. This alienation can create a sense of detachment from the groves, allowing harmful practices to proliferate. Strengthening community ties to sacred groves through education and awareness initiatives can foster a sense of ownership and responsibility, encouraging local populations to take an active role in preservation efforts.

# **Economic Challenges**

Lack of Financial Resources: The successful conservation and management of sacred groves often require financial investments for restoration, maintenance, and community engagement programs. Unfortunately, limited funding poses a major challenge to sustaining these efforts long-term. When financial resources are scarce, it can lead to inadequate management practices, neglect of existing sacred groves, and missed opportunities for community-led conservation initiatives. Government agencies and NGOs often lack the necessary funding to implement effective biodiversity conservation strategies,



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leading to further challenges in preserving these culturally and ecologically significant spaces. Prioritizing funding for sacred grove conservation must become an essential component of larger environmental and cultural preservation initiatives.

**Competing Land-Use Pressures:** The demand for land for agriculture, urban development, and industrial expansion increases the pressure to convert sacred groves into other uses. The economic allure of these land uses often overshadows the intrinsic value of sacred groves as biodiversity hotspots or cultural landmarks. As populations grow, the competing interest for land can lead to the degradation or complete loss of these crucial ecosystems. Balancing the need for economic development with the conservation of sacred groves requires strategic planning and policies that recognize and secure the ecological and cultural significance of these areas. Conversations around land-use must include diverse stakeholders to ensure the sustainable development of nearby communities while protecting sacred groves from exploitation.

# **Policy and Governance Challenges**

**Inadequate Policy Framework:** The lack of a comprehensive policy framework dedicated to the conservation of sacred groves inhibits effective protection strategies. Existing policies may not adequately recognize the ecological and cultural importance of these groves, resulting in insufficient legal protections. Furthermore, overlapping governance structures between various government agencies can create confusion and lead to poor implementation of conservation efforts. Establishing a cohesive policy framework that incorporates traditional knowledge and ensures the involvement of local communities in decision-making processes is essential for preserving sacred groves effectively. Such a framework would facilitate holistic management strategies and encourage collaborative approaches to guarding these vital ecosystems.

**Ineffective Enforcement:** Despite existing laws designed to protect sacred groves, weak enforcement often allows destructive activities to continue unchecked. Insufficient monitoring and lack of accountability can lead to unauthorized resource extraction and land conversion within these sacred spaces. When communities view relevant laws as ineffective, they may become reluctant to adhere to regulations, further complicating conservation efforts. Strengthening enforcement mechanisms is crucial to ensuring that sacred groves are adequately protected from threats. Training local governance bodies and law enforcement agencies on the ecological and cultural significance of sacred groves can measure positively in fostering a culture of respect and protection toward these vital ecosystems.

# Scope for further study

The study had highlighted certain aspects which affect the existence of sacred groves. It is an acknowledged fact that the government, NGO's and the local community can jointly work together to ensure that the sustainability aspects of sacred groves are given top priority. Studies may be undertaken to find out the current status of such joint efforts and way of plugging loop holes if any in the programmes.

# Limitations of the study

The present study has focussed only on four sacred groves in Kerala and there are hundreds of such Kaavus facing varied challenges. Further in several places attempts have been made to integrate sustainable tourism, ecotourism, and agroforestry practices with economic benefits. But this study was



limited to just four sacred groves and the investigators have not attempted to study the tourism based impact on sacred groves. Hence the findings of this study cannot be fully generalized.

# Summing up

This study has shown how sacred groves in Kerala are facing numerous threats, including urbanization, deforestation, and climate change. To address these challenges, it is essential to engage local communities in conservation efforts and provide them with economic benefits and incentives. By recognizing the ecological and cultural significance of these ecosystems, we can work towards building a sustainable future that prioritizes both human well-being and environmental stewardship. As we move forward, it is essential to support and learn from sacred groves, ensuring their protection for generations to come.

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