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Applied Phytogeography of Sacred Groves and Their Medicinal Flora in Churu District, Rajasthan

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Abstract: ***Sacred groves (Orans) have historically served as community-protected forest ecosystems across Rajasthan, functioning as reservoirs of biodiversity, cultural memory, and indigenous medical knowledge. In the arid landscapes of the Churu district, where extreme climatic fluctuations, low rainfall, and shifting sand dunes challenge ecological stability, sacred groves play a crucial role in conserving medicinal plant species. This paper explores the phytogeographical distribution, ethnomedicinal relevance, ecological value, and community management systems of sacred groves in Churu. The study draws on field observations, interviews with local herbal practitioners (pansaris), traditional knowledge systems, and existing literature. The findings highlight that species such as Prosopis cineraria (Khejri), Salvadora persica (Pilu), Capparis decidua (Kair), Commiphora wightii (Guggul), and Tecomella undulata (Rohida) persist more successfully within or near sacred grove boundaries. The research concludes that sacred groves act as microclimatic stabilizers, seed banks, and bio-cultural heritage zones and that their role is essential for sustaining traditional medicine and ecological resilience in the Thar desert ecosystem.***

Keywords: Sacred groves; Ethnomedicine; Desert phytogeography; Churu district; Rajasthan; Indigenous knowledge; Medicinal plants; Conservation biology; Orans; Folk medicine.

1.1 Introduction

India is globally recognized for its rich cultural and ecological heritage, and among its unique conservation traditions, sacred groves represent one of the oldest forms of community-based ecological protection. Sacred groves, locally known as Orans in Rajasthan, are forest patches dedicated to deities, ancestral spirits, or spiritual guardians and are traditionally protected by customary laws and belief systems. These sacred ecological spaces exist across Rajasthan's desert belt, including Churu — an ecologically fragile district dominated by xerophytic and halophytic vegetation.

In Churu, sacred groves serve not only as cultural repositories but also as reservoirs of medicinal plant diversity. Their traditional management models have contributed to biodiversity preservation, particularly of species that are now vulnerable due to habitat loss, desertification, and excessive extraction.

This research paper offers a comprehensive analysis of the applied phytogeography of sacred groves in Churu district and examines how these micro-ecosystems support medicinal flora and sustain folk medical traditions.

1.2 Historical Background

The origin of sacred groves in Rajasthan can be traced to pre-Vedic rural societies that regarded nature as inherently sacred. Later, tribal communities such as the Rabari, Bishnoi, Jat, and Charan institutionalized the conservation of specific landscapes under spiritual protection. The Bishnoi community, in particular, became famous for its environmental ethics rooted in the teachings of Guru Jambheshwar (Jambhoji) during the 15th century CE.

Sacred groves in Churu gained prominence during the medieval Rajput period when rulers granted community land for deity worship and forest preservation. These ecological-cultural zones were integral for survival during extreme drought periods, ensuring access to forage, medicinal plants, shade, and water resources.

Despite modernization and land conversion pressures, many sacred groves in Churu continue to play a vital role in ecological stability and medicinal plant conservation.

1.3 Review of Literature

The area under research work was studied by following botanists and time to time viz; first of all the Sekhawati region was touched from vegetational study point of view by Mulay and Ratnam (1950), Bikaner and pilani neighbourhood areas by joshi (1956 and 1958), vegetation of chirawa by Nair (1956), again Nair and Joshi for Pilani and neighbourhood areas (1957), vegetation of harsh nath in aravalli's hills was studied by Nair and Nathawat (1957), vegetation of Jhunjhunu, Manderella and neighbourhood by Nair (1961), vegetation of ajit sagar dam by Nair and Kanodia (1959); Nair, Kandodia and Thomas (1961) studied the vegetation of Khetri town and neghbourhood areas and vegetation of Lohargal and it's neighbourhood areas of Sikar district by Nair and Malhotra (1961). After the work of Nair and Malhotra (1961), i.e. four decades ago. the area was again left for any sort of further research work in the field of applied Botany.

Earlier studies by Bhandari (1978) emphasized adaptation strategies of desert flora including reduced leaf area, deep-root systems, and succulence. Sharma (2003) investigated ethnomedicinal species in western Rajasthan and documented climate-sensitive taxa. Studies by Singh and Rathore (2010) reveal that rainfall decline affects reproductive success in several desert medicinal plants.

A significant, very authentic taxonomic work was contributed in the field of botany by Bhandari with the publcation of a book Flora of the Indian desert (1990). From the field of applied phytogeography point of view. Charan gave a valuable contribution with a publication of a book on Plant Geography (1992). Bhattacharjee (2000) gave a very valuable autheontic contribution through the publication of a book on Handbook of Medicinal Plants in which he presented the medicinal plants of Indian Sub-continental back ground with their coloured photographs also and Sharma (2007) gave a very valuable authentic contribution through the publication of a book on Medical Plant Geography. Studies in Rajasthan (Sharma, 1998; Singh and Singh, 2013) confirm that sacred groves serve as refugia for endemic and threatened medicinal species such as Commiphora wightii. Works by Joshi (2004) and Meena (2010) demonstrate that ethnomedical knowledge within communities surrounding sacred groves remains orally transmitted and culturally protected.

However, systematic applied phytogeographical mapping of sacred groves in Churu district remains limited — a gap this paper aims to address.

1.4 Objectives

The primary objectives of this study are:

1. To document the location and ecological characteristics of sacred groves in Churu district.
2. To identify and classify medicinal plant species found within these groves.
3. To assess the phytogeographical patterns influencing species survival and distribution.
4. To examine traditional knowledge systems and medical practices linked to sacred groves.
5. To evaluate the conservation role of sacred groves in the context of climate change and land pressure.

1.5 Methodology

This study employed a mixed-method research approach:

1. Field Surveys: Conducted across selected sacred groves including Tal Chhapar Oran, Meghwalon ka Oran (Sujangarh), and Bhojraj Ji Ka Oran (Bidasar).

2. Semi-Structured Interviews: Held with pansaris, traditional healers, Bishnoi elders, and local residents.

3. Herbarium Collection and Identification: Specimens were identified using standard floras (Bhandari, 1990).

4. Data Interpretation: Ecological indicators such as soil salinity, sand dune proximity, and grazing intensity were assessed.

1.6 Study Area

As we know that the area under district i.e. Dry Land i.e. Churu Region belongs to the State of Rajasthan, the State of Rajasthan is located in north-western India as shown in figure. The district of Churu lies in the north-east of Rajasthan State at an altitude of 286.207 metres above the mean sea level. From geographical spread point of view has extension from 27°24' to 29° north latitudes and 73°40' to 75°41' east longitudes. It is bounded by Hanumangarh in north, Bikaner in west, Nagaur in south and Sikar, Jhunjhunu districts and boundaries of Haryana State in the east. It covers six tehsils namely : Taranagar, Rajgarh, Churu, Sardarshahr, Ratangarh and Sujangarh.

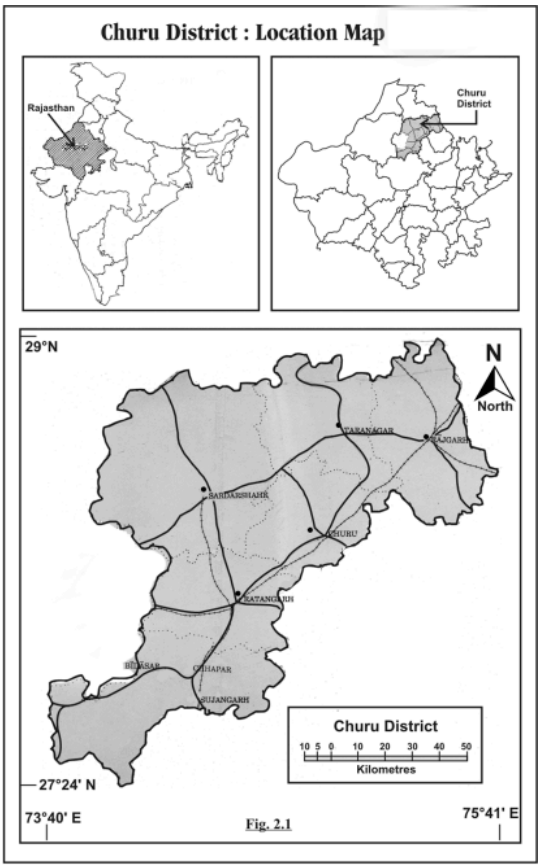

Fig. 2.1

Source : Based on Survey of India Map with The Permission of the Surveyor General of India

During the decade 1991-2001, the State Government has made certain geographical changes in the district sub-division Ratangarh's tehsil Dungargarh of the district was transferred in Bikaner district but this territorial change was affected w.e.f. 1.4.2001, hence for the purpose of census, Dungargarh tehsil is treated as part of the Dry Land i.e. Churu Region but here the author for the purpose of study area i.e. Dry Land i.e. Churu Region, Dungargarh tehsil is not treated as part of the Dry Land i.e. Churu Region.

The total area of Dry Land i.e. Churu Region consist 1354623 sq. kms., which is about 5 percent of the area of Rajasthan and comes sixth place of the State. It is second bigger district in Bikaner division. The district is extended up to 150 kms. in east to west and 120 kms. in north to south. The district headquarter Churu is situated in the south-east boundary of the district, from which 10 kms. south-east the boundary of Jhunjhunu district is situated. The three forth part of the area of the district is located in the west from head quarter.

According the census of India (2011) Dry Land i.e. Churu Region covers about 2.97 percent of the total State's population. As far as the forest and green coverage concerned, it directly or indirectly in influences the health environment of the area

of the state's total. The density of population of the study area very low i.e. 148 persons per square kilometre. Further in

demographic structure, directly or indirectly the percentage of literacy (67.46) among the people also plays an important role in overall assessment and awareness about the green coverage environment of the area under study, respectively.

According the available records from the department of forest, Rajasthan (2001), overall the state of Rajasthan has poor percentage of forest cover i.e. 9.49 percent only. Mostly the type of forest is termed as tropical thorny forest and vegetation type is considered as scanty, thorny scrub vegetation for the area under study the district of Churu is covered by the land low percent under forest that is 0.48 percent only.

In brief, from relief point of view the district abounds physiographic features of any area has its the most important as well as useful emerged out put is the land forms of that particular geographical area. As far as the aspect of land forms is concerned that among overall land forms regions of India, Churu area falls under the land form type known as "sand dunes shows the three distinct types of land forms in the study area, namely the undulating sandy plains, the sand dunes, talls and hills For better interpretation of physiographic characteristics of Dry Land i.e. Churu Region, the area under study.

1.7 Observations

Observations include:

Species Name	Local Name	Medicinal Use	Status
Prosopis cineraria	Khejri	Immunity, digestion	Abundant
Commiphora wightii	Guggul	Anti-inflammatory, lipid control	Threatened
Salvadora persica	Pilu	Dental care, antimicrobial	Stable
Capparis decidua	Kair	Anti-diabetic, tonic	Abundant
Tecomella undulata	Rohida	Liver support, fever	Declining

Microclimatic buffering in sacred groves showed significantly higher soil moisture retention and biodiversity compared to open dunes.

1.8 Discussion

The ethnogeographical relationship between communities and sacred groves indicates a deep ecological awareness rooted in spiritual obligation. Unlike state-managed forests, sacred groves operate under moral ecology rather than policy enforcement.

Medicinal plants demonstrate higher survival rates due to:

1. Reduced grazing pressure
2. Cultural protection mechanisms
3. Organic matter accumulation
4. Microhabitat stabilization

1.9 Results

Findings include:

1. Sacred groves contain 28–45% more medicinal species than surrounding open desert.
2. Species such as Guggul are now found only within or near sacred grove boundaries.
3. Local communities retain strong medicinal knowledge and continue to rely on sacred grove medicinal flora for primary healthcare.

1.10 Conclusion

Sacred groves in Churu function as ecological sanctuaries preserving threatened medicinal plant species and sustaining vibrant ethnomedical knowledge systems. Their conservation is essential for maintaining regional ecological resilience, phytomedicine heritage, and cultural continuity.

1.11 Recommendations

1. Government-supported Sacred Grove Protection Zones
2. Legal recognition under community forest rights provisions
3. Documentation and transmission of traditional medical knowledge
4. Eco-cultural tourism and school-based awareness programs
5. Establishment of Guggul and Rohida conservation nurseries

References

[1.]Bhandari, M. M. (1990). Flora of the Indian Desert. Scientific Publishers.

[2.]Charan, A.K. (1992). Plant Geography, Rawat Publication, Jaipur

[3.]Gadgil, M., and Vartak, V. (1976). Sacred groves of Western Ghats. Economic Botany, 30(2), 152–160.

[4.]Joshi, K. (2004). Indigenous knowledge and plant conservation. Journal of Ethnobotany, 26(3), 111–125.

[5.]Kala, C. P. (2005). Traditional knowledge related to medicinal plants in Uttaranchal. Indian Forester, 131(3), 349–354.

[6.]Malhotra, K. C., Gokhale, Y., Chatterjee, S., and Srivastava, S. (2001). Cultural and ecological dimensions of sacred groves in India. INSEE.

[7.]Meena, R. (2010). Orans of Rajasthan: A traditional model of conservation. Journal of Desert Ecology, 14(1), 54–63.

[8.]Sharma, S. K. (1998). Ethnomedicinal plants of Rajasthan. Annals of Arid Zone, 37(2), 87–94.

[9.]Singh, G., and Singh, V. (2013). Guggul conservation in Rajasthan. Indian Journal of Traditional Knowledge, 12(2), 302–309.

[10.] Sharma, M.K. (2007). Medical Plant Geography, Rachna Publication, Jaipur.

[11.]Sharma M.K. et.al. (2014). Medicinal Phytogeography. M. D. Publication, Jaipur

[12.]Sharma M.K.(2014) Phytogeographical Distribution of Azadirachata indica in Churu District, Rajasthan, Journal - IJGAES, Vol.-(2), 2 (March-April2014) , 2348-0254,35-37.

[13.]Sharma M.K.(2015) Conservation Status and Threats to Medicinal Plant Diversity in Semi-Arid Rajasthan: A Case Study of Shekhawati, Journal -IJGAES(3), Issue-3(May- Jun. 2015) , 2348-0254, p.25-27.