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## Legacy of the Kumaon Himalayas: Ethnobotany, Eco-Friendly Livelihoods, Crafts, and Architecture

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### ARTICLE DETAILS

Research Paper

**Keywords :**

*Kumaun Himalaya, Ethnobotany, Indigenous Knowledge, Sustainable Development.*

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### ABSTRACT

This paper delves into the interconnected realms of ethnobotany, eco-friendly livelihoods, crafts, and architecture, elucidating their intricate relationships and implications for sustainable development in Kumaun Himalaya. Ethnobotany, the study of the traditional knowledge and usage of plants by indigenous cultures, serves as a foundational element in understanding the intricate connections between humans and their environment. Through ethnobotanical research, communities can preserve traditional knowledge systems, promote biodiversity conservation, and foster sustainable resource management practices. Moreover, this paper explores the pivotal role of eco-friendly livelihoods in promoting environmental sustainability and socio-economic development. By harnessing traditional crafts and indigenous knowledge, communities can create sustainable livelihood opportunities that are harmonious with nature. Crafts, often deeply rooted in cultural heritage, not only provide economic sustenance but also serve as a means of cultural expression and preservation. Furthermore, Indigenous architectural techniques, informed by local materials and environmental considerations, offer innovative solutions for eco-friendly infrastructure development.

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### Introduction

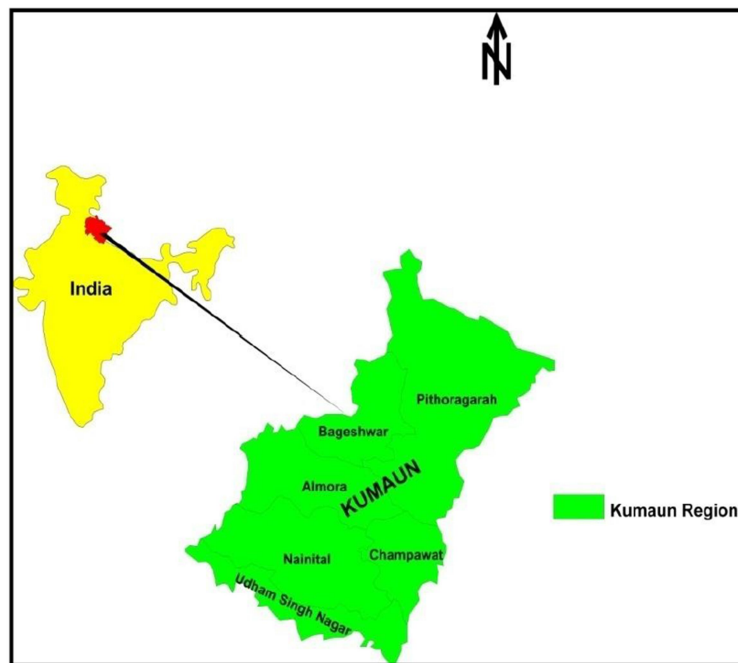
The sustainable traditions in the Kumaon Himalayas have become very important in modern time. Situated in the Himalayan region of India, the Kumaon valleys are rich repositories of indigenous

knowledge systems and cultural practices that have evolved in harmony with the rugged mountain landscape. Ethnobotanical research in the Kumaon Himalayas unravels the profound wisdom embedded in traditional knowledge, where local communities have developed an intimate understanding of the region's flora and fauna over generations. This knowledge not only sustains livelihoods through responsible resource management but also fosters biodiversity conservation and resilience to environmental changes.

Furthermore, traditional crafts serve as both an economic lifeline and a cultural legacy in the Kumaon Himalayas. From intricate woodcarvings to vibrant textiles, artisans preserve age-old techniques that reflect the region's cultural identity while promoting sustainable livelihoods. These crafts not only contribute to local economies but also serve as a means of cultural expression and community cohesion. In addition, vernacular architecture in the Kumaon Himalayas exemplifies sustainable design principles rooted in local materials and environmental considerations. Traditional building techniques, such as stone masonry and timber framing, not only blend seamlessly with the natural landscape but also offer thermal efficiency and earthquake resilience. By embracing indigenous architectural wisdom, communities in the Kumaon Himalayas demonstrate the symbiotic relationship between human habitation and the surrounding ecosystem. Through interdisciplinary research and community engagement, this abstract advocates for the preservation and revitalization of sustainable traditions in the Kumaon Himalayas. By harnessing the intrinsic value of ethnobotany, livelihoods, crafts, and architecture, stakeholders can collaboratively chart a course towards resilient and culturally vibrant mountain communities that thrive in harmony with their natural environment.

### **Study Area**

The extension of the study area is from 28°43' 45" North latitude to 30° 20'12" North latitude and the longitudinal extension is from 78°44'30" East to 80°12'45" East. The study area covers 21035 square kilometres in Uttarakhand. The study area is located in the Central Himalayas where most of the Himalayan population resides. Human footprints are found here since prehistoric times. This folk culture of the study area has developed over many centuries.



### Traditional architecture

Based on various observations and in-depth discussions with owners of traditional buildings and locals involved in constructing structures using traditional styles and technologies, it is determined that these traditional buildings are most suitable for the hilly region of Kumaun Himalaya. Their notable feature lies in their resilience against challenging climatic conditions. Houses built in traditional style are not only best in climatic conditions but are also earthquake resistant, protecting people from sudden earthquakes in the Kumaun Himalaya region. The raw material used in making the houses built in the traditional style in the Kumaon Himalayas was obtained locally, which makes this technology a self-reliant technology for which the local people do not have to rely on any outsider or resources. Contemporary houses are designed solely to meet human requirements, whereas traditional-style houses not only prioritize human needs but also incorporate provisions for sheltering animals and birds. While the ground floor included accommodations for animals, the front and rear sections of the roof featured designated areas for sheltering birds. In the traditional approach, local masons acquired the skills of construction from their forefathers, starting their apprenticeship at the age of 7-8 by assisting their fathers or grandfathers. This early training played a crucial role in honing their craftsmanship over 20-25 years, making them highly skilled. Relying on traditional knowledge, these builders-maintained self-sufficiency in their livelihoods, eliminating the need for external dependence. The proficiency gained in traditional building technology spared them from migration issues, allowing them to sustain their livelihoods successfully. Traditional Kumaun architecture stands as a testament to the profound

connection between culture, environment, and sustainable living practices. Local materials, such as stone, wood, and mud, are ingeniously employed, showcasing a commitment to eco-friendly construction. The intricate craftsmanship evident in these structures not only reflects the region's rich artistic heritage but also highlights a dedication to detail. Designed to withstand the challenges of the mountainous terrain and ever-changing weather, Kumauni architecture plays a vital role in preserving the local identity and heritage. These buildings seamlessly blend functionality and aesthetics, serving as living monuments that beautifully encapsulate the architectural legacy of the region.



Entrance of a traditional house

### **Eco-Friendly Livelihoods**

Since time immemorial rural people have developed their own ways and means to fulfil their basic agriculture and household needs from different natural resources such as free-flowing water of rivers, streams and forest resources available in their surroundings. They possess peculiar indigenous knowledge and technologies unique to their culture which have been generated by ancestors and transmitted from generation to generation. Indigenous Knowledge is the knowledge that exists in local form, different from scientific and modern knowledge, used by the people who are living very near to nature for their subsistence. People make use of their own wisdom and accumulated knowledge from their predecessors. The idea of using energy in water and converting it into mechanical energy has been known to mankind for a long. In the hilly and mountainous regions where there is availability of Perpetual water circulation, traditional water mills convert the energy of moving water into mechanical energy and perform various mechanical operations such as grinding. The state of Uttarakhand,

characterised by its predominantly hilly and mountainous terrain, has numerous streams, rivers, and lakes that maintain a continuous flow of water throughout the year. In response to this geographic feature, rural communities in the hilly areas have strategically implemented Gharat to harness water resources. It is also known as a ghatt or panchakki.

Gharat's have consistently served as a means of sustenance for residents in secluded areas of the Himalayan region and have been an essential element of the cultural legacy. The current research endeavours to comprehend both the architectural structure and the operational aspects of Gharat's. Additionally, an exploration into potential positive and negative shifts in the number of Gharat's in contemporary times has been undertaken. The findings indicate a concerning state of Gharat's in terms of preserving traditional knowledge and technology. Across the Kumaon region, no part exhibits an unchanged condition of the Gharat compared to the past. Hence, there is a pressing necessity to rejuvenate watermills to preserve the longstanding indigenous and environmentally friendly technology employed by the local population. The examination of *Kherola* village's case reveals that enhancing the operational efficiency of traditional technology requires the integration of new technology. However, both *Gharati's* and the government must exercise caution to ensure the longevity of these innovations, ensuring the sustained and smooth livelihood of *Gharati's*. Understanding the incorporation of new technology might pose initial challenges for *Gharati's*. Therefore, the government or other institutions must provide training to *Gharati's*, ensuring a seamless adaptation to the new technology without encountering any difficulties. Obtaining a fair market price for grains processed in Gharat's can serve as an incentive for those utilizing the traditional milling technology (Gharat).

### **Ethnobotanical Practices**

The forest and forest products have historically played a significant role in the economy as well as culture and religion of the Kumaun region of Uttarakhand since ancient times. All of these factors affected the distribution of mankind over the earth's surface and significantly influenced the life of ancient people. The Himalaya possesses a great wealth of medicinal plants as well as traditional and local knowledge. The Uttarakhand state falls in the central Himalaya region and is comprised of 2 major divisions i.e. Garhwal and Kumaun. Uttarakhand has played a significant role in the historical processes of northern India and provides a mini model to understand the traditional Indian medical system. (Arya and Mehta, 2019). About 3.4 billion people in the developing world depend on plant-based traditional medicines. Natural products have been an integral part of the ancient traditional medicine system (e.g. Chinese, Egyptian and Ayurvedic). (Doughari et al., 2009; Sarkar and Nahar, 2007).

The use of medicinal plants in traditional medicine is well-known in the Kumaon region among native people, especially among Vaidyas. The increasing global demand for herbal medicines is putting significant pressure on medicinal plants. Therefore, it is clear that the sustainable use of these medicinal plants can be helpful for the conservation of biodiversity. In spreading our medical tradition, there has evolved a need to connect with the entire traditional medicinal system and organize it with a very strong optimistic outlook. In the Kumaon region, many medicinal plants have been discovered, the use of which is not only in traditional medicine but is also being employed in various modern medicines of contemporary times. In this context, the Kumaon region and the state must promote interdisciplinary and extensive research in this field. This would enable the identification of the true potential of these medicinal plants and facilitate their effective utilization in the treatment of various ailments.

Allopathic medicines may act quickly, but they also come with side effects. On the other hand, traditional medicine may take more time to show its effects, but it has no harmful side effects. In mountainous regions, many people cannot afford allopathic treatment. For such individuals, traditional medicine is a cost-effective and better option. In the present time, many people are planting medicinal plants like Aloe Vera, Rose, Geranium, marigold, tulsi, amla etc., in their gardens, which is becoming a source of income.

### **Kumaon Jewelry Making**

Uttarakhand is geographically odd as well as a socially and culturally rich state. Ornaments made of gold and silver are associated with the religious, cultural, and social beliefs of the native people. These ornaments have special significance in the lives of married women, although men, children and unmarried women also wear ornaments. In Uttarakhand, gold and silver are not only considered as ornaments but are also considered to be a sign of purity, social and economic status, authority, wealth and prosperity. Example- During the Naina Devi Festival in Nainital, Nanda and Sunanda Mata are crowned with silver. Similarly, in the 9th century idol of goddess Parvati was recovered from Almora City and found with Kundal, Hasuli, Ekavali, Bhujband, Katisutra etc (Joshi,2021). Certain ornaments in Uttarakhand culture are mandatory to wear as they highlight a particular aspect of society, such as a woman wearing a Mangal sutra indicating that she is a married woman. At present, due to modernity, the native people have started adopting modern ornaments as compared to their traditional ornaments. Therefore, it becomes necessary that we pass on this traditional knowledge and art to the next generation so that our culture does not become vanish. Ornaments of gold and silver are a must for every woman in Uttarakhand. Traditionally, ornaments were considered a symbol of marriage and a widow did not adorn

herself. Although this custom is still widely followed today, its observance is not strictly followed in the present day. Accepting change is an essential condition of the development of any society, but at the same time, it is also necessary that every society revives the culture and traditions contained in its roots, so that the story of its existence to the future generations can be transferred. In today's time, the influence of modernity can be seen in almost every aspect of society. But in this era of modernity, we do not have to leave our traditional art and culture behind. According to the need of time, it has to be improved and transferred to the next generation. The goldsmiths of Uttarakhand are famous for making gold and silver jewellery and precious gems stone studded jewellery.



Nath: A Traditional Ornament for nose

Gulband: A Traditional Ornament for neck

## Conclusion

Through the incorporation of vernacular architecture, communities can mitigate the environmental impact of construction while promoting cultural identity and resilience. Drawing on interdisciplinary perspectives from ethnobotany, anthropology, ecology, and architecture, this paper underscores the importance of holistic approaches to sustainable development. By recognizing the intrinsic value of traditional knowledge systems and indigenous practices, policymakers, researchers, and practitioners can collaborate with local communities to co-create solutions that prioritize environmental stewardship, cultural preservation, and inclusive economic development. Ultimately, this holistic framework offers a pathway towards building resilient and thriving societies in harmony with nature.

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