

Exploration of Indigenous Knowledge of Vernacular Architecture in the Development of the Lepchas in Sikkim

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Abstract: The quest for a deeper understanding of Indigenous Knowledge focusing on Vernacular Architecture sometimes conceals the achievement of the past. Indigenous Knowledge by definition is evolutionary and is the knowledge shared by the locals or the indigenous people. Vernacular Architecture on the other hand is the shared knowledge of the locals in constructing any forms of architectural designs, products and buildings using local resources. Such Indigenous Knowledge of Vernacular Architecture is shared among the Lepchas in Sikkim. The Lepchas, who are known to be born naturalists are skilled architects and known for attributing local resources to sustain their life. The result of the study of the Lepchas on Vernacular architecture becomes a valuable model of inspiration in present and contributes to the development of the Lepchas in Sikkim. The experience with the vernacular architecture of the Lepchas creates an efficient local design with a model to generate an architecture closer to nature. This paper explores the indigenous knowledge of vernacular architecture as it nourishes their culture and tradition. It also describes the Indigenous Knowledge of the Lepchas focusing on Vernacular Architecture with particular reference to the Housing Pattern of the Lepchas as an age-old tradition which contributes to learning the heritage of the Lepchas in Sikkim.

Keywords- Indigenous Knowledge, Vernacular Architecture, Development, Culture, Traditions.

1. Introduction:

The Lepchas are born naturalists residing in the Himalayan region, Sikkim which covers almost 15% of the total population. They have their mother language known as Rong Ring and their script. The Lepchas are known to have a wealth of indigenous knowledge in attributing local resources to sustain their lives. This paper explores the indigenous knowledge of the Lepchas on Vernacular architecture as it nourishes their ethnic identity and expresses their cultural heritage through the indigenous knowledge of constructing their traditional houses making use of the local resources. As the Lepchas residing in Sikkim before the advent of the Namgyal regime were known to be primitive and survived in the forests using local materials and

resources for the construction mainly of dwellings relating to their respective environments. However, it is known that the Lepchas moved from one place to another living in the forests, clearing a piece of land and making a temporary shed making use of bamboo and reeds. But over time, they started to understand the importance of having a permanent dwelling place for themselves concerning their children and started to construct a permanent house for themselves which has been changing the settlement of Bhutias and Nepalis in Sikkim. Nevertheless, the indigenous knowledge of the vernacular architecture of the Lepchas meets specific needs and accommodates the values and lifestyle of the Lepchas. Beyond sustainability, traditional Lepcha dwellings are the focus of vernacular architecture, which symbolizes cultural identity and serves as a tool for fortifying the Lepchas' ties to their homeland and promoting a sense of place-based identity.

1.1 Theoretical Framework of Indigenous Knowledge and Vernacular Architecture:

Indigenous Knowledge by definition is evolutionary.¹ It is the knowledge that has survived indigenous communities for millennia. Indigenous knowledge is simply known as folk knowledge or a body of information that has been accumulated over time by the local people in response to the demands of their unique local environment. According to Settee, inherited knowledge encompasses the customary knowledge passed down from parents and elders about relationships, methods of knowing, and knowledge useful for day-to-day living.² Many scholars and researchers working in the field of Indigenous people and their knowledge systems have expressed the academic need to include Indigenous Knowledge in every field of research focusing on the indigenous communities globally. However, scholars pointed out that the knowledge shared by the locals is said to be indigenous when it has a relationship and close connection with the land. The relationship is so deep and tied to natural laws that the knowledge is shared orally and through demonstration.

The word "vernacular architecture" refers to native architecture created and constructed using locally available materials that the residents of a given area have adapted. The phrase refers to homes and structures that have been erected over time by locals without the assistance of qualified architects or builders. Vernacular architecture is closely linked to the natural surroundings; local building techniques and materials are typically used in its creation. Vernacular architecture encompasses a wide range of architectural styles, including homes, barns, sheds and even temples. The primary tenets of vernacular architecture are that the native building style reflects the historical relevance, cultural norms, and historical events of a particular place or group. A community that recognises indigenous architectural expertise can preserve its history and identity by safeguarding and maintaining this type of vernacular architecture. Buildings constructed in accordance with regional customs are characterized by scholars such as Noble³ and Ambrose et al. as a specific type of architecture unique to a given location and period. This type of architecture makes use of locally accessible materials and will reflect the cultural, historical, and environmental contexts of the area in which it is constructed⁴.

¹ Paul. Salvin. 2015. 'Political Construct of Intellectual Property Rights: A Critique from Indigenous Knowledge Perspective'. International Journal of Intellectual Property Rights. Vol.6. No.1. p.39.

² Settee. P. 2011. Indigenous Knowledge: Multiple Approaches. Counterpoints. p.436.

A community's or place's cultural values, customs, and history are expressed through vernacular architecture, which also sheds light on that group's cultural practices and worldview.

1.2 Indigenous Knowledge of Vernacular Architecture with special regard to ‘Dumten Lee’-A Traditional Lepcha House of the Lepchas in Sikkim.

Sikkim constitutes one of the states in India and presents a comparable scenario concerning the form, style and techniques of vernacular architecture. It is so because Sikkim is a Himalayan region with the Lepchas residing as an indigenous people with various indigenous knowledge systems. The region became the habitat of the Lepchas since time immemorial who are known as skilled architects and born naturalists. For them, the vernacular architecture is the outcome of the dynamics between requirements and available resources cradled in their traditional culture. The rich traditional value and contemporary relevance of vernacular architecture have gradually opened up new possibilities and scope to the Lepchas. The applicability of these architectures promotes not only tourism as heritage sites but also other productive ends to economic development as well as socio-cultural development. The Lepchas' love and pride are greatly influenced by the built vernacular architecture that focuses on Indigenous Lepcha homes. It is now recognized as a desirable feature and byproduct of society. It possesses interest and beauty which is the work of the Lepchas with the creation of time. The Indigenous Lepcha House is the fundamental expression of the culture and its relationship with nature. The Lepchas were skilled architects making use of bamboo in any kind of architectural work. The Lepchas have a strong connection with bamboo as they were said to have been created by *Itbu Rum* along with bamboo as a blessing in making helpful equipment for their sustenance. Bamboo was used in constructing small huts like houses, fences, arrows, cane bridges, furniture etc. for their daily use. The most crucial feature of Lepcha architecture is the construction of traditional houses by the Lepchas. They are known to be the perfect architects because the tools, weapons, and cane bridges built by them are regarded to be more efficient even at present.

2. Indigenous Lepcha House: Age Old Methods and Tradition:

The Lepchas were completely nomadic until the early seventeenth century. They would only construct makeshift huts and travel to the forests, where they would hunt and eat any animals they could manage to kill as well as wild plants, about which they are quite knowledgeable because they are aware of every plant's edible quality⁵. During the early eighteenth century, the foreign scholars who travelled the Himalayan region of Darjeeling and Sikkim noticed that the Lepchas resided in the dense hilly area surrounded by lush forests and their house was built almost entirely of bamboo except for the framework, which was mainly of wooden logs. The floor, the walls, the roof and the thatch consist all of bamboo. There is no division in the room as the family sleeps together, and as said, the Europeans saw the Lepchas as semi-barbarous and dirty. They always kept their clothes the same while going to bed as it never occurred to them regarding personal hygiene and making themselves prepared if the wilds attacked during the night. The houses of the Lepchas in the hills consisted of a timber framework, with one end of the flooring beams resting on the hillside and the other supported on posts from twelve to

fourteen feet in height. The roof, floor and walls are usually made of split bamboo; the top is lined with large leaves of a tree abounding in the forest and assumes a highly polished appearance due to the smoke from the fireplace. The bamboo is placed at some distance from each other at the side to form a kind of window with the whole length of the house. A square bamboo frame in one corner of the room confines a fireplace of mud about eight inches thick, five stones in the centre forming resting places for the cooking pots. The use of bamboo artefacts is common among the Lepchas as they believed that keeping the cane and bamboo artefacts at home kept them away from the ill effects of evil spirits and the domestication of bamboo nearby their house was mandatory.³ are a few bamboo vessels, leaves for plates and a frame made out of bamboo hung to smoke meat, which makes the room full of smoke. The roof projects some distance over the walls, protecting them from rain and forming a verandah around the buildings. The room is sealed with crushed bamboo through about three-fourths of its breadth at a level with the base, creating a sort of upper room or attic used as a store room to which the ascent is by a giant bamboo, notched to form a rude stair usually made out of a long wooden log. It is often said that the *Lee Rum* (Divine Protector of the House), which is present in every house of the Lepchas, resides in the attic. Any outsiders who would try to step inside the attic would fall ill, which could be cured only by offering prayers to the '*Lee Rum*' and seeking forgiveness, which is mythological. On the ground floor or below the house, there lies a hut platform, where the livestock are kept as they treat the animals quite as one of the family.

2.1 Local Materials and Indigenous Architectural Knowledge in Constructing Indigenous Lepcha House:

All traditional buildings used to be constructed from perishable materials such as wood, mud, reed, bamboo etc. There was no availability of bricks, tin roofs, or iron nails which was a slow process in the Lepcha settlement of Dzongu. The technique of constructing such a traditional hut was unique as it consisted of a roof, rough wooden beams and bamboo poles, which were thatched with thick layers of grass and reed so that it may last for several years. Building the Lepcha hut is purely an indigenous art of the Lepchas. The house is constructed with nine vast pillars of the full tree size and length, erected on nine giant flat boulders built on an enormous level ground surrounded by cultivated lands.

It is known that they placed a substantial flat stone below the pillars at ground level to protect the wood from the pesticides and the belief that the house would stand still during a rough situation which is why it is known as *Dumten Lee* or *Damsyok Lee*. The pillars were placed above the vast flat stone, and it was known as *Dumten*. The four pillars were opened and tied with *dampo* (meaning strong thread to tie, but here it implies bamboo strings to connect the wooden pillar) before being placed on top of the flat stone, and it came to be known as *damsyok*.⁴ The house is rectangular, and the walls are bamboo weaved, plastered with mud well

³ Morris, J. (1958). 'Living with Lepchas: A book about the Sikkim Himalayas'. William Heinemann Ltd. London.p.18.

⁴ Interviewed Mr. Namgyal Lepcha, Age 56, Folklorist and Cultural Secretary, MLA, Passingdang, Dzongu.

mixed with cow dung and straw. The roof is round and slanting and is thatched with long reed grass. It is noted that the Lepchas, in building their colossal house, used only a single iron nail, as iron was not introduced to them in the earlier period. Instead, wooden wedges or wooden notches are nailed so that the inserted wooden crossbeams may not get loosened. The house is known for earthquake resistance, and if any landslide occurs, the flooded soil passes through the open spaces between the enormous pillars without damaging the home.

In the affection and pride of the Lepcha people, the traditional Lepcha house, in the form of vernacular architecture, holds a central place. It is now recognised as a desirable feature and byproduct of society. It seems casual but structured. The constructed The Lepcha people's culture and affinity with nature are fundamentally expressed through their vernacular legacy, which holds great significance. The Lepchas naturally and traditionally create their homes using indigenous architecture. In order to respond to social and environmental restrictions, it is a continual process that involves necessary modifications and adaptation. The modernising influences that the Lepchas have embraced pose a threat to this tradition's continued existence.

3. Findings And Discussion:

The recording of the vernacular architecture of the Lepchas is difficult due to the area's large dimensions and the transformations that started during the Namgyal regime by replacing the traditional roofing with industrial materials on almost all the traditional houses. Therefore, the identification of authentic old houses is very difficult. Most of the preserved old buildings are either abandoned or in very bad condition, inhabited by very old people or looked after sporadically by some relatives of the owners. The locals are not interested in any conservation or repair because the building of new modern houses has become common and most of the houses are modest ones erected by the inhabitants themselves, a population with greater indigenous knowledge and skills. This may be one of the explanations why they have been preserved in their authentic condition. Most of the deterioration is caused by the lack of maintenance work related to the old age of the people living there and the young ones migrating to the cities to pursue education and employment.

Studies have given the term Vernacular architecture but for the Lepchas, it is known as folk or indigenous knowledge, and the traditional Lepcha house is mainly a form of native house. Vernacular architecture goes beyond the knowledge shared by the Lepchas in constructing their houses from their origins as rural bamboo and thatch houses since time immemorial. The house's characteristic has always been its steeply pitched roof, which is held up by wooden posts. This made it possible to lift the one room of the house above the floor and create an open space directly below. A typical house comprises two separate rooms, an open living area that serves as the kitchen, and a square or rectangular structure mostly composed of wood, bamboo, and thatch.

The house is surrounded by a multitude of indigenous knowledge: customs determine the lifestyle that is lived within its small confines; folklore and beliefs determine how the house is oriented on a site; rituals accompany the construction of the house; and communal ties unite all Lepchas in building the house. One could argue that the local culture has influenced the shape of these homes. But one could also argue that the house's defining characteristics are its

location and temperature, the availability of natural building materials, and the expertise of the local builders. The most notable feature of the home, which adapts to the climate, is the thick thatch roof, which protects the interior from the sun and lets raindrops fall off its broad, steep overhangs to shield the walls from water. The bamboo floor and the rough wooden board slats on the floor allow air to flow through the house. The house, therefore, is a result of cultural and environmental influences which shows the Lepchas connection to the environment and the vernacular architecture's potential in developing the Lepchas in Sikkim.

Conclusion:

The exploration of indigenous knowledge of Vernacular Architecture has many prospects and avenues for the development of the Lepchas in Sikkim. As a traditional asset and an identity marker, there is a necessity to endeavour to withhold such architecture as many challenges are faced in the contemporary period but such indigenous architecture in the form of the Lepcha house situated amidst little manipulated natural environment, surrounded by traditionally acknowledged sacred forms of nature are rich with serene beauty and such prime location of the Lepcha settlements can turn into a global destination which contributes in the development of the Lepchas. Also, these architectures bear the ethnic stamp and are rich in embedded culture, which can thus be the source of heritage tourism, and if these architectures are continued with the traditions, then there will be a development of tourism around such vernacular architecture and boost the economy of the Lepchas and contributes towards community development as well. Further, the commercialization and marketing of Indigenous items of the Lepchas like food, liquor, dress, and handicrafts marking the vernacular architecture will be commercially beneficial. Further, such indigenous forms of architecture, local building materials and techniques possess a commercial and marketing potential and the local Lepcha artisans will benefit from this. Thus, the Vernacular Architecture are the assets of the Lepchas comprising culture and traditions with indigeneity which bear contemporary significance and value and the development of the Lepchas in Sikkim need to be based on local ethnic ground as it lies the true indigenous knowledge of the Lepchas.

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