

The Traditional Knowledge System: Some Issues among the Lepchas of Dzongu, North Sikkim

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ABSTRACT

The debates on traditional knowledge are continuously making rooms for non-formal areas of knowledge and experiences. The approach brings out the connections between local and tribal peoples' understanding, their practices and the development interventions. The present article discusses the different areas of knowledge systems and the policy interventions in the management of land associated with culturally constructed sacred landscape of Dzongu among the Lepcha tribals of lower Dzongu valley of North Sikkim. The article notes that the Lepcha tribals had to change their occupational strategy with the changes in the policies of the land management in different periods of rule and in turn lost their traditional resources and related knowledge spheres.

The document on Traditional Knowledge (TK) by World Intellectual Property Organization puts forth that the "... local communities justly cherish traditional knowledge (TK) as a part of their very cultural identities. Maintaining the distinct knowledge systems that give rise to TK can be vital for their future well-being and sustainable development and for their intellectual and cultural vitality. For many communities, TK forms part of a holistic world-view, and is inseparable from their very ways of life and their cultural values, spiritual beliefs and customary legal systems. This means that it is vital to sustain not merely the knowledge but the social and physical environment of which it forms an integral part ... No single definition would fully do justice to the diverse forms of knowledge that are held by traditional communities; and no form of legal protection system can replace the complex social and legal systems that sustain TK within the original communities".

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The Traditional Knowledge (TK) is a broad term referring to knowledge systems, encompassing a wide variety of areas, held by traditional groups or communities or collectively acquired in a non-systemic way from experience and transmitted inter-generationally. These knowledge systems are said to have significance and relevance not only to its holders but to the rest of the humanity.

Two debatable questions are often put before. The first question is that where the traditional knowledge and where the contemporary knowledge begins? Is there any demarcating line? The scholars are coming across with few concerns on which the scholars are debating or acknowledging the concerns on traditional knowledge.

It is accepted that much of the traditional knowledge is contained in oral knowledge traditions passed from generation to generation. With the effect of globalization and modernization these systems of knowledge are increasingly under the threat. It has been increasingly acknowledged by the global world that the local or tribal people have their own effective “science” and resource –use and practices and the western mode of thinking needs to understand something about their knowledge and management systems (Sillitoe 1998:223) and thus make room for other types of knowledge and experience (Agarwal 1996:474). This approach regards that traditional knowledge is a “valuable and underutilized resource” and sets out to make connections between local/tribal peoples’ understanding and practices and the development intervention through Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), and Gender Analysis (Chambers, Pacey & Thrupp, 1989). It considers that the outsiders are primarily catalysts and facilitators of open exchange of ideas and information between various stakeholders.

A more recent approach has been the actor-oriented approach, which centers on the interfaces between different social worlds and has been enthusiastically taken up in agricultural and communication studies, participatory rural appraisal and stakeholder analysis. Another initiative has been in acknowledging the environmental knowledge of the tribal/local people. The traditional ecological knowledge (TEK) has enabled these people to utilize the natural resources of their local environment in an ecologically sustainable manner for thousands of years. This has led to consider TEK as ‘cultural knowledge’ which produces and reproduces mutual understanding and identity among the members of a community.

Many scholars acknowledge the role of culture and religion in determining attitudes and behaviour towards the environment (Dwivedi and Tiwari 1987; Banwari 1992; Gottlieb 1997). Any developmental policy taken by the state requires an understanding to the religious and politico-economic aspects represented by the culturally constructed landscape. Scholars argue that ‘a natural space always appears as a cultural landscape because it is culturally constructed’ (Seeland 1997:1). A landscape embodies peoples’ experiences, social memory and their practices (Bourdieu 1990). Arora (2004) says that the embodiment of knowledge, identity and authority in sacred landscape is not only

unique to Sikkim but common in the Himalayan region and South Asia. It is a land where almost every water body, small or big, is treated as sacred. The sacredness begins at species level and reaches up to the landscape level with the Mountain Khangchendzonga acting as guardian deity.

Under the background of the above approaches and concerns, the present exercise examines the nature of knowledge with particular reference to the traditional knowledge and its treatment within development interventions. It highlights the different areas of knowledge systems among the Lepchas of Sikkim with particular reference to Dzongu Reserve area. The article begins by discussing the ethnographic context of Sikkim with reference to Lepchas of Sikkim. It then discusses the policy interventions in management of land in different periods, role of forest ecology, environment and comprehension of knowledge associated with culturally constructed sacred landscape of Dzongu. The third section deals with the developmental interventions and its confrontation with tradition, traditional knowledge and the sacred landscape.

Objectives

The study was conducted within the framework of environmental and cultural conditions of the Lepcha society. Thus the main objective of the study was to understand traditional knowledge in its social and cultural context, to look into the official proclamation of Dzongu as a reserve area, to understand the livelihood strategies and the indigenous environmental knowledge in respect of traditional knowledge system, the cosmological attitudes of the people towards the livelihood strategies along with the associated healing properties and the concept of sacred landscape versus concept of development.

Methodology

The fieldwork was conducted in two phases. In the beginning, a reconnoiter survey was conducted in August 2008 to get the baseline information of the Dzongu Reserve Area by visiting the villages of Dzongu hills of North Sikkim. Discussions were carried out with the officials and learned people of the area. The baseline information as well as the secondary information revealed that Dzongu Reserve Area has two eco-zones based on the vegetation and altitudes, i.e., Upper Dzongu and Lower Dzongu of which the Upper Dzongu is much visited and well documented (Gorer 1938, Morris 1938) where as the Lower Dzongu area has remained less attended by the researchers. Thus the study was concentrated in Sangsong-Gnon village in Hee Gyathang gram panchayat of Lower Dzongu during Nov 08-Jan 09 for in depth micro level study. The empirical data was collected through household census, participatory observation, group discussions, interviews, case studies using schedules and questionnaires. A number of interviews were taken from the Lepcha respondents especially from the traditional medicine man, religious leader, and people from both sexes of different age groups. Information's were collected through interviews, through both structured and open-ended questions.

Ethnographic Context of Sikkim

Geographically Sikkim encompasses the lesser Himalaya, Central Himalaya and Tethys Himalaya. The elevation ranges from 1250 meter to 8558 meter. The climatic conditions vary from place to place due to great altitudinal variation. It is scorching summer at the foothills during April-May and freezing cold in winters at high mountain regions. The weather is pleasant during the spring i.e.; March to May and in autumn i.e. September to November. The rainy season experiences a wide range of humidity which rises up to 95 per cent (Maity et al 2001:2585-87). Monsoon sets in month of June and continues till September with 200-500 cm rainfall. The lower hills enjoy a subtropical climate whereas in the interior part the climate becomes gradually more temperate with cool winters and hot summers. Teesta and Rangeet are the two life line river of the state. Sikkim hills comprise the main catchment areas of Teesta river which is fed by numerous springs, streams and tributaries.

The vegetation changes from tropical pine forest, tropical broad-leaved forest, subtropical forests, temperate broad leaved and coniferous forest, sub-alpine scrubs, alpine meadows and swamps. The faunal species consists of endangered species like Bhral, clouded leopard, snow leopard, Leopard cat, Red Panda, Musk deer, Tibetan antelope, Himalayan black bear etc. The floral richness includes varieties of orchids, rhododendron, bamboo groves and cardamom.

The major ethnic boundary is between the Lepcha (the autochthones of Sikkim)-Bhutia (descendants of Tibetan and Bhutanese immigrants who came to Sikkim in the 16th and 17th centuries) groups and the migrant Nepali groups who constitute numerical and political majority of Sikkim. The Lepchas have been influenced largely by the Bhutias, who ruled Sikkim for about 300 years, and the Nepalis who migrated to Sikkim and Darjeeling district from Nepal in the late 18th and 19th centuries. The Tibetans as rulers were powerful while the Nepalis who migrated to this area in large numbers became socially dominant in many ways. In addition, there were the influences of the Christian missionaries, who arrived from the nearby British-ruled Darjeeling area. There were other groups came to Sikkim as businessmen, traders, service providers and labourers. The Lepchas and Bhutias were the ruling elites during the rule of the Namgyal dynasty who are presently marginalized by the socio-economic and political mobility of the Nepalis in contemporary Sikkim.

The population of Sikkim is predominantly Hindu (68 per cent), the Buddhist comprises a large majority (27 per cent), while the Christians comprise a small component of the population (3 per cent) and Muslims are in insignificant numbers (Lama 2001:7). Out of the total population of 540493 about 20.6 per cent are scheduled tribes while the scheduled castes (exclusively of Nepali origin) comprise about 5 per cent of the total population (Census of India 2001).

Very little information is available on ancient history of Sikkim, except the fact that the first inhabitants were the Lepchas or *Rong* (ravine folk). However, along with myths, the environment, ecology, rivers and tropical forests have played important role in shaping the history of Sikkim. According to the lore, the Lepchas were food gathering people who claim to have come from Mayel, a legendary kingdom on the slopes of Khangchendzonga and lived in close harmony with nature—the flesh of animals, fruits, medicinal herbs, honey and fibres.

History reveals that Lepcha kings ruled the area before 1641. A Namgyal prince of Minyak dynasty of Kham region of eastern Tibet went on a sojourn cum pilgrimage towards west along with his five sons during the first half of the fifteenth century. The *Chogyal*, along with the three lamas proselytised the Lepcha tribes into Buddhism and annexed the Chumbi Valley, the present day Darjeeling district and parts of eastern Nepal. This place became the nucleus of kingdom of Namgyal dynasty in Sikkim in the first decade of the 16th century which continued before its inclusion in India in 1975. During the rule of Namgyal dynasty, the lamas and shamans (*mun*) played a significant role in legitimizing the authority of *Chogyal*. After the 1975, though the political role and dominance of the religious functionaries lessened but still they had some dominance in the political field. Under the special provision of Indian Constitution, the Buddhist lamas elect a Buddhist monk to the Sikkim Legislative Assembly. No non-Buddhist or a non-Sikkimese can contest elections for this reserve seat. The state regularly faces ethnic tensions over the resource allocation and thus while implementing development projects and modernizing Sikkim's economy the balancing of the aspirations of different ethnic groups is the real challenge.

Agriculture is the mainstay of the region and 80 per cent of the people depend on it. Most farmers are small farm holders as per capita availability of land has been declining rapidly due to population pressure. The climate and seasons are favorable to the growth of a large number of high-value cash crops like cardamom, ginger, potatoes and horticultural crops.

The Tribe and Dzongu Reserve Area

The Lepchas are mainly concentrated in the extremely restricted access area of Dzongu Reserve Area in North Sikkim and scattered in all the districts of Sikkim, the Darjeeling Hills of West Bengal, Illam district of Nepal and in parts of west Bhutan. In 1958, Tashi Namgyal, the then *Chogyal* of independent Sikkim reserved the Dzongu area was for the Lepcha community through a royal proclamation. The Lepchas of Dzongu hills were thus given protection by restricting the entry into the area by all non-Lepcha, including the Lepchas from other parts of Sikkim. After the merger of Sikkim into the Indian Union in 1975, the Indian Constitution was amended to provide the protection to Dzongu's special status.

The literatures do not contain any history of migration of the Lepchas. They believe that they originated from the divine peaks of Mount Kanchenjunga and the valleys around them. They identify themselves as 'Rongkup'. The word has come from *rong*, which means hill, and *kup* means the children, thus identify themselves as children of hill.

Linguistically they belong to the Tibeto-Burman group and have their own distinctive language, script and literature and were accorded Scheduled Tribe status in 1978. Most of the Lepchas believe that Lepcha script was invented by Thekong Mensalong, a legendary Lepcha figure who is believed to have lived towards the beginning of the 17th century. But it is accepted by many that it was invented by the third king of the Namgyal dynasty, Chador Namgyal, in the eighteenth century. Another version claims that the script came to Sikkim via Tibet along with Buddhism. Tibetan scholars have recorded that the Lepchas were given their script by Lhatsun Chhembo, one of the three monks who consecrated the first Chogyal at Yuksom.

There are several hypotheses regarding their place of origin. Some claim Tibet, while others have cited possible links to the Kirats of east Nepal (Fonning 1987). They classify themselves regionally according to the old administrative jurisdictions under the Sikkim kings.

Renjyong-mu—The Lepchas living within the present state of Sikkim and the present Darjeeling and Kurseong subdivisions of the District of Darjeeling in state of West Bengal.

Ilam-mu—The Lepcha people residing in Ilam, the easternmost district of Nepal.

Tamsang-mu or Dalim-mu—The Lepcha people inhabiting in southeastern lands, which lie to the east of river Rong-Nyu or Teesta, along with the Kalimpong subdivision of Darjeeling district of West Bengal including the Ha province, the western most part of present day Bhutan, along with some portions of the Duars plains of the south.

Dzongu -The Landscape

Dzongu Reserve Area is situated between the Mt Kanchenjunga and Mt Siniolchu at the close proximity to the Kanchendzonga Biosphere Reserve, about 70 km north of Gangtok. The area lies from 88.17 E 88.31 E and 27.22 N to 27.34 N. Dzongu is a Tibetan word a combination of two syllables, i.e., *Dzon*, meaning hillock and *gu* meaning nine which means that Dzongu is a concentration of nine hillocks. It is somewhat triangular mountainous land with approximately 60 kms. on each side, and bounded on the south-east by the river Teesta, on the north-east by the river Talung and on the third side by the mountain peaks of Khangchendzonga (Gorer 1938).

There are two entry points to Dzongu hills. People mostly use the Sungklong Bridge to enter from Mangan, the district headquarters. After crossing the bridge, the road bifurcates and one way goes directly to the villages of Upper Dzongu hills and the other to Lower Dzongu hills. Another entry point is through Phidang checkpost via Dikchu town. Through this point one goes directly to Lower Dzongu hills. Entry to the Dzongu requires a special permit from the government. Presently due to the agitation surrounding the Hydroelectric Power project on Teesta river, the entry measures have been stringent. For the entry into the area, the tourist party requires the permit through the travel agency, but for research work *Mutanchi Lom Aal Shezum* (MLAS), the NGO of the area works as facilitator.

The Dzongu reserve area comprises of the whole of Talung Valley and western part of the Teesta River. The elevation of the area ranges between 800m and 6,000 m above the sea, therefore the regions belong to different ecological zone with steep sided valleys and gorges with well-drained flanking slopes. Due to the altitudinal variation, the flora and vegetation varies from warm sub tropical forests, temperate deciduous forests, and alpine zones in the higher ridges.

The floral wealth of the area is rich and diverse. The forest represents a wide variety of woody tree species, shrubs, lichens, epiphytes and mosses. Among the woody trees, *Quercus* (Oak) and *Castanopsis* (Chestnut) are among the dominant species of temperate region whereas *Abies densa* (Silver Fir) and Rhododendrons are the dominant species in the sub-alpine zones. The area is equally rich in other flowering plants such as variety of *Primula*, *Meconopsis*, *Aconitum* (Bikh, Bikhma), *Potentilla*, *Bistorta* and *Gjentiana* which provide an additional charm to the alpine meadows. Many species of Bamboos (*Dendrocalamus* sp and *Arundanaria* sp) are used by the communities for house construction and local handicrafts. A number of wild plants such as *Rhus semialata* (Bhalayo), *Litsae citrate*, *Juglans regia* (Okhar), *Machilus edulis* (Kaula), *M. odoratissima*, *Bassia butyraea* (Chiuari), *Girardinia palmate* (Allo Sisnu), *Laportea terminalis* (Patle Sisnu) and *Tupistra nutans* are used as food items in different ways by the villagers. Many edible varieties of mushrooms, numerous *Diplazium* sp. (Ningro) and *Dioscorea* (Ban Tarul) are also found in the area. Lantana is a major weed in this region. The medicinal plants include *Artemisia vulgaris* (Titepate), *Eupatorium adenophorum* (Banmara), *Hydrocotyle asiatica* and widely used for different purposes but not marketed. On the other hand, *Aconitum spp* (Bikh, Bikhma), *Berginia liglata* (Pakhan bhed), *Heracleum nepalense* (Chimphing), *Litsae citrate* (Siltimbur), *Oroxylum indicum* (Totala) are openly extensively marketed in the local markets.

The forests are home to several endangered species of birds like the Rufous-necked Hornbill, Great Indian Hornbill, Chestnut-breasted Partridge, Black-breasted Parrotbill, Grey-crowned Prinia and Ward's Trogon. Other fauna includes the Peafowl, Python, Geckos, Porcupine, Assamese Macaque and Barking Deer; a host of butterflies and other invertebrates, riverine fish, frogs and toads.

The Teesta (*Rongnyu*) and Tolung (*Rongyong Kyoung*), the two important rivers flow through the area. The river Renkyoung divides the area into two main ecozones, the Upper Dzongu and the Lower Dzongu based on the altitudinal variation. The settlement area of the upper Dzongu extends from 1219-2000 m and lower Dzongu from 914-2000 m. The harsh ecological condition has immense impact on the socio-economic, cultural, religious, art and crafts and the belief system of the people where as the forest, hill and river resources fulfill the basic need of the Lepcha.

Villages and Settlements

Many forest villages are situated in the Dzongu hills where the Lepcha tribals are living for generations. Administratively Dzongu forms the block with its headquarter at Passingdong village in Upper Dzongu. The settlement pattern and cultivated land are situated between 3,500ft and 7,500 ft above sea level. Above the cultivated land is the forest from which wild produce is gathered, and was used as hunting place and grazing land for cattle.

Dzongu has eight gram panchayat units. The upper Dzongu Gram Panchayat falls under the Kanchendzonga Biosphere Reserve and comprises six gram panchayat, i.e. *Tingvoong G.P.*, *Bey-linzah Sakyong- Pentong G.P.*, *Lingthem- Lingdem G.P.*, *Safo-Passingdong G.P.*, *Barfok- Lingdong G.P.* and *Ship-Gyer G.P.* The Lower Dzongu area comprises of two G.P units i.e. *Lum-Gor Shangtok* and *Hee-Gyathang G.P.*

The villages are mostly uniethnic though few Bhutia, Nepali and Rai families are living in many villages either as service group or through marriage. Few Gurung families ritually connected to Tholung Monastery live in Lingzya village. The Lepcha villages are situated in the hilly forests in the midst of large huge trees, orchids, bamboo shrubs, springs and numerous creepers. From the road, one may not get an idea of a nearby village. Several footpaths naturally made by treading over the bushes, shrubs and small plants are used by the villagers for movement. They are followers of Buddhism along with their traditional belief in nature worship. There are three Gumphas in Dzongu the Talung monastery, Lingthem monastery and Gyathang monastery which come directly under the jurisdiction of Pemiongchi monastery belonging to subsect of the Nyengma pa. There are smaller Gumphas in different villages which come under the jurisdiction of these monasteries.

Study Village—Sangdong-Gnon Village

Though administratively Sangdong and Gnon are two different village but while conducting the study it was found that in many socio-cultural aspects these two villages act as one entity. These villages can be approached from Mangan the district town via Sungklong bridge check post and another through Phiadang Checkpost via Dikchu. Apart from any official work for which a villager has to go to Mangan, the villagers of Lower Dzongu prefer to go to Singtam town for marketing, as it is much cheaper than Mangan.

The total population of the Sangdong-Gnon villages is only 377 in number. The Sangdong village has only 42 families having total population of 280. The total number of males is 149 and families are 131 in number. The Gnon village has only 15 families of which the total population is 97. The male population comprises of 53 heads and females are 44 in number. Both the villagers have government primary school which is attended by the children of the village. The attendance of the primary school is very high. Almost every house sends its children to the primary school for education. The middle school is situated at Sangdong village and is also well attended but it has been observed that the students often drop out after class IX or X. The High School and Higher Secondary School is situated at Gyathang village. The primary health centre and gram panchayat office is situated at a distance of 7 kms from Sangdong village and 10 kms from Gnon village. The villagers are forced to walk a long distance to visit the doctor. They even prefer to go there to see specialist doctor in Mangan or Singtam, if Bongthing asks them to do so. The villagers regularly go to Dumpling Gumphu under the jurisdiction of Gyathang monastery at Sangdong village to pay the religious obsecience.

Creation Myth and Derivation of Knowledge

To the Lepcha tribals his creation myth binds him to the land he lives, it helps him to connect with his ancestors, his beliefs, the ideas of the land and daily necessites for his livelihood. It helps him to derive his understanding on the concept on year, the twelve year cycle, concept of week and day and the origin of clan.

Itbu Rum, the man and Kumsiting, the woman (the creators) are believed have created the progernitor of Lepcha from the two peaks of Khangchendzonga. Itbu Rum created a boy from his right hand and a girl from the left hand. The boy was named Phudongthing and the girl was named Narzong Nyu. They were brought up as siblings and resided in the higher reaches of Himalayas. Time passed on and these two children became young. With the coming of age they stepped on incest relations and had children. As it was a tabooed relation each time a child was born, the couple killed it and threw in the jungles around. After sometime several demons and witches (*moong*) appeared from different areas of the earth and began creating disturbance in the surroundings. A dog named Hulboi always accompanied Narzong Nyu. He knew every thing about the two erring couple. When the creator came to know about the sin, the couples were thrown down to the earth to live a sinful life surrounded by their devil children (*moong*). Eventually they gave birth to a child which was not a demon and named of Ril Bu Shing. As it was their first real child and the mother treated it tenderly and suckled it with loving care. When the demon children saw this they were very angry and killed Ril Bu Shing and buried him near a small peak on the right bank of Talung river. The parents were very upset and found that life was painful and divided their property and separated. Phudongthing moved towards Tibet and his wife Narzong Nyu towards Sikkim. It is a belief among the Lepcha that those living on the Tibet side are more prosperous, on the other handthose living towards the Sikkim side they are showered with curse. Prior to this, the grandmother Kumsiting called all her demon grandchildren together and addressed them.

All came with the exception of Dom Mung, the demon of Leprosy who did not hear the summons. She told them that in future there would be no objection to their eating the souls of human beings and causing diseases but when the offerings would be made to them on behalf of these same humans by Boongthing or Mun, they must accept them and leave the human beings alone. This is believed to be the origin of making sacrifices to the various demons during any illness. But since Dom Mung was not present at the meeting and as he did not receive this instruction, there is no cure for persons with leprosy. The rituals observed during the healing processes by the Mun/Bongthing connect the Lepchas with this aspect of myth.

The origin story informs also how the Lepchas derive their concept of year, the conception of twelve-year cycle, the concept of week and day and origin of clan. It is believed that the first demon child of Phudongthing and Narzong Nyu was Lasso Moong who lived in a tree called Neolkung. As he was disturbing the mankind on the earth, killing people and causing disease, people planned that he should be killed. An insect was summoned to cut the tree from inside so that no one would come to know about it before falling. The insect was instructed that the tree should be felled in the direction from where the dead men come at every to disturb the people. Time came and the tree blocked the way for dead man. From that day, the dead and living persons are unable to meet. From here began the ritual of paying respects to the dead ancestors. But the Lasso Moong ran away from the tree and few brave soldiers followed him from place to place. They reached the foothills of Khangchendzonga in search of him. Lasso Moong changed into disguise several times to save himself and fought with the soldiers for twelve years. Accordingly these disguises later on became the 12 year animal cycle of Lepcha /Buddhist year which are as follows:

12 Year Animal Cycle

Year	Lepcha year	Animal cycle
1	Kulok	Rat
2	Long	Ox
3	Suthong	Tiger
4	Kunthyong	Eagle
5	Sider	Thunder
6	Boo	Snake
7	Un	Horse
8	Lukh	Sheep
9	Suhu	Monkey
10	Heank	Hen
11	Kujyu	Dog
12	Mon	Pig

By this time Lasso Moong was tired and returned back to his normal shape and the soldiers were able to kill him. The day in which he was slain was the first day of 11th month of Tibetan calendar and known as black day and falls on dark moon night (*amabasya*). The Lepcha New year begins from this day. But people were not sure whether he was dead. They waited for seven days to be sure of this. People collected at the place where he was slain. They threw stones, pellets on him on the first day, the day of stone-*long sayek*. Next day they threw wood on him, the day of wood or tree-*Kung sayek*. On third day they threw iron on him, the day of iron-*punjeng sayek*, fourth day they dropped loads of mud on him-day of mud/earth- *fat sayek*, fifth day the body on put on fire-*mee sayek*, sixth day they threw the ashes in wind, the day of wind-*sugmut sayek* and on seventh day they pored water on the remaining, the day of water- *ung sayek*. These became the days of the week.

Concept of Lepcha Week

English name	Lepcha name
Sunday	Punjeng Sayek
Monday	Fat Sayek
Tuesday	Mee Sayek
Wednesday	Sugmut Sayek
Thursday	Ung Sayek
Friday	Kung Sayek
Saturday	Long Sayek

The Lepchas were very happy on his death; they assembled together and arranged a picnic celebrating the victorious event. Ten groups were formed and each group brought some food items or raw materials for cooking in the picnic. One group brought vegetables, another brought cooked food, some brought wood from jungles, and some brought utensils and so on. These ten groups are believed to be the original clan groups of Lepchas. Later many more clans evolved.

The Lepcha New Year Celebration known as Namsuong begins from the day on which Lasso Moong was slain which continues for seven days. The seventh day is observed as Ngenpa Guzom, an inauspicious day for most activities but a good day for picnic.

Resource Management and Forest Ecology

The hills and forests surrounding the villages play a vital role in Lepcha life. The close link with nature associated them with every fern, bush, moss and mushroom. The Lepcha language has names for most of the plants, birds, insects, butterflies, trees, shrubs, etc.

in their natural surroundings. They have their own mechanisms for utilization and conservation of the natural resources available in these hills and forests and take the refuge of the religious performances to save themselves from the different odd situations while in forests.

The land was a common property belonging to the clan and the Lepchas had absolutely no conception of private property and every thing belonged to the chief and community. After the introduction of monarchy through the office of Chogyal in 1641, the control of the entire land in this area belonged to the king and the basic stature remained the same (Kundu 1983). But the feudal structure of the society gradually came into play. With time the Sikkim kingdom was divided into twelve parts and each part was governed by a Kazi who used to assess the revenue payable, collect 'keep a portion for himself' and pay a certain fixed contribution to the Raja.

Hunting

In olden days the forest were the places for hunting games for the Lepcha men. Presently the villagers rarely go for hunting the wild animals as it consumes a larger part of the time for agricultural work. There are also restrictions of the government to hunt the animals. The older generations of the village recall happenings of such event during their childhood, but the younger generations do not have such experience. Morris (1938:192) in his account informs that the forests of Dzongu was well stocked with Deer and pheasants and thus by hunting people were able to supplement and make variations in their regular diet.

A boy would never ask his father to for a bow and arrows unless he happens to be a farmer because "hunting is merely play, and a father will want his son to work in the fields." Presently the male members resort to hunting for food only during the plantation or harvesting of cardamom in the *Illanji nyot* in the higher altitudes far distant from the village.

Worship of Forest God

Though hunting of animals are stopped but every year all the males of the village in the month of November make a sacrifice to god Mut Rum who is the master of forest and the animals. The observance of this ritual is known as *mut rum faat* and it is absolute necessary for all the male members of the village to observe it as the male is considered to be a hunter. Every year the all male of the village collectively assemble in a part of deep forest to observe the ritual. Rice, *chi*, fish, wild bird's flesh, ginger, sugarcane, banana etc are offered to the god Mut Rum. Some times only the clan members organize the worship together which reflects the clan solidarity. The clan solidarity is also reflected in the clan worship of the Lepcha people. It was observed that a major part of clan deity worship, which also includes the ancestor worship, takes part outside the homestead area in a distance surrounding a jungle ambience. The Lepcha woman does not take any part in the preparation nor they are informed of the place and time of the observance. Usually

one elderly person makes sacrifices on behalf of all, as it is absolutely necessary for the hunter to first learn the process of sacrifice.

Presently some houses have few hunting implements which are hung in the walls but with time the use have become obsolete. The common weapons used by people were the bow, arrow, and small pellet bow. The pellet bow has mud pellets about the size of a marble is principally used to kill small birds and also to scare them away from the crops and still used by young boys. Thus hunting as an age old tradition and knowledge is lost from them, only the ritual part is carried over and retained generations together.

Collection and Use of Forest Resource

Forest serves as an important natural resource for the Lepchas in all the sphere of life activities. It provides food, shelter, firewood, foddars, medicines, raw materials for house, agricultural items etc for the livelihood. The tough work and collection in deep forest is mainly done by the men but the bulk of the work is done by the women.

Use of Bamboo

Presence of bamboo bushes is a common feature in a Lepcha homestead. It has both ritual as well domestic utility. Few species of bamboo were also collected from forest for use in floor, ceiling, walls and balcony. Presently use of bamboo in house construction is replaced by woods from jungles. Only walls are made of bamboo strips with mud plaster. The following chart shows few bamboo species used by them in the village. In recent period the use of hats, rains hats, cane baskets have become limited.

Basketry and Bamboo works

Local Name of Bamboo species	Use
<i>Po</i>	Used by the Boongthing for ritual purpose, Taluyong (winnowing fan), small box, Tukshare are made from this species.
<i>Malo</i>	Tall and thick in growth, the bamboo shoot is used in various purpose; as stand for prayer flag (<i>Manidum</i> and <i>Lungtodum</i>), fence, for construction of walls and tree sheds.
<i>Padang</i>	Used for preparation of containers, mainly <i>puthyut</i> (<i>chi</i> container), and ghee container (<i>kyunkdung</i>) and water conduit.
<i>Bok (Padayang)</i>	Used in basketry work (<i>tungar</i>) and in preparing of structure of thatch.

Local Name of Bamboo species	Use
<i>Purfok</i>	For fencing and structure of thatch.
<i>Puyong</i>	Used in basketry work, <i>Pepsing /Puhip</i> (<i>chi</i> straw), arrow head, hats of different types
<i>Purmum</i>	For making fence, basket and thatch
<i>Fuyung</i>	For making basketry works and thatch
<i>Revit</i>	The shoot sprout is eaten raw
<i>Gesi</i>	Used in house construction, thatch, Shoot sprout is eaten.

House Construction and the Knowledge of Forest Resource

A Lepcha house and its surroundings are the miniature form of a forest. The way to any house is a long grassy and undulating path. There are no gates to enter but one finds a sort of fencing around the kitchen garden (*leesing*). The fencing is mainly done by bamboo splits to avoid animals and fowls from entering it. All the houses have a cow shed (*bik byong*), goat shed (*saar byong*), hen shed (*higlee byong*), and pigsty (*monlee byong*) which are found on the backside of the main house.

One can have an idea of the nature's availability from his surroundings. When a Lepcha constructs a hut in any area of the village he makes it sure to have few plants, shrubs and tress his homestead land which may be used as food items or used in ritual purpose or serve as fodder for his domestic animals. They mainly grow *famkum* (palm tree), *kundong kung* (a type of tree, the leaves are used as fodder), *sitkung* (grassy tree), *sungtungkung* (grassy tree), *suntongkung* (thorny grass), along with *chindenkung* (pine tree), *chalungkung* (orange tree), *ambakkung* (guava) and *leerung* (pear tree). Pine tree (*chindenkung*) has a ritual significance in very every aspects of a householder's life.

A traditional Lepcha house (*lee*) has four rooms. One enters the house through kitchen (*thop*) which serves as cooking cum entertainment place for guests. *Leebek* is the store room for keeping year long grains and food items for the family, *buchung*, a tiny room is used for sleeping and *diyong* is the place for worship and sleeping. Every Lepcha house has a Lamaist altar known as *tukchom* where each portion of every day food cooked for the family is offered and in evening *chimi* (brass lamp) is lighted.

Over years many changes have come in construction of a house either in the layout or in construction material through external forces. Almost every house in the village has

one or two children either studying in Gangtok or in service and they act as catalyst or forces in changing the layout of the house or the use of raw materials or in bringing new ideas of life and world. Presently almost all the families have replaced the thatched roof to corrugated roof. It has become economical in long run because bamboo thatched roof with maize and paddy had to be replaced every year. But there are few things which continue to exist till day. Most of the materials for house construction are still brought from jungle. The following chart shows the use of trees and plants for construction of the house.

Knowledge of Trees used in House Construction

Tree	Use in Construction of House
<i>Pande Kung</i>	Good quality wood for house construction.
<i>Sambrmkung</i> (Chiloni)	Used for making pillars (posts) of the house
<i>Sangrukung</i> (Utis)	Plank for the house to be used as floor.
<i>Kushyotarol Kung</i>	Beam
<i>Kusu Kung</i> (Kotus)	Construction Beam
<i>Dom Kung</i>	Used as support for creeper plants like Tungbit (Beans), Maursium (Pulses), Tomato
<i>Naklumkung</i>	Beam of cow shed
<i>Sinobukung</i>	Fence
<i>Padayang</i>	Structure of roof

Apart from the above trees, there are many more trees and plants used in construction work They are *Tunthung Kung*, *Dung Shing Kung*, *Rikkushyeo Kung*, *Dur Kung*, *Sunlok Kung* and *Polon Kung*. It is found that most of the household materials of daily use and agricultural implements are made from the forest resources like different kinds of wood, bamboo, cane, barks, flowers etc. The *chi* container (*puhyut*), straw (*puhip*), mortar (*khogdung*), pestal (*khukfat*), salt container (*vom chadung*), table for serving food (*chunte*), *tungset* (winnowing fan), ladder etc are made of wood or bamboo.

It is interesting to note that the each and every area and plot of the land has a name throughout the whole village and the villagers can identify the area through the name. Every piece of land is meaningful to them A part of the dry land forms the homestead

and in which the house (*lee*) is constructed. Every house and its homestead or a group of house has a particular name based on the landmark or on any speciality of the land. The Sangdong-Gnon village shows the following names:

Knowledge of the Resources through Names of Houses

Name of House	Meaning
<i>Sungcheuwang</i>	It is the name of a tree or small jungle of the particular tree. It means that house is surrounded by small jungle.
<i>Choten</i>	Mane, the house situated near the mane.
<i>Lomu</i>	Lu means area of snakes; at one time the place was full of snakes.
<i>Damseok</i>	Muddy land, the way to the house is always filled with water, low land
<i>Mandang</i>	The house situated nearer to plain land area
<i>Daraghar</i>	House situated at the turning point
<i>Rungvel</i>	House situated at the origin of two streams from one cave
<i>Chotara</i>	The house near the common sitting and chatting place for the villagers
<i>Amlobong</i>	House nearer the tree of Amla
<i>Nungjung</i>	A particular hill, the house on Nungjung hill
<i>Keongthat</i>	Topmost cornered house
<i>Ringik</i>	House near Ringikyun stream
<i>Tukcherbong</i>	House situated nearer to <i>tukcherbong</i> tree
<i>Chindenbong</i>	House nearer the groves of Pine tree
<i>Fatyordun</i>	Yellow soil, House having yellow coloured soil
<i>Padangbong</i>	House situated near the grove of this particular species of Bamboo family
<i>Chamburram</i>	House nearer the <i>chamburam</i> spring
<i>Sangkungbong</i>	House situated near the <i>sangkungbong</i> tree. The leaves are used as fodder
<i>Rinjobong</i>	House situated near the <i>rinjobong</i> tree. Sap comes out the stem of the tree. Leaves are used as fodder
<i>Phambong</i>	House situated near the Palm tree
<i>Yangthong</i>	House situated near the <i>yangthong</i> , grassy tree of plain land
<i>Longbong</i>	House situated near the big stone (Boulder)
<i>Leebong</i>	House situated near the Pear tree
<i>Sunungbong/Sunugkung</i>	House situated near the <i>Sunungbong</i> tree
<i>Leeal</i>	New House
<i>Noth</i>	House nearer the viewpoint
<i>Chalumbong</i>	House nearer the orange garden
<i>Arinyot</i>	House in paddy field
<i>Pugong</i>	House nearer the this species of edible bamboo groves
<i>Ruvongbong/Ruvonkyung</i>	House nearer the <i>Ruvongbong</i> spring
<i>Sunung</i>	House nearer the dark surrounding area

The above table shows that they identify the area with some name, whether that physical identity is still present or not. For example, it is well known to any villager that paddy field is known as *arinyot* in Lepcha language. But at present when we go that house we find that it is surrounded by forest. But at one time it used to be the paddy field. This gets clearer when we find that near by there is a paddy field, which belongs to the brother of the house owner.

Collection of Firewoods

One may note that the Lepcha people maintain a discipline in acquiring the large forest trees for construction as they are very valuable and has cash value. Each family has some area of land in the forest for cultivation where they grow tress for their use in future. A family mainly lops up those trees for his use. It is taken care that there should not be any misuse of any forest property in his land, otherwise it is a loss in the family.

The collection of firewoods (*syang*) and grasses are one of the chief daily work which is mainly done by the teen-aged boys, women and aged men who go to the near by forest area for collection. The extended form of family is helpful in completion of the daily household chores. A family requires the service of young boys and girls who mainly go twice a day for collection. The first one begins in early morning after the morning tea. By the time they return from collection, it is time for lunch. They take meal twice a day; first meal is usually taken by 10 AM. Then the people remain busy in other works. Again in the afternoon, another set of collection begins which continues till dusk. It is expected that the male members of the family would collect the heavy firewoods, but in the family where male members are unable to support the family in collection because of other engagements, women take the lead role in collection of the firewoods, roots and tubers and grasses and leaves for the domestic animals. The trees available in the forests for use as firewood are *Sirikung*, *Sompong kung*, *Sambramkung*, *Khemu kung*, *Khejuk kung*, *Rung kung*, *Samal kung*, *Keletum bonkung*, *Nambiyong kung*, *Tunglukung*, *Sankar kung*, *Subeok kung*, *Sindeoyong kung*, *Takcher kung*, *Sungchong kung* and *Nambru kung*.

For any particular occasion either in marriage or religious work or festival they go deep in the forest along with few villagers who help in firewood collection. Otherwise individual family collects the firewood for their own consumption. When the villagers join together for any work in a particular family, after returning to the village food is served to them for the help and never counted as remuneration. The relation is based on reciprocity.

Resources Used as Foddar

The forest provides ample resource of grass as foddars for the animals. Some grasses collected by them are *Sitkung*, *Elekung*, *Leekung*, *Leekpe*, *Santung kung*, *Sankung*, *Ranjeekung*, *Lafa kung*, *Yeokkung*, *Tangjee kung*, *Seeyekung*, *Seyhet kung* and *Polonkung*.

Resources for Foddar

Domestic Animal	Resource Used as Foddar
Cow or Ox	Banana stalk, Maize stalk, Paddy, Mustard skin(<i>pina</i>), Grass, salt water
Pig	<i>Sunol</i> grass(found in summer), Quash, Pumkin, remains of <i>chi</i> , <i>chekla</i>
Goat	Banana stalk, Maize stalk, Paddy, Mustard skin(<i>pina</i>), Grass, salt water, remains of <i>chi</i> .
Fowl	Maize, paddy grains, <i>kodo</i>

They take two meals a day, the bigger one in the morning before going to work and the second one in the evening. Rice is supplemented with vegetables. Some times a light vegetable soup or pulse is also added in the meal. They are very fond of pickles; the ingredients are mostly brought from jungles. The availability of vegetables depends on the season of year. Winter is full of seasonal vegetable but during summer and rainy season the choice is little. Some fast food items have penetrated in village through the villagers or students but the regular food is the same as available in the village. Seasonal vegetables, roots and tubers are raised in the kitchen garden (*leesing*) of every house.

Season wise availability of Vegetables in Leesing

Season	Availability of Vegetables in Leesing for Human Consumption
Summer	<i>Tungbit</i> (Beans), <i>Potat bukh</i> (Potato), <i>Mator</i> , <i>Dulom</i> (Brinjal), <i>Beetim</i> (Bitter gourd), Chilli
Rain	Same as Summer season
Winter	<i>Kundang bee</i> , <i>Marsium</i> , <i>Tungbit</i> (Beans), <i>Beetim</i> (Bitter gourd), <i>Dulom</i> (Brinjal), <i>Bulbee</i> (Snake gourd), <i>Khaktikpat</i> (Quash) <i>Chatela</i> , <i>Beriupat</i> (Small sized tomato), <i>Beriu</i> (Tree tomato)

They are fond of non-vegetarian food. Chicken, beef and pork form the part of their diet. They collect the fish in the river and streams through use of small nets. Beside this they also use forest products like roots and tubers in their daily and ceremonial use. But the availability of root and tuber depend on the season. Barring one or two tubers, all the roots and tubers are available during winter season. The following table shows the roots and tubers taken by the Lepcha people as food.

Roots and Tubers used

Roots & Tubers	Availability and Use
<i>Pishen</i>	Available in rainy season. Boiled and water is drained. Used in <i>chi</i> , the powdered form is used for making bread. It is available in jungle and has to be consumed within fifteen days.
<i>Pakjeek</i>	Available throughout the year. The tuber is boiled in water, and then dried for two nights to make bread.
<i>Punjokbur</i>	Roots are boiled as vegetable, used in <i>cho</i> (food offerings to god), smoked and eaten
<i>Suumbuk</i>	Roots are boiled, eaten as vegetable, used in <i>cho</i> , smoked and eaten.
<i>Kusok</i>	Boiled and eaten
<i>Kaching</i>	To make it edible, first it is washed and kept in water for 2-4 days, then boiled and eaten.
<i>Finel</i>	It is grinded in mortar and pestal and some citric fruit is added and then eaten.
<i>Singti</i>	White coloured tuber, leaves are given to pig, tuber is boiled and eaten, used in <i>cho</i> .
<i>Tunglobuk</i>	Tuber is boiled and eaten, used in <i>cho</i>
<i>Booku buk</i>	Purple coloured tuber. Boiled and eaten.
<i>Mungur Buk</i>	Boiled and eaten

Weaving

The weaving and weave patterns were famous at one time but now it is almost extinct. The traditional dress of male, *thakro* represents the finely woven, striped pattern over a plain or a patterned background. Even Gorer about a hundred back informs us that the art is lost by these people. There are one or two families in the villages of Dzongu who occasionally weave. The government is trying to revive the art by introducing a training centre in Lingdong village of Lower Dzongu where young trainees learnt the art. But now during the marriage ceremony the bridegroom wears it for the occasion or during festivities in a dance sequence. It is observed that the anti dam protestors in the villages

are also encouraging the traditional dress as a part of revival of traditionality, the knowledge and identity.

Knowledge of Use of Medicinal plants

As defined earlier; the Lepchas relate their disease and illness to their creation myth. To them Khangchendzonga is the protector and the forest, hills and hillocks, trees, springs and streams all are part of it. The deep deep forests of Khangchendzonga provide them various kinds of herbs, plants and tubers which have medicinal value. According to them the source of the disease are the demons (*moong*) who live in the hills, streams and springs of Khangchendzonga. Psychologically they go back to their origin myth to figure out the disease as well as for its remedy. The remedy of the disease is perceived psychoanalytically as well as clinically. The psychological aspect of illness is treated through the propitiation of deities (*rum*) and appeasement of different spirits and demons (*moong*) living in the streams and hills. They believe that the displeasure of guardian deity and other spirits brings disease, different calamity, landslide, flood or even a bad crop produce in the village.

For cure they resort to the tribal shaman and medicine man (Mun/Bongthing) and to Lama (Buddhist religious priest) psychologically as well as to the herbal medicines given by them based on local herbs, shrubs, roots, tubers, flowers and bark of different plants and trees available in the area.. Both the Bongthing and Lama have their own role in treatment of disease and in appeasing the god and devils. The offerings (*serkhem*) are made during any appeasement to the *rums* as well as to the *moongs* by the Bongthing and Lama as dictated by the mother creator Kumsiting. According to Lepcha tradition the *Mun* and *Bongthing* are the media for communion with the god (*rum*) and the devils or demons (*moong*). They believe that the *Bongthing* are able to communicate with all the devils / demons (*Moongs*) except the 'Dom *moong*', who brings Leprosy to the people. There is the belief that any disrespect shown to the *rum* or *moong* can bring harm to the community or individual. For this there is community/village level appeasement and individual appeasement based on the disease.

In Sangdong-Gnon village, it was observed that along with the traditional Bongthing/Lama there has come up few specialists for the treatment of disease. There are few specialist persons in the village who have the knowledge of curing fractures through use of medicinal plants. There are two persons who have the knowledge of curing from snakebite. The villagers go to these specialists for the treatment but after the cure they come back to Boogthing for appeasing the *rum* or *moong* which has done the harm.

Medicinal plants used by the Lepchas for different diseases

Sl.No.	Local Name	Parts of the plant used	Method	Disease
1.	<i>Anjo Anji muuk</i>	Bark	Bark is pasted and mixed with luke warm water and given to patient.	Spleen, liver and abdominal complaints.
		Seed	The seeds are pasted and given to the patients by adding cold water to it.	The seed cures ulcers, eye ailments and lessens the muscular pain.
2.	<i>Mongjing Sungtuk</i>	Tuber	Tuber along with grass	Given to cattle for removal of worms.
3.	<i>Tuknil Titepati</i>	Seed	Seeds are pasted, mixed with water.	Used as appetizer and aphrodisiac.
4.	<i>Khursinglo</i>	Roots	Roots are pasted and mixed with milk.	Cures Leucorrhoea and diarrhea.
		Bark	Bark is boiled in water and hot compress is given.	Relieving fractures.
5.	<i>Breng Guwa Muuk</i>	Rhizome	Extract of rhizome is mixed with hot water.	To prevent bleeding during childbirth. Relieves pain during menstrual disorders and in dysentery.
6.	<i>Cheetkung</i>	Seed	Seed is mixed with water.	Has a tonic and aphrodisiac property.
		Root, Bark, Flower	Juice of root, bark and flower	Controls the ill effects of diarrhea and animal bite.
7.	<i>Rhar Kung</i>	Root	Decoction of roots are made.	Cures Dyspepsia and Flatulence.
		Bud	Decoction of bud	Cures cough, piles, diarrhea and dysentery.
8.	<i>Chuli Kung</i>	Roots, Bark	Paste of roots and bark is made	Used to cure diabetes and rheumatic pains. A useful uterine tonic and regularizes the menstrual disorders.
9	<i>Jyang Mung Rip</i>	Flower	Juice is mixed with ginger	Fever
		Leaves	Juice of leaves are mixed with black pepper	Used for curing rheumatism.
10	<i>Kanthey Pam</i>	Roots, Leaves	Paste of roots and leaves	Applied on boils and skin disorders.
		Bulb of root	Bulb of root is used a container for drinking water to poultry.	Keeps the poultry free from epidemics.
		Root	A paste is made.	Used in stomach pains.

Sl.No.	Local Name	Parts of the plant used	Method	Disease
11	<i>Rung Kyen Kung</i>	Whole plant (<i>Chiretta</i>)	Decoction of whole plant	A remedy for fever, cough and malarial fever. Cures acidity and lever function.
12	<i>Kufer buuk</i>	Rhizomes Root Flower	A paste is made Decoction Boiled in water and water when applied	Diuretic property and cures fever. Cures fever and Leprosy Cures eye disorders
13	<i>Sungen Kung</i>	Pods	As tablets	Purgative
14	<i>Samal Kung</i>	Bark	Mixed with lukewarm water and paste is made	Clears bowels, useful in ulcers and cures fevers
15	<i>Phirupat</i>	Leaf	Extract of the leaves	Useful in gastritis, increases memory power.
16	<i>Ari Nom Muuk (shrub)</i>	Bark	Made a paste using water	Helpful in curing ulcers and sores, diuretic properties.
17	<i>Kurmu Kung (Cinchona)</i>	Bark	Paste of the bark or the extract made by boiling the bark	Used in different types of fever especially the malarial fever.
18	<i>Sumsor Kung (Tejpata)</i>	Leaves	Leaves are boiled in water	Used in relieving pains after delivery.
19	<i>Bongnok Monrik</i>	Whole plant	Extract of whole plant	Used in Diarrhea,
20	<i>Kachi Kung</i>	Fruit Fruit and Seed	Decoction of fruit Whole fruit and paste of seed	Effective in curing vomiting. Helpful in cardiac ailment and relieves palpitation.
21	<i>Tungkrang Rip</i>	Root	Fresh roots are crushed and tied in cotton cloth and heated in oven for few minutes.	Strong fume produced is inhaled to remove sinus.
22	<i>Purbong Kung</i>	Bark	Juice of bark	Useful in urinary complaints and fever and mild skin disease.
23	<i>Manimuuk</i>	Leaves	Extract of leaves are made by boiling in water	Relieves Diarrhea
24	<i>Roo Paong</i>	Rhizome	As vegetable or boiled in water	Used for urinary disorders and food poisoning
25	<i>Kaol Kung (Walnut)</i>	Nuts Bark , Nut	Boiled in water and fried Paste of bark and whole nut	When consumed helps in relieving rheumatic pains. Destroys intestinal worms

Sl.No.	Local Name	Parts of the plant used	Method	Disease
26	<i>Phirupat</i>	Fruit	Direct consumption	Helpful for health for post natal mothers.
27	<i>Sumbram Kung</i>	Fruit	Dried fruit paste	When applied removes dandruff
28	<i>Pushore (Broom grass)</i>	Root	Boiled and made paste and applied. Juice of root	Cures boils, sores Helps in gastric problem
29	<i>Tung Kung</i>	Root, Stem Root, Stem, Seed	Paste of root and stem All are boiled together	A first aid medicine for snake bite Cures food poisoning, Rheumatic pains.
30	<i>Tuk Gnyel</i>	Whole plant	Juice of whole plant when taken	Cures asthma, itching. Has an antibacterial and antifungal property.
31	<i>Sunlen Kung</i>	Fruit Whole plant	Directly eaten Juice is made by boiling in water	Improves appetite and eye ailments. Cures spleen disorders, fractures, removes tapeworm
32	<i>Suntung Kung</i>	Root, Bark, Branch, Fruit	Paste of all the ingredients when eaten or applied	Cures diarrhea, jaundices, eye infection and skin disease. Extract of root has anti cancerous properties.
33	<i>Nambro Kung</i>	Leaves	Juice of the leaves	Used in curing hysteria, spasmodic cough, diarrhea, Helpful in diabetes and hypertension.
34	<i>Karhyo</i>	Fruit Root	Directly taken Juice of the roots	Helps in curing tumors, leucoderms, ulcers, jaundice. Relives joint pains
35	<i>Chalum (Orange)</i>	Fruit Flower	Dried skin of the fruit Juice of flower	Used for curing dyspepsia Has antispasmodic and sedative property
36	<i>Kashyum Kung</i>	Root, Stem	Boiled and juice is made	Cures colic pains and stomach worms.
37	<i>Kamki Kung</i>	Bark	Paste of the Bark	Applied for healing the fractured bone
38	<i>Kunthem Pat</i>	Fruit	Juice of the fruit	Cures asthma, cough and relieves rheumatic pains

Sl.No.	Local Name	Parts of the plant used	Method	Disease
39	<i>Khadao Rip</i>	Petal Bud, Root	Paste of petals Paste of bud and root are mixed with water or tablet is made	Applied in cut to stop bleeding For curing tuberculosis
40	<i>Gey Bukhnaok</i>	Root	Decoction of root	Cures fever, a useful medicine for malaria and other fevers.
41	<i>Tukcher Kung</i>	Root, Bark Leaves	Powdered Juice of new leaves	Applied to give strength to the gums Helps in curing night blindness
42	<i>Tumbaar Rip</i>	Flower Root Paste of root	Paste of flower Juice of root	Given to cure cough and asthma. Cures jaundice Cures skin eruption and ulcers.
43	<i>Tung Loo Kung</i>	Sap Root	Diluted with water Juice of root	Cures dysentery Gonorrhea
44	<i>Durbihyur</i> (Mushroom)	Mushroom	Dried and powdered and soaked in luke warm water	Applied in ear to cure ear pains.
45	<i>Pong Mukh</i> (a type of grass)	Root Whole plant	Decoction of roots Crushed root Juice of plant	Stops bleeding of piles Cures chronic gonorrhea Cures cuts and wounds
46	<i>Vum Rik</i>	Root, Fruit	Pasted and juice is made	Cures skin ailments and acts as cleaning agent after delivery
47	<i>Safok Jyu</i>	Fruit Leaves	Directly taken Juice of leaves	Cures bed wetting Helpful in cleaning menstrual discharges
48	<i>Kasimji</i>	Leaves	Tender leaves mixed with cold boiled water and the sap is extracted	When taken gives a relief to tonsillitis
49	<i>Sahaor Pat</i>	Fruit	Powdered fruit Cooked fruit	Cures severe head ache Acts as stimulant of the heart in case of heart failure.
50	<i>Saong Kung</i>	Leaves	Juice of the leaves mixed with ginger, cardamom, clove, sugar Extracted oil from leaves	Gives relief to asthma and bronchitis Heals up internal haemorrhages and tuberculosis.

Sl.No.	Local Name	Parts of the plant used	Method	Disease
51	<i>Payezo Kung</i>	Bark	Boiled in water	Cures diabetes
52	<i>Rungtheon Kung</i>	Bark	Boiled in water	Paste when applied gives relief to bone fracture
53	<i>Tungsher Kung</i>	Fruit	Boiled and juice is prepared	Juice with water cures diarrhea
54	<i>Fujinyok</i> (Shrub)	Stem	Cooked as curry	Relieves throat pain
55	<i>Ringken</i>	Whole shrub	Cooked as curry	Relieves cold and cough
56	<i>Pungu</i> (Shrub)	Leaves	Leaves are boiled in water and mixed.	Relieves stomach ache and gives relief to tuberculosis patients.
57	<i>Tobdokmon</i>	Stem, Leaves	Boiled in water	Relieves stomach pain and diarrhea
58	<i>Sunthatmu</i>	Bark, Leaves	Bark and leaves are pasted	Applied to fractured part of body or administered as tablet.
59	<i>Kulhan Pey</i>	Sap	Sap is extracted	Used a medicine or used as ointment
60	<i>Feugndisurong Tarhambru Pushyore</i>	All the three plants	Three plants are mixed together	Given as paste to stunted and rickety child for growth.
61	<i>Tarhimbru</i>	Leaves, Stem	Boiled and juice is extracted	Juice is applied to teeth or gum to relieve tooth ache.
62	<i>Siliqe</i>	Ginger like Tuber	Mixed with cardamom	Used in cough, cold, stomach pain, diarrhea and dysentery
63	<i>Yerkeokung</i>	Bark	Boiled	Given compress with this water relieves fracture pain
64	<i>Yeok Kung</i>	Grass	Crushed and pasted	Applied in fracture
65	<i>Tingshrel</i>	Seed	Seed are directly taken	Relieves Diarrhea and Dysentery in human and animals.

Though the villagers and medicinemen are able to give the information about the herbal medicines used in the cure and prevention but it is difficult to ascertain that which of the informations are passed to them by the old generation. It may be noted here that Lepcha tribals are directly connected to the outside knowledge through the market of towns they visit. Any new knowledge is thus passed on from one area to another area.

Shifting Cultivation- a foregone knowledge and pursuit

The literature of early writers show that the Lepcha were shifting cultivators. The males used to dig the earth with pointed rod while the female followed them by inserting paddy seed inside the loose earth. The writings of H.H. Maharaja and Maharani Dolma of Sikkim in 1908, inform that a new patch of jungle was cleared every year and dried and then fire was set on it. On the cleared space, paddy, *kodo* and maize as well as various grains were grown. On the next year, another patch of jungle was cleared. The process yielded a good crop. The cultivation of rice was quite old in the area and this gets established as the staple food of Lepchas is rice.

Introduction of Terrace form of Cultivation

During the British period, the Lepcha of Sikkim were forced to adopt settled cultivation. According to O'Malley (1907) the Lepcha had to give up their old nomadic cultivation and lost much of their dependence on jungle with the introduction of settled cultivation and the reservation of forest. In consequence they had to learn to make terraces for rice fields and the methods of agriculture practiced by Nepalese. As use of forest resource was restricted, they were compelled to depend entirely on terraced based cultivation. Due to the agriculture based subsistence they started producing the crops needed for their consumption which included rice, maize, millet, buckwheat, barley and vegetables. They started using small tools, domestic manure, domestic seeds, rainwater and household labour. The concept of wage labour was totally absent and the entire operation was carried out with family labour. The Nepali immigrants also brought the technique of cardamom plantation in Sikkim which is again a new introduction of knowledge and the idea of sharecropping.

Presently in Dzongu the lands are classified into three categories as per settlement pattern. They are dry land (*fatnyot/fatsoun*), wet land (*arinyot*) and cardamom land (*lingeenyot*). All the lands are scattered all over the village area. Every family has more than seven or eight strips of land spread all over the village. In Sangdong village, three types all lands are found in three different altitudes. The paddy fields are situated nearer to the Teesta river bed at a lower altitude as the paddy lands require perennial water thw territory of which falls in Gnon village, whereas the dry lands are situated in an altitude surrounding the settlement areas of the villages. The cardamom fields are mostly situated far from the village .It takes about three hours climb from the village top. Some may be nearer to the village, or in the village and most are in quite a distance from the village.

Dry Cultivation

The dry lands of the Lepcha families are scattered all over the village. They mainly grow maize, buckwheat, millet, *kodo*, wheat and soyabean. The villagers are busy in agricultural

work from end of March to end of September; the next few months are lean period. From October to January it is the festive period for the people. By this time after the harvest, there is money in the house. It is also the period when annual worships are done including the harvest worship i.e., Lee Rum fat, Leengjifat, and Fa-lo (clan worship). Marriages are held during this period.

Introduction of Cardamom field

According to Gorer, the introduction of Cardamum (*Ammomum subulatum Roxburgh*) cultivation by the Nepali immigrants also brought some associated beliefs in cultivation which was not present earlier among the Lepchas. Later the Lepchas absorbed few of the rituals with their own. The Lepcha had no such idea before nor do they have such taboo in other kinds of cultivation. The cultivation of cardamom also brought the idea of sharecropping (*adhia*). The cardamom fields are mostly leased out on *adhia* system to the Nepali seasonal labourers who are the main workers in the cardamom gardens and constitute the prominent sharecropper class. The produce is divided into equal halves between the landlord and the tenant whereas the former contributes only the half of the seeds required for the next season. These Nepali labourers have also given rise to the group of agricultural labourers and *gathalas* or cowherds in the villages that basically do almost all works from cultivation to the household works.

Cardamom is grown in all over the hills of Dzongu, the field is known locally as *lingjeenyot* though upper Dzongu villages show a large presence of cardamom plantation than the villages of lower Dzongu because of the altitudinal advantage. The cultivation process is tabooed for women in Dzongu though in other areas of the Sikkim the women are the main cultivator. It is a perennial plant and reaches its full bearing within three years. The plant starts declining at the end of ten years and new planting are made in the same land as the plant does not exhaust the soil. The plants need a good deal of care and weeding is done thrice a year as the buds and fruit grow close to the ground. When the fruit is collected the old growth is cut down and burned. They follow a long process of traditional method of drying the cardamom. The traditional modified oven used for drying the cardamom is made with locally available construction materials viz. mountain rock/ stone, bamboo or wire mesh mat and wooden frame etc. The oven has thick stone walled structure on three sides and a wide opening on the front wall for feeding of large size wood logs for burning. The average size of a oven is 10' x 10' with 5' height. Its top opening is covered with a bamboo / wire mesh mat. Fresh cardamom capsules are spread in 8 inch to 12 inch thick bed over the bamboo / wire mesh mat for drying. Usually the cultivators cut the nearby trees into logs for drying of cardamom. So burning of the wet wood generates a thick smoke and the cardamom bed is exposed to the smoke during drying.

At present, cardamom is not giving a good return, not even an average. Earlier the plantation was found all over the village, but now some grow only in the higher reaches, but also is not giving a good return. But now a blight infection causing fungal infection is destroying the cardamom crop. As result the Nepali labourers who used to come during the cultivation have stopped coming to the villages as sharecropper.

Introduction of Wet Cultivation

In Dzongu villages wet rice cultivation had began only a century back. Gorer in 1938 writes that in Lingthem village, the wet rice was introduced only twenty years back on an experimental basis. Later on other areas near the water sources came under wet cultivation.

The whole process of cultivation begins some times in June and completes by early November. The wet terraced lands of Sangdong village are mostly situated in Gnon village in terraces situated in the low altitude Teesta riverbed. During the rainy season the water level increases and the small streams get filled with water. During the month of June two or three members of the family go to the field and clean and clear the land with *kodali* and *kata* for preparing the seed bed. The land is levelled and is watered for two nights with spring water. Paddy seeds are germinated by mixing of paddy seed and cow dung by covering with a sac for two nights. After that the germinated seeds are ready for sowing in seedbed. This process requires two or three family members. Before sowing the seedbed cleared with *kodali* and *kata*. The land is again levelled (*feuri*) and watered for two nights. During July and August the family members remain busy in clearing of the field. Ploughing is done only once. The terrace wall is cleared and the land is watered for 3-4 days. By this time the saplings get ready for transplantation. Sowing of paddy requires the help of more number of women. With sowing of paddy black pulse is broadcasted on the ridges of the agricultural field. In Lepcha village the agricultural work is community work. The Lepchas do not engage any wage labourers for agricultural work. From each family one or two members come for cooperation and in few hours the job of sowing for one family is over. The next day another villager's field is fixed for sowing. The field is watered from time to time by the family members. By Sept and October the weeding (*zo bukset*) is done for a week. By end of October-November the paddy is ready for harvest. Harvesting is again a community work, which takes one full day for the family field and requires a clear division of labour. The women folk cut the paddy with sickle and men collectively do the thrashing with hands. After that paddy is kept in sacs for transportation to the village. The villagers who bring the paddy sacs from field are invited to have dinner with the family. The harvested paddy is dried in the sun and cleaned. After that the sac is kept in *phalong* (ceiling) for the consumption.

The following agricultural calendar shows the year long agricultural work in the dry field through out the year.

Agricultural Calendar

Month	Agricultural Activity
January	Sowing of sweet and bitter buckwheat (<i>kurhu/khurhat</i>)
February	Land is cleared for the next produce and completion of sowing of buckwheat.
March	Land and grasses are burnt; fertilizers are given to the land. Ploughing of field. Maize is broadcasted with digging stick. Stick for growth of <i>Simble</i> is fixed. Weeding is done in cardamom field.
April	Harvest of wheat, clearing of ground for millet. Weeding is done in cardamom field.
May	Harvest of buckwheat. Mud is cleared in maize field. Sowing of <i>Kodo</i> (millet)
June	Weeding is done. Mud is cleared in maize field. Preparation of paddy field and seed bed(wet cultivation).
July	Soil is given to maize when cobs start growing. Weeding is done in <i>Kodo</i> (millet) field. Clearing and ploughing of paddy field. Sowing of paddy and broadcasting of black pulse on the ridges of the agricultural field
August	Weeding is done in cardamom field. Clearing and ploughing of paddy field. Sowing of paddy and broadcasting of black pulse on the ridges of the agricultural field.
September	Harvest of <i>Kodo</i> and cardamom. Weeding in wet land.
October	Harvest of <i>Kodo</i> and cardamom. Weeding in wet land and harvesting the paddy.
November	Harvest of <i>Kodo</i> . Clearing the ground for next <i>kodo</i> crop
December	Clearing the ground for next <i>kodo</i> crop

Emergence of Ginger as Cash Crop- Recent Phenomena

In recent years, ginger has come up as important cash crop as it gives the return twice a year, first by selling the mother seed and second by selling the final crop. Many villagers are turning towards ginger cultivation in place of cardamom as cardamom is giving a good return.

Traditionally the Lepchas give priority in cultivating the crop as it is required in all their religious rituals and also for curing diseases. All Lepcha households cultivate ginger as ritually, they are not allowed to take ginger from others for rituals. The Lepchas observe a religious ritual before using, eating or even bringing the new ginger crop into the house. In this ritual the spirit from the river Teesta is evoked and ritually brought to the field and offered paddy, a red cock and some local wine along with ginger. Once the offerings are made and the chanting completed, the spirit is guided back to its original place. It is believed that if this ritual is not observed, bad omen would occur to the family and household. For instance, people will fall sick, cattle will die, or crop production will be poor.

It is cultivated through traditional production methods and rhizomes can be harvested twice a year—the main rhizome halfway through the growing cycle and new rhizomes when the crop is fully grown. The tuber can be grown economically on small plots in a wide range of environments and thus the smallholders and marginal farmers grow ginger and sell or consume the crop without any processing.

Discussion

The preceding pages give an idea of the landscape, which lies at the heart of people and shaped their attitudes to the ecology, environment and the spirit. The Lepcha people take the help of their creation myth to legitimize their position in the sacred landscape of Dzongu. The sacred space of Dzongu symbolizes the sacred hills, its forest, the residence of the guardian deities of the area, a source of wisdom and knowledge. It is also a place where they connect themselves with their ancestors and take important decisions. The sacredness has diverse meanings and simultaneously reflects the changes in the community and its relations with the world.

We come to know the various upheavals through which the community had to pass in different periods. The chart below shows at a glance, the changes and interventions the community had to undergo with different land policies of the state.

Interventions in Land and Resource Management

Year/Period (Published Records)	Rule	Interventions	Notion & Utilization of Land	Associated Material culture	Associated Religious Belief
Before 1641 Sen (1983) Morris (1938)	–	–	Land-Common property of Lepchas Gathering and God, Clan god collection Hunting. Shifting Cultivation- Based on aged old knowledge. Cultivation of dry rice.	Cave dwellers Weaving, Basketry	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god Bongthing as priest.
After 1641 Sen (1983)	Rule of Chogyal	Control of land by King. Taxes imposed on land through Kaji.	No concept of private property. Nomadic habits. Dependence on forest produce. Hunting Shifting cultivation.	Primitive agricultural implements. Digging tools. Weaving, Cane and Bamboo basketry. Thatched huts- raw materials from forests. Herbal medicines	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god Introduction of Buddhism Bongthing and Lama as priest
British Period	Chogyal Rule under the British pressure	Forest. Reservation Lepcha tribals forced to adopt Settled cultivation. Introduction of new knowledge by Nepali immi grants— From Shifting to Terrace Cultivation Nepali Immigrants brought another knowledge----- Cardamom cultivation.	No concept of wage labour. Forest resources started shrinking. Terrace cultivation. Use of small tools, Domestic manure, labour more used in terrace cultivation,	Weaving and Cane & Bamboo basketry still continued. Thatched huts- raw materials from forests. Herbal medicines	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god. Bongthing and Lama as priest
1938 Literatures based on Gorer & Morris' Field study in Lingthem village	British Period	Introduction wet cultivation- – new knowledge	Collection of fruits, roots and tubers. Hunting stopped. Shifting cultivation in very few patches	Weaving forgotten. Traces of weaving here and there (Loss of traditional knowledge) Hunting considered	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god. Bongthing and Lama as priest

Year/Period (Published Records)	Rule	Interventions	Notion & Utilization of Land	Associated Material culture	Associated Religious Belief
			<p>Terrace cultivation Cardamom cultivation by Nepali labourers on sharecropping.</p> <p>Rice cultivation in few villages.</p> <p>Cardamom as cash crop.</p>	<p>a past time because farmer "hunting is merely play, and a father will want his son to work in the fields."</p> <p>Presence of basketry</p> <p>Thatched huts-raw materials for construction from forests</p> <p>Herbal medicines</p>	
1958	Chogyal Rule	<p>Through a royal royal proclamation Tashi Namgyal, the then Chogyal of Sikkim reserved the Dzongu area for the Lepcha community.</p> <p>Restriction of the entry into the area by all non-Lepcha, including the Lepchas from other parts of Sikkim.</p>	Same as earlier	As earlier	<p>Worship of Khangchendzonga Mt.</p> <p>Worship of Forest God, Clan god</p> <p>Bongthing and Lama as priest.</p>
1975	Merger of Sikkim state to Indian Union	Indian Constitution amended to provide protection to Dzongu's special status.	Same as earlier	Same as earlier	Bongthing and Lama as priest.
Field Study August 2008 Nov 2009-Jan 2009	Sikkim – an independent State	–	<p>Hunting stopped.</p> <p>Shifting cultivation stopped completely.</p> <p>Terrace cultivation–</p> <p>Presence of Dry field, Wet field & Cardamom field.</p> <p>Cardamom not yielding as good produce.</p> <p>Ginger emerging as cash crop.</p>	<p>Raw material in house construction remains same.</p> <p>The thatched roof replaced by corroborated sheets</p> <p>The base pillars or posts on which main house was built is replaced by different sizes of stones and boulders.</p> <p>The room utilization has changed. The kitchen separated from other rooms in many families.</p>	<p>Worship of Khangchendzonga Mt.</p> <p>Worship of Forest God, Clan god.</p> <p>Bongthing and Lama as priest.</p>

The table makes it clear that almost under in each rule, the Lepchas tribals had to make sacrifices their land. They were able to use the land for the subsistence when it was a common property. They lived on shifting cultivation and collection of forest products and

learnt the use of herbal medicines. It was a collective knowledge. The ancestor and nature worship through the priest and Bongthing helped them to fight against the nature's rage.

The Chogyal rule brought a new religion Buddhism and a new priest Lama. Though they continued with their livelihood pursuits, the land was now under the king's rule. They now had to pay taxes for their own land. Historical records and field based study informs that the British pressure on Chogyal rule brought many changes. They reserved the forest, the consequence of which was that the Lepchas were forced to shift from the age-old pursuit of slash and burn cultivation and adopt and learn settled cultivation in form of terrace cultivation from the Nepali immigrants. They continued the collection of firewood, roots and tuber, and foddars and still depended on herbal medicines. But in the long run, they lost the knowledge of weaving and to some extent the basketry. The knowledge process was now slowly moving its path from a collective learning to individual or specialized learning.

The Nepali immigrants also made a great impact on their material culture and especially on their language. The basketry which was a regular activity in every house for their own use is now in hands of a very few. The traditional hat has now become a symbol to show the past heritage and tradition. The Lepcha villagers still use bamboo baskets of Bhutia origin, which is known as *doka*. The original *tungaar* is rarely found. Similarly the traditional hearth is replaced with Bhutia hearth.

About a hundred years back, again a new knowledge in form of wet rice cultivation entered the area and spread in all the villages. Hunting now became a past time and not resorted for necessity. The cardamom cultivation continued with the help of Nepali labourers as cash crop who worked on *adhia* basis (share cropping). The condition remained almost same even after proclamation of the Dzongu as reserved area and after the merger of Sikkim state in India in 1975.

By this time much of the earlier pursuit is lost. We find that every time the Lepcha tribals had to shift their occupational strategy with the change in the policies of the land management. In return they lost their traditional resources and knowledge and learnt to adopt a new knowledge; the impact of this intervention is directly felt in the management of lands and in subsequent knowledge spheres.

The present agitation and the associated cultural revival emphasizing their cosmological attitudes affirm their cultural roots in forests and their connection with the sacred land. His creation myth identifies him with his knowledge of environment and his healing traditions. His fight for the traditional land is a protest process. Though this, the Lepchas as a community

are trying to negotiate for an alternate development strategy, their traditional rights and their traditional knowledge for their lands and the future generation.

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